CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Chambers, City Hall, 288 Central Avenue, Dover, NH 03820
Meeting Date: **Tuesday, March 24, 2026**
Meeting Time: **7:00 pm**

1. **CITIZENS' FORUM**
2. **APPROVAL OF THE PRIOR MINUTES**

- March 10, 2026 Regular Meeting Minutes

3. **OLD BUSINESS**

A. Consideration and acceptance of a Conditional Use Permit for Mechanic Street Realty Trust, Assessor's Map 24, Lot 101, zoned CBD-G, located at 9-11 Mechanic Street. (Proposal is for one accessible residential unit on the ground floor where a non-residential use on the ground floor is required.) *(COND-2026-0007) *(This item was continued from the February 24, 2026 Planning Board Meeting)*

B. Consideration and acceptance of a Conditional Use Permit for Mechanic Street Realty Trust, Assessor's Map 24, Lot 101, zoned CBD-G, located at 9-11 Mechanic Street. (Proposal is to construct a mixed-use building that would have less than the minimum required lot coverage.) *(COND-2026-0008) *(This item was continued from the February 24, 2026 Planning Board Meeting)*

C. Consideration and acceptance of Site Plan for Mechanic Street Realty Trust, Assessor's Map 24, Lot 101, zoned CBD-G, located at 9-11 Mechanic Street. (Proposal is to construct an approximately 8,750 square feet, five (5) story mixed-use building, with commercial space on the first floor.) *(SITE-2025-0003) *(This item was continued from the February 24, 2026 Planning Board Meeting)*

4. **NEW BUSINESS**

A. Consideration and acceptance of a Conditional Use Permit for Public Service of New Hampshire, Assessor's Map 24, Lot 132, zoned RM-U, located at Cocheco Street. (Proposal is for an expansion to the Eversource Substation involving installation of temporary electric infrastructure resulting in 8 s.f. of permanent wetland impacts, 1,618 s.f. of temporary wetland impacts, 20 s.f. of permanent wetland buffer impacts and 1,615 s.f. of temporary wetland buffer impacts.) *(COND-2026-0011)

B. Consideration and acceptance of a Conditional Use Permit for Equinox Properties, LLC, Assessor's Map 24, Lot 34, zoned CBD-R, located at 24 Winter Street. (Proposal requests relief from the minimum lot coverage of 40% to construct a four-unit townhouse.) *(COND-2026-0005)

C. Consideration and acceptance of a Conditional Use Permit for Equinox Properties, LLC, Assessor's Map 24, Lot 34, zoned CBD-R, located at 24 Winter Street. (Proposal requests relief from the 8-15' front build-to requirement to construct a four-unit townhouse.) *(COND-2026-0012)

D. Consideration and acceptance of a Conditional Use Permit for Equinox Properties, LLC, Assessor's Map 24, Lot 34, zoned CBD-R, located at 24 Winter Street. (Proposal requests relief from the required 10' side setback to construct a four-unit townhouse.) *(COND-2026-0013)

E. Consideration and acceptance of a Conditional Use Permit for Equinox Properties, LLC, Assessor's Map 24, Lot 34, zoned CBD-R, located at 24 Winter Street. (Proposal requests relief from the required 15' rear setback to construct a four-unit townhouse.) *(COND-2026-0014)

F. Consideration and acceptance of a Transfer of Development Rights for Corey Mackoul, Assessor's Map 17, lot 38, zoned R-12, located at 89 Stark Avenue. (Proposal is to request two (2) units through TDR for a total of four (4) units.) *(TRAN-2026-0003)

G. Consideration and acceptance of a Conditional Use Permit for Lafrance Bowden Hospitality II, LLC, Assessor's Map 17, Lot 76, zoned G, located at 47 Central Avenue. (Proposal is to allow a hotel use (or a lodging use exceeding 12 rooms) in the Gateway District.) *(COND-2026-0015)

H. Consideration and acceptance of a Conditional Use Permit for Lafrance Bowden Hospitality II, LLC, Assessor's Map 17, Lot 76, zoned G, located at 47 Central Avenue. (Proposal requests relief from the required 60% primary frontage build-out and the primary front built-to line of 5 feet minimum to 20 feet maximum in order to construct a 94-room hotel.) *(COND-2026-0016)

I. Consideration and acceptance of a Conditional Use Permit for Lafrance Bowden Hospitality II, LLC, Assessor's Map 17, Lot 76, zoned G, located at 47 Central Avenue. (Proposal requests relief from the required 60% secondary frontage build-out requirement to construct a 94-room hotel.) *(COND-2026-0017)

J. Consideration and acceptance of Conditional Use Permit for Lafrance Bowden Hospitality II, LLC, Assessor's Map 17, Lot 76, zoned G, located at 47 Central Avenue. (Proposal requests relief from the Gateway District streetscape standards to construct a 94-room hotel.) *(COND-2026-0018)

K. Consideration and acceptance of a Site Plan for Lafrance Bowden Hospitality II, LLC, Assessor's Map 17, Lot 76, zoned G, located at 47 Central Avenue. (Proposal is to construct a four-story, 50,120± s.f., 94-room hotel with associated patios, landscaping, parking, and utilities.) *(SITE-2026-0001)

5. STAFF COMMENT

6. MEMBER COMMENTS

7. ADJOURNMENT

*Indicates that if the application is accepted for discussion, the public hearing will be held the same evening. Note that some hearings will be continued from one meeting to another and some may be postponed. Since this is only a partial description of the proposal and may change, persons with questions or wishing to see the plans are invited to visit the Planning Office, Monday through Thursday from 8:30 am to 5:30 pm and Friday 8:30 am to 4:00 pm or email Dover-Planning@dover.nh.gov. You may also view materials at www.dover.nh.gov. Find us on Facebook at https://www.facebook.com/DoverNHPlanning. The public is encouraged to leave comments in advance by emailing Dover-Planning@dover.nh.gov, or mailing written comments to Planning Board, Dover City Hall, 288 Central Ave., Dover, NH 03820. Messages must be received no later than 4 p.m. the day of the meeting and should identify the name and Dover address of the person leaving the message or providing the comment.

CITY OF DOVER

DOVER PLANNING BOARD – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers, City Hall, 288 Central Ave, Dover, NH.
Meeting Date:	**Tuesday, March 10, 2026**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Doug Glennon (Vice Chair), Kyle Pimental, Ken Mavrogeorge, Tom Clark, Devon Dunn, Tyler Allen (Alternate), Eric Salovitch (Alternate), April Richer (Councilor)
Members Not Present (excused): Jeff Sanborn, George DeBoer, Melina Gambino (Alternate)
Staff Present: Donna Benton, Planning Director

G. Cruikshank (Chair) called the meeting to order at 7:00pm, noted that Eric Salovitch would be sitting for George DeBoer and Tyler Allen is sitting for Jeff Sanborn.

1. CITIZENS' FORUM

Citizens Forum Open
Hilary Hamer, 91 Court St informed the board and public what she has learned about the legal process for abutters aggrieved of a Planning Board decision.
Citizens Forum Closed

2. APPROVAL OF THE PRIOR MINUTES

- February 24, 2026 Regular Meeting Minutes

Motion: T. Clark moved to approve the regular meeting minutes of February 24, 2026 as submitted. Seconded by: E. Salovitch. Vote: U/A

3. OLD BUSINESS

4. NEW BUSINESS

A. Consideration and acceptance of Transfer of Development Rights for 6 Brick Road, LLC, Assessor's Map 28, Lot 9-C, zoned O/Gateway, located at 1-24 Jefferson Drive. (Proposal is to purchase four (4) residential units through TDR.) *(TRAN-2025-0008)

D. Benton explained that the Applicant is proposing to purchase up to four residential units through TDR, for a project total of six residential units. There are 24 existing townhomes on the subject parcel and the existing density and layout on site were granted by two Variances in 2011.

In mixed-use or multi-family districts, the TDR base density is derived from the underlying zoning. Prior to the lot line adjustment onsite, (LOTA-2023-0010), the site's base density was established at 24 units. The TDR calculation was therefore applied to the additional 8,000 square feet of property to determine any increase in base density. As this area is located entirely within the Gateway District, a mixed-use and multi-family district, the underlying density standard of 4,000 square feet per residential unit was used. Based on this calculation, the base density increased by two units, requiring the applicant to purchase the remaining four units.

Review by the Technical Review Committee was not required for the TDR proposal, but would be required for Site Review.

Bob Stowell, TriTech Engineer represented the application and explained the original, existing project, the zones of the project, the proposal to add six more units to the project, and the TDR request before the board tonight for the extra units. If approved for the units, the project will go before the TRC, and a site plan will come back before the board.
He described the neighborhood and why these units will fit in.

Mr. Stowell addressed board comments relating to drainage and utilities, snow storage, size of the parcel and relation to the variance granted in 2011 for the original units.

DRAFT

The board and staff discussed whether the original ZBA approval for units is in conflict with the request for TDR. Staff noted because of the lot line adjustment and the added 8,000 sq ft, the mixed zoning and the TDR mechanism for handling density requests, this seems the correct method of process. A legal opinion can can be provided if necessary.

Motion: D. Glennon moved to accept the application and declared no regional impact. Seconded by: D. Dunn. Vote: 8-1 with Clark opposed

Public hearing opened.
No one spoke
Public hearing closed.

The Chair gave comments about the project noting initially it looked like a great location for the project, but after having looked at the site in person, it looks very tight to fit it in. The traffic and parking are concerning as well.
E. Salovitch expressed concerns about the project fitting on site, re-engineering of the drainage and lack of green space for the residents.
K. Pimental would like to continue the item until Counsel can review the matter and give a recommendation whether the request reverses the intent of the ZBA approval. He would like to see those original findings of fact.
T. Allen would be in favor of continuing the item.

Motion: K. Pimental moved to continue the item to the April 14th meeting at 7pm in this room in order to receive Counsel's opinion regarding whether it's legal to request the TDR for more units after the 2011 ZBA approvals for the original units and to gather and provide the findings of fact from that ZBA approval. Seconded by: D. Dunn. Vote: All in favor

B. Consideration and acceptance of a Site Review for 5 Sherman Street, LLC, Assessor's Map 19, Lot 8, zoned R-12, located at 103 Court Street. (Proposal is to maintain an existing single-family dwelling and construct four (4) new single-family homes for a total of five (5) dwelling units with two (2) of the new single-family homes size-restricted to 1,400 square feet each.) *(SITE-2024-0012) (*This item was continued from the January 27, 2026 Planning Board meeting.)**

D. Benton explained that the Applicant is proposing to maintain an existing single-family dwelling and construct four new single-family homes for a total of five dwelling units.

The Planning Board last heard and tabled this item at its January 28, 2025 regular meeting. At that same meeting, the Board conditionally approved the related TDR application (TRAN-2024-0011) for the purchase of up to two additional units, resulting in a total potential development of up to five residential units.

That TDR endorsement was appealed to the Housing Appeals Board and the Housing Appeals Board affirmed the Planning Board's decision, which is currently on appeal to the NH Supreme Court. The Planning Board has received a request from an abutter to defer action on this proposal based on the pending Supreme court case (No. 2025-0686) which is a second appeal of the TDR conditional approval with the first being HAB. However, review of a site plan application is permitted and required under State law and the Code of the City of Dover and the Supreme Court did not issue a stay. The Planning Board retains jurisdiction to review and act on applications before the Board and if this site plan is heard, the appellant would have another opportunity to appeal.

As a reminder, all land use decisions subject to an appeal right (and appeal period), the applicant's decision to take any actions in reliance on the Planning Board's decision (including but not limited to incurring any permitting, design, construction, or any other costs) prior to the final resolution of any appeal (or expiration of any applicable appeal period) is at the applicant's own/sole risk of a subsequent unfavorable appeal decision reversing or vacating the Planning Board's decision in whole or in part.

In regards to the site plan application on tonight's agenda, the Technical Review Committee reviewed the application at their November 13, 2025 meeting. Part of the TRC discussion and review focused on updated application materials reflecting the revised site plan proposal, including a traffic impact memo, condominium association documents, water and sewer demand, and stormwater analysis.

Two waivers are being proposed as part of this project related to the requirements for a drive aisle width of 22'-24', where an aisle width of 20' is being proposed. The City typically likes to see less impervious area if possible and based on this design and trying to provide as much distance to the abutting property, staff was comfortable with the waiver request.

Bob Stowell, TriTech Engineering represented the application and explained the steps of the process the project has been through thus far and noted the technical aspects have all been worked out.

Attorney John Bosen addressed points of opposition which have been raised along with the legal process underway.

Motion: D. Dunn moved to accept the application and declared no regional impact. Seconded by: K. Pimental. Vote: U/A

Public hearing opened.
Hilary Hamer, 91 Court St, abutter, addressed concerns about board member impartiality specifically requesting Chair Cruikshank and K. Mavrogeorge recuse themselves from this item to protect her due process rights.
She noted the points of the item before the Supreme Court for review and claimed the applicant has no vested interest while the item is under litigation. She further disagreed with site plan/ subdivision language and vehemently believes the 30-foot buffer is required. She gave explanations for these concerns.

Merlin Mason, 91 Court St, abutter is opposed to the project as it doesn't meet the City's ordinance for TDR in relation to the 30-foot no-cut buffer. He cited examples of projects to support his concerns.

Dorna Hamer, 18 Tuttle Ln focused on the safety hazard this project presents for 103 Court St and the community. She addressed parking, grading, bioretention feature and the safety concerns of all.

Email received from Kim Leshinski, address not given, wrote in opposition to the site plan stating that it does not align with the needs and wants of the Dover community.

Emails received from Hilary Hamer, 91 Court St.

Email received from Keith and Dorna Hamer, 18 Tuttle Ln.,
Public hearing closed.

The Chair believed she would be objective in the matter, but was willing to step aside if the board wished.
K. Mavrogeorge presented the same option.
Board members discussed the matter.

The board members believed they would be impartial and preferred they stay on to hear the item.

The applicant addressed public comment:

- Bioretention area
- Storm water

Staff addressed public comment:

- Buffer is not required as the application is not a subdivision
- Staff is following the TDR ordinance

Board comments and questions addressed by staff and the applicant:
E. Salovitch- asked about condo docs/ HOA docs, detention pond dimensions and depths, driveway/ aisle way widths, lot coverage
K. Pimental- asked for clarification of what is in front of the Supreme Court
D. Glennon- asked about impervious surface review
T. Clark- asked for waiver clarifications
K. Mavrogeorge- driveway/ stormwater/ rain garden location adjustments, above/ underground treatment system, common vs individual recreation space, reasoning for not tearing down the existing home (addressed by owner Robert Baldwin), the existing vegetative state and how the landscape plan provided improves the vegetative buffer, what vegetation is included in the landscape plan, overall reasoning for decisions for the proposed plan presented tonight.

STAFF RECOMMENDATION - Waivers/Relief:
§153-21 of the Site Plan Review Regulations state the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning staff believes the applicant's rationale for the waivers meets criterion (2) and waiving such standards and requirements is not contrary to the spirit or intent of the ordinance as the applicant is looking to decrease impervious surface and maintain as much distance to the abutter.

The Planning Department recommends that the Planning Board make the necessary and supporting findings of fact, and vote to grant the waivers with the following subsequent condition:

Subsequent Condition to be Met Prior to the Signing of the Plans:

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waivers:
   §153-14.D.6(a), required parking lot design standard of 22' aisle width
   §153-14.D.6(b), required two-way accessway width of 24'

Motion: K. Pimental moved to grant the waiver requests with the subsequent condition set by staff as it meets criteria for relief. Seconded by: D. Dunn.

K. Pimental noted T. Clark raised a good point with the waivers, but in this instance the request for narrower driveway is not directly tied to the increased density. It does make the project better.

Vote: 6-2 with E. Salovitch and T. Clark opposed and A. Richer abstaining.

STAFF RECOMMENDATION- Site Plan:
Chapter 153-13 outlines Site development plan requirements. This plan meets those standards outlined. Therefore, the Planning Department recommends that the Planning Board make the necessary and supporting findings of fact, and vote to approve the Site Plan with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:

1. All conditions associated with TRAN-2024-0011 have been met (save for this site plan approval);
2. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   2.1. Permit File #SITE-2024-0012;
   2.2. Owner's signatures;
   2.3. Professional stamps and signatures;
   2.4. Indicate driveway off Court Street to be removed so plan sheets match
3. Submit condominium association documents to the Planning Department for review, ensuring that provisions for maintenance of the stormwater system, maintenance of landscaping and snow storage, roadway, sidewalks, roof, and limited common areas are included, along with reserve and surety calculation;
   3.1. Condominium association documents should note that the stop sign, and any other development signage would be privately owned and maintained by the association;
   3.2. Condominium association costs should reflect a comparison between future fund values and present-value costs.
   3.3. Condominium association documents should include the size restriction for the TDR units.

Subsequent Conditions to Be Met Prior to Construction:

4. A preconstruction meeting must be held with City staff;
5. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;
6. The applicant shall provide documentation demonstrating that utility costs associated with work within the public right-of-way, to be installed as part of the City's Court Street Reconstruction project, have been received from the City.
7. Supreme Court renders a decision on Case No.2025-0686

Subsequent Condition to Be Met Prior to Building Permit:

8. Payment of Water and Sewer Investment Fees, if applicable, at time of request of service;

Subsequent Conditions to Be Met Prior to Occupancy:

9. Issuance of Certificate of Occupancy;
10. Surety or other form of security acceptable to the City is provided for any unfinished work;
11. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.
12. Design Engineer meet with the condominium association to review maintenance responsibilities

Motion: K. Pimental moved to approve the Site Plan with the subsequent conditions set by staff and found the site plan review regulations of the City code have been met. Seconded by K. Mavrogeorge. Vote: 6-2 with E.Salovitch and T.Clark opposed and A. Richer abstaining.

C. Consideration and acceptance of a Conditional Use Permit for TND Engineering (Owners: Ahmed-Karim Revocable Trust, Ahmed R. Ahmed & Karim Vida Trustees) Assessor's Map 7, Lot 8, zoned R-20, located at 11 Boston Harbor Road. (Proposal is to reconstruct an existing foundation and reconstruct the existing driveway to a pervious surface resulting in approximately 2,000 square feet of permanent impacts to the Conservation District.) *(COND-2026-0004)

D. Benton explained that the Applicant is proposing to demolish a portion of the existing two-family structure in order to reconstruct a failing foundation and rebuild the structure as a single-family dwelling within the existing footprint. The proposed work will result in approximately 2,000 square feet of permanent impacts within the Conservation District.

The Conservation Commission reviewed the application and endorsed the proposal as presented on February 9, 2026.

E. Salovitch recused himself from the item.

Rick Chelman, TND Engineering represented the application and explained the request noting the impacts are already existing due to the location of the structure.

Motion: D. Dunn moved to accept the application and declared no regional impact. Seconded by: T. Allen. Vote: U/A

Public hearing opened.
Olivia Ozkurt, 13 Boston Harbor Rd, abutter expressed concerns about using the applicant proposing to utilize the private driveway as an access point which is in dispute. She itemized the safety concerns that have occurred with unknown drivers entering their driveway and at times their home. They were surprised to see the plan showing access to the subject property through their driveway and have not agreed to this. Their attorney is working to figure out what easements and rights exist between the properties.

Email received from Melissa and Halil Ozkurt, 13 Boston Harbor Rd., expressing concern about the driveway access for 13 Boston Harbor Rd. which currently shares access with 11 Boston Harbor Rd.
Public hearing closed.

Staff addressed public comment noting they hope the issue gets resolved potentially through a lot line adjustment, but what is before the board tonight is the conservation impacts and that's what the board should address.

STAFF RECOMMENDATION – Conditional Use Permit, Conservation District
The Conservation District ordinance §170.27.C provides for Conditional Use Permits to allow impacts to the Conservation District if standards related to demonstration that the use is essential to the productive use of land, a soil erosion and sedimentation control plan is submitted, state and federal approvals have been applied for, and a written review by the Conservation Commission has been sought.

Planning staff finds that the applicant has met all required criteria under §170.27.C. The proposal modifies an existing structure within the current footprint and will reduce impervious area by reconstructing the driveway with a pervious surface. Filter socks are included in the erosion and sedimentation control plan and will remain in place until the work is complete. NHDES permitting has been applied for, and the Conservation Commission has reviewed and endorsed the application.

The Planning Department recommends the Planning Board make findings, and vote to approve the application with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:

1. Submit a final site plan to the Planning Department that includes:
   1.1. Permit File #COND-2026-0004;
   1.2. Owner's signature;
2. Submit a copy of approved NHDES permitting when received.

Motion: D. Dunn moved to approve the Conditional Use Permit with the subsequent conditions. Seconded by T. Allen. Vote: U/A

D. Consideration and acceptance of a Conditional Use Permit for Singh Raghbir, Assessor's Map H, Lots 14-D and 14-D-1, zoned R-20, located at 8 and 4 Zeland Drive. (Proposal is to demolish two (2) single-family homes and rebuild with approximately 3,559 square feet of permanent impacts to the Conservation District.) *(COND-2025-0024)

D. Benton explained that the Applicant is proposing to demolish the two existing homes and reconfigure and rebuild two new single-family homes creating approximately 3,559 square feet of permanent impacts to the Conservation District. The proposed reconstructed homes are being relocated further from the Bellamy River and removed from the NHDES 50' Shoreland Buffer.

The proposed units are part of a previously approved five-lot TDR subdivision. The two single-family homes under consideration were existing at the time of the original approval, while the three approved units have since been constructed.

The Conservation Commission reviewed the application and conditionally endorsed the proposal as presented on November 10, 2025.

John Diamond represented the application and explained the request to demolish two houses, build larger houses, but have less impact than the original homes. He noted NH DES approvals were received today.

Motion: T. Allen moved to accept the application and declared no regional impact. Seconded by: E. Salovitch. Vote: U/A

Public hearing opened.
No one spoke
Public hearing closed.

STAFF RECOMMENDATION – Conditional Use Permit, Conservation District
The Conservation District ordinance §170.27.C provides for Conditional Use Permits to allow impacts to the Conservation District if standards related to demonstration that the use is essential to the productive use of land, a soil erosion and sedimentation control plan is submitted, state and federal approvals have been applied for, and a written review by the Conservation Commission has been sought.

No wetland impacts are proposed and the proposed impacts to the Conservation District will be a reduction from the existing homes. The applicant is also proposing pervious pavers for the driveways and walkways and a soil erosion and sedimentation control plan has been submitted for review. An amendment to the applicant's previously approved NHDES Shoreland Permit has also been submitted for review and recently approved. The applicant has also received a conditional endorsement by the Conservation Commission.

The Planning Department recommends the Planning Board make findings, and vote to approve the application with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:

1. Submit a final site plan to the Planning Department that includes:
   1.1. Permit File #COND-2025-0024;
   1.2. Owner's signature;
2. Submit a copy of approved NHDES permitting when received.
3. Submit revised Homeowners Association (HOA) documents, or an addendum, that includes language outlining best practices for the maintenance of pervious pavers.

Motion: D. Dunn moved to approve the Conditional Use Permit with the subsequent conditions. Seconded by K. Mavrogeorge. Vote: U/A

5. STAFF COMMENT

- March 24th agenda visually looks hefty-pushing off site and subdivision amendments to April.
- The TDR subcommittee has been reviewing and wordsmithing proposed amendments. Should be seeing something in April or possibly May.
- An inspection regarding the buffer for a TDR project on 566 Sixth St. will occur next week.
- No prior TRCs since last Planning Board meeting.
- Transportation Chapter award of bid should occur on March 24th by the City Council.
- Upcoming TRCs:
  - On March 12th: Site Plan proposal to construct a mixed-use building at 28 Dover Point Rd. to include three commercial units on the first floor and four residential units on the second floor.
  - On March 19th: Review of conditionally approved TDR plan for 36 Forest St. This plan involves conversion of the existing single-family dwelling into a two-family dwelling and construction of a new two-family dwelling following TDR approval for the purchase of two units.

6. MEMBER COMMENTS

- Transportation Chapter Steering Committee member appointments:
  - City Council member as appointed by the Mayor
  - Devon Dunn to represent Planning Board
  - Kean McDermott to represent TAC
  - Bryant Hardwick
  - Mark Santoski
  - Tucker Adams
  - Otis Perry
    - K. Pimental noted due to a conflict of interest he cannot participate in or discuss the matter
- Planning Board Chair signed the following plans:
  - Signed Minor Subdivision for 80 Industrial Park.
  - Signed Minor Subdivision for 19 Watson Road.

7. ADJOURNMENT

Motion: K. Mavrogeorge moved to adjourn at 9:10 pm. Seconded by D. Dunn. Vote: U/A

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CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0007

Application Type:	Conditional Use Permit
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to construct a mixed-use building with an accessible residential unit on the ground floor where a non-residential use on the ground floor is required. *(This item was continued from the February 24, 2026 Planning Board Meeting)*

AGENDA ITEM #: 3-A

FILE: COND-2026-0007

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

APPLICANT/OWNER: Mechanic Street Realty Trust

LOCATION: 9-11 Mechanic Street (Assessor's Map 24, Lot 101)

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District General Sub-District (CBD-G)

EXISTING LAND USE: Residential (Currently Vacant)

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

WAIVERS REQUESTED: Relief needed from §153-13A(12), required landscape plan that is signed by an LLA and §153-14D(6)(b), required two-way accessway with a minimum width of 24 feet.

PERMITS REQUIRED: Two City of Dover Conditional Use Permits (CUP) to allow for ground floor residential and less than the required lot coverage.

TECHNICAL REVIEW COMMITTEE: Reviewed on April 2, 2025, November 6, 2025, and January 22, 2026.

CONSERVATION COMMISSION: N/A

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters prior to the February 24, 2026 meeting.

ATTACHMENTS: Application materials including site plan.

Summary of Request and Background

The applicant is proposing a mixed-use project consisting of two commercial units and nine residential units. The proposal includes demolishing the existing dilapidated structures on site to construct the approximately 8,750 square foot, five-story building.

The applicant is proposing two commercial units and one residential unit on the ground floor, where residential uses on the ground floor are not permitted in the Central Business District General Sub-District (CBD-G).

The Technical Review Committee reviewed the Site Plan application at their April 2, 2025, November 6, 2025, and January 22, 2026 meetings. At the most recent TRC meeting, the applicant pledged to restrict the ground floor residential unit to be built to be accessible and to be restricted to HUD Fair Market rental rates in perpetuity.

Following Planning Board review at the Feb. 24, 2026 meeting and comments related to the ground floor layout, the applicant has since provided a revised layout showing the ground floor unit away from the trash receptacles and the unit restricted to HUD Fair Market rental rates moved to an upper floor.

Within the CBD-G District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including permitted residential density, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations – Non-Environmental CUP Criteria

Chapter 170-19.B.1 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0007

Application Type:	Conditional Use Permit
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.1. The front-facing units are proposed as commercial spaces that comply with the underlying zoning requirements, including the requirement that no less than 80% of the facade consist of windows, and their inclusion is consistent with the intent of a mixed-use neighborhood.

Consistency with Land Use Regulations – CBD CUP Criteria
Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Central Business District Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.
(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.
(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

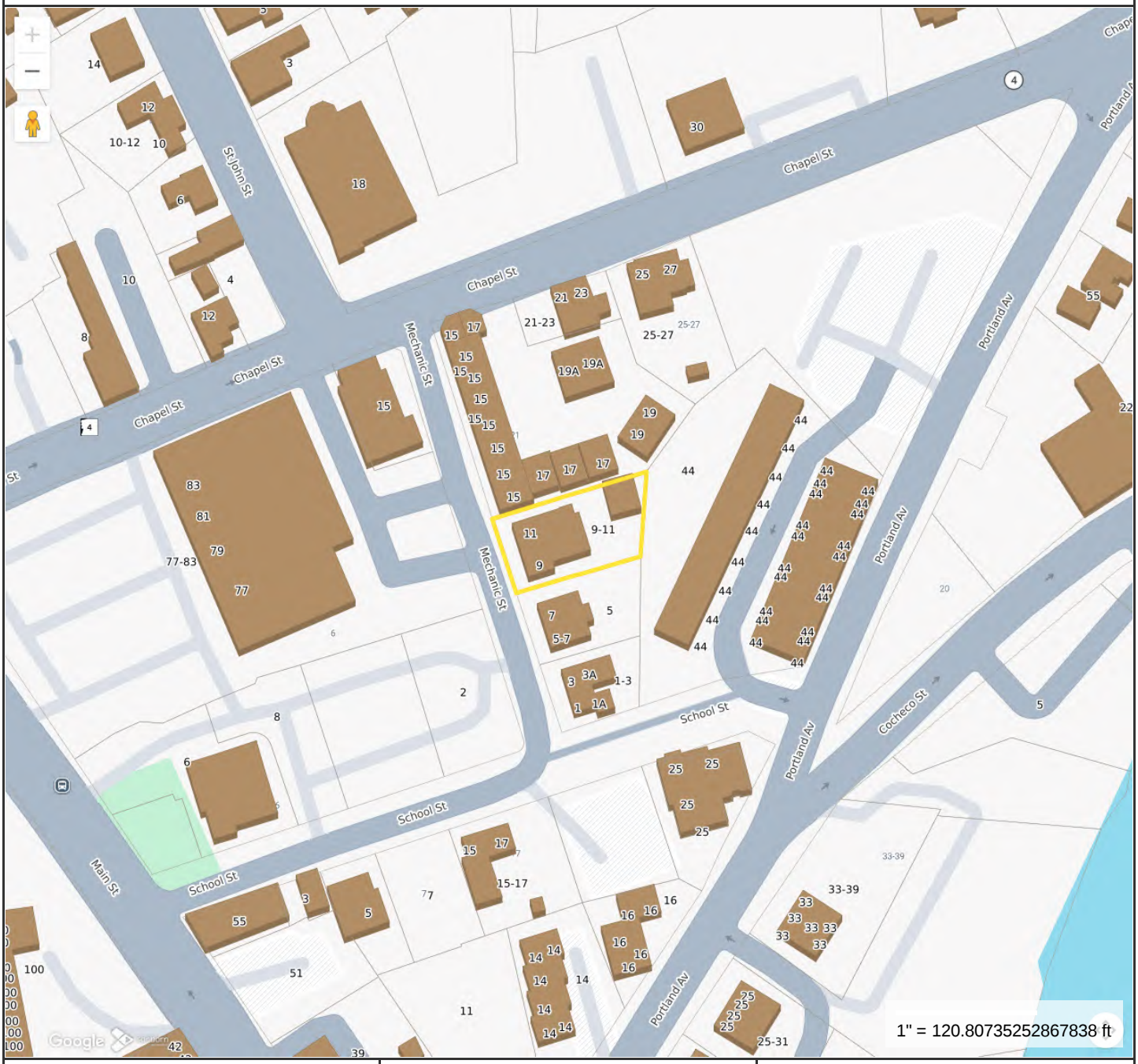
Staff feels the applicant has met said criteria, in particular the compatibility with the surrounding neighborhood. Additionally, the applicant has revised their original floor plan and residential layout to meet Planning Board comments and recommendations.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board re-open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to Be Met Prior to Issuance of a Conditional Use Permit:

1. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD which shall include the HUD Fair Market restricted rental rate for the ground floor unit.
2. A deed restriction shall be recorded at SCRD indicating the HUD Fair Market restricted rental rate for at least one unit in the building at all times.
3. Conditional Use Permit (COND-2026-0008) be conditionally approved.
4. Site Plan (SITE-2025-0003) be conditionally approved.

COND-2026-0007 9-11 MECHANIC STREET



Property Information

Location	9 MECHANIC ST
Owner	LEGARE BENJAMIN T TRUSTEE
Land Use	111R
Zoning Code	CBD-G
Property Id	24101-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0007
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/06/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: To allow one affordable accessible residential unit on the ground floor with less than 20% commercial space in the building.

Parcel:	**Address:**	**Zone:**
24101-000000 Main	9-11 Mechanic St Main Dover, 03820	CBD-G(Central Business District - Genera

Plan Preparer
Benjamin Osgood
130 Main Street Suite 202
Suite 202
salem, NH 03079
Home: (978) 435-1324
Business: (978) 208-1768
Mobile: (978) 435-1224

Owner
Benjamin Lagere
23A Middle Street
Newburyport, MA 01950
Mobile: (603) 490-5085

Permit Custom Fields

Select Permit Type	Central Business District - General	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	CBD-G	Work	Allow one affordable accessible residential unit on ground floor, allow less than 20% commercial space, allow less than the minimum lot coverage on the property.	permitstatefed	None

Attachment File Name	Added On	Added By	Attachment Group	Notes
Permit Snapshot Report.pdf	02/06/2026 14:55	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee		Fee Amount	Amount Paid
INV-2026000538	Planning General Application Fee		$200.00	$0.00
		Total for Invoice INV-2026000538	$200.00	$0.00
NOT INVOICED	Planning Legal Notice		$120.00	$0.00
		Total for Invoice NOT INVOICED	$120.00	$0.00
		Grand Total for Permit	**$320.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			02/11/2026 14:24
Confirm application complete v.1	Generic Action		02/11/2026 14:24
~~Conditional Use Review v.1~~	Receive Submittal		02/11/2026 14:24
Planning Board v.1		02/11/2026 14:25	
Planning Board Agenda v.1	Task	02/11/2026 14:25	02/11/2026 14:25
Invoice for Notices v.1	Task	02/11/2026 14:25	
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		

PERMIT SNAPSHOT REPORT (COND-2026-0007)

Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Benjamin T. Legare, Trustee Mechanic Street Realty Trust Telephone # 603-490-5085

Address of Applicant: 23A Middle Street, Newburyport, MA 01950

E-Mail Address: benjamin.lagare@gmail.com

Name of Property Owner (if different from applicant): same Telephone #_____

Address of Property Owner: same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # 101

Address of Property: 9-11 Mechanic Street, Dover, NH

Zoning District(s) CBD Subdistrict G Overlay District(s) _____

Existing Use of Property: Multi Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Allow one affordable accessible residential unit on the ground floor

Allow less than 20% commercial space in the building

Allow less than the minimum lot coverage on the property

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: No State or Federal permits

Site Plan Review in process

Name of Professional That Prepared Plans: Benjamin C. Osgood, Jr., PE Ranger Engineering Group, Inc

Address 130 Main Street, Suite 202, Salem, NH 03079 Telephone #: 978-435-1324

Professional License #: NH 12080 E-mail address: Bosgood@Rangereng.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: 9-11 Mechanic Street Realty Trust Date: 2-3-2026
By: Robert A. Ciampitti, Jr., Esq.
Attorney In Fact for Trust

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: 9-11 Mechanic Street Realty Trust Date: 2-3-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-2026
9-11 Mechanic Street Realty Trust
By: Robert A. Ciampitti, Jr., Esq.
Attorney In Fact for Trust

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan Review Fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____

2. TOTAL IMPERVIOUS PAVED AREA (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE (A) = $_____

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $8.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $8.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $100.00 x # _____ applications = $_____

SUBTOTAL NOTICE FEE (B & C) = $_____

TOTAL INVOICE AMOUNT (A, B & C) = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The balance due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
03012-000000	7 SCHOOL ST	79 SCHOOL ST LLC		3 QUILL LN SUITE 107	BARRINGTON	NH	03825
03011-000000	15 SCHOOL ST	CURLEY KYLE		64 RUNNING SPRINGS RD	GORHAM	ME	04038
24097-000000	21 CHAPEL ST	VACCARO RALPH D & PRANEE &	VACCARO DAVID M	183 GREEN ST	SOMERSWORTH	NH	03878-2213
24102-000000	5 MECHANIC ST	BARROWS JEREMY		5 MECHANIC ST	DOVER	NH	03820-3507
03009-000000	25 SCHOOL ST	25 SCHOOL ST CONDO ASSOCIATION	C/O RANDY JONES	34 GARFIELD DR	PORTSMOUTH	NH	03801
24103-000000	1 MECHANIC ST	CORBETT ZACHARY J		3 MECHANIC ST	DOVER	NH	03820
03025-000000	8 SCHOOL ST	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
24095-000000	PORTLAND AV	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
24105-A00000	20 COCHECO ST	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
03010-000000	SCHOOL ST	LEGARE BENJAMIN T TRUSTEE	3 SCHOOL STREET REALTY TRUST	3 COLBY FARM LN	NEWBURYPORT	MA	01950
03030-000000	15 CHAPEL ST	SAINT GEORGE MARONITE CATHOLIC CHURCH		15 CHAPEL STREET	DOVER	NH	03821-2210
03027-000000	2 MECHANIC ST	CITY OF DOVER		288 CENTRAL AV	DOVER	NH	03820
24056-000000	18 CHAPEL ST	DOVER HOUSING AUTHORITY		62 WHITTIER STREET	DOVER	NH	03820
24095-000LS1	PORTLAND AV	44 PORTLAND AVE LLC		42 J DOVER POINT RD	DOVER	NH	03820
24100-000000	15 MECHANIC ST	MECHAPEL LLC		3 QUILL LANE STE 107	BARRINGTON	NH	03825
03031-000000	77 MAIN ST	BIG J REALTY INC		161 CLEMENT ROAD	ROLLINSFORD	NH	03869
24096-000000	25 CHAPEL ST	RICHARDS ZACHARY MARK		25-27 CHAPEL ST	DOVER	NH	03820
24104-000000	44 PORTLAND AV	44 PORTLAND AVE LLC		3 QUILL LANE STE 107	BARRINGTON	NH	03825
03026-000000	SCHOOL ST	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
24101-000000	9 MECHANIC ST	LEGARE BENJAMIN T TRUSTEE	9-11 MECHANIC STREET REALTY TRUST	23A MIDDLE ST	NEWBURYPORT	MA	01950
		PE RANGER ENGINEERING GROUP, INC	BENJAMIN C OSGOOD JR	130 MAIN STREET, SUITE	SALEM	NH	03079

SITE: 2025-0003
PB: 2-24-2026
Locus: 9-11 Mechanic Street

CONDITIONAL USE PERMIT APPLICATION
NARRATIVE RESPONSE TO CRITERIA

1. CONDITIONAL USE PERMIT – REQUEST FOR RELIEF FROM STANDARDS

- **RSA 674:21, II) - §170-19B (1)**

a. That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

RESPONSE: The proposed project is located entirely on private property and will not alter or affect the definition or use of adjacent rights-of-way.

b. That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

RESPONSE: The project will utilize the existing driveway for vehicle access and will not alter public streets or pedestrian areas. No new traffic circulation patterns are proposed.

c. That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

RESPONSE: The project does not involve any redesign of public streets. The proposed structure will be constructed in compliance with all applicable building and safety codes, ensuring both accessibility and a safe environment.

d. That architecture and landscape design shall grow from local climate, topography, history, and building practice.

RESPONSE: While there is very limited space available for site landscaping, the landscaping that is planned for the project site will remain consistent with the existing Mechanic Street setting and architectural design and will seek to complement the surrounding mixed use character and local building practices.

e. That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

RESPONSE: The planned building will incorporate energy-efficient construction methods and materials appropriate for the local climate. The design will emphasize natural light, efficient window placement, and an optimized floor plan to enhance comfort and reduce energy use throughout the year.

f. That civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

RESPONSE: (Not Applicable) as the proposed project consists of a mixed use (residential and ground floor commercial) structure and does not include or impact on any civic or public gathering facilities.

That said, the project does include and contemplate the use of a bench and street landscaping, as well as a wall mural installation along the driveway access building wall (via a Dover-local artist RFP), which has a sightline along the pedestrian right of way along Mechanic Street.

g. That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

RESPONSE: (Not Applicable) as the proposed project consists of a mixed use (residential and ground floor commercial) structure and does not include or impact on any civic or public gathering facilities.

h. That the preservation and renewal of historic buildings shall be facilitated.

RESPONSE: The proposed construction will not alter or impact any existing or historic structures on the site or adjacent properties.

i. That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

RESPONSE: The proposed project will be harmonious with the surrounding area, as it aligns with existing mixed-use development patterns of the CBD-G district (and walkable downtown), and supports the orderly evolution of this downtown neighborhood.

j. That if the relief is granted, the surrounding neighborhood is not negatively impacted.

RESPONSE: The surrounding mixed-use neighborhood will not be negatively impacted. Driveway access to the rear of the building will remain unchanged and will utilize a single driveway access to the rear of the building from Mechanic Street. The proposed structure shall remain consistent with the character, scale, and use of existing mixed-use development in (and around) the CBD-G downtown district.

2. CONDITIONAL USE PERMIT – REQUEST FOR RELIEF FROM STANDARDS

- **RSA 674:21, II) - §170-19B (2)**

a. The requested use shall be compatible with abutting uses and the surrounding neighborhood.

RESPONSE: The requested mixed-use (residential & commercial) is compatible with abutting properties and consistent with the established neighborhood character of surrounding downtown neighborhood along Mechanic Street & Chapel Street.

b. The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

RESPONSE: The proposed single-family dwelling will not generate significant additional traffic or affect pedestrian safety. Access will continue via the existing driveway, and only minimal additional vehicle trips are anticipated.

c. The requested use will not result in objectionable noise or odor which would constitute a nuisance.

RESPONSE:

The requested use (mixed-use residential & commercial) will not result in objectionable noise or odor that would constitute nuisance. The proposed mixed-use is consistent with normal downtown activity levels.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0008

Application Type:	Conditional Use Permit
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to construct a mixed-use building that would have less than the minimum required lot coverage. *(This item was continued from the February 24, 2026 Planning Board Meeting)*

AGENDA ITEM #: 3-B

FILE: COND-2026-0008

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

APPLICANT/OWNER: Mechanic Street Realty Trust

LOCATION: 9-11 Mechanic Street (Assessor's Map 24, Lot 101)

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District General Sub-District (CBD-G)

EXISTING LAND USE: Residential (Currently Vacant)

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

WAIVERS REQUESTED: Relief needed from §153-13A(12), required landscape plan that is signed by an LLA and §153-14D(6)(b), required two-way accessway with a minimum width of 24 feet.

PERMITS REQUIRED: Two City of Dover Conditional Use Permits (CUP) to allow for ground floor residential and less than the required lot coverage.

TECHNICAL REVIEW COMMITTEE: Reviewed on April 2, 2025, November 6, 2025, and January 22, 2026.

CONSERVATION COMMISSION: N/A

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters prior to the February 24, 2026 meeting.

ATTACHMENTS: Application materials including site plan.

Summary of Request and Background

The applicant is proposing a mixed-use project consisting of two commercial units and nine residential units. The proposal includes demolishing the existing dilapidated structures on site to construct the approximately 8,750 square foot, five-story building.

The applicant is proposing a lot coverage of approximately 26% where a minimum of 75% is required.

The Technical Review Committee reviewed the Site Plan application at their April 2, 2025, November 6, 2025, and January 22, 2026 meetings.

Within the CBD-G District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including dimensional regulations, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations – Non-Environmental CUP Criteria

Chapter 170-19.B.1 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.
(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.
(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.
(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.
(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.
(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.
(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.
(h) That the preservation and renewal of historic buildings shall be facilitated.
(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.
(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.1. The proposal complies with all other applicable dimensional zoning requirements and does not affect public spaces, pedestrian safety, or the existing street design. The inclusion of on-site parking, which reduces the area available for structural lot coverage, supports improved traffic flow and safer vehicular access.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0008

Application Type:	Conditional Use Permit
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

Consistency with Land Use Regulations – CBD CUP Criteria
Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Central Business District Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

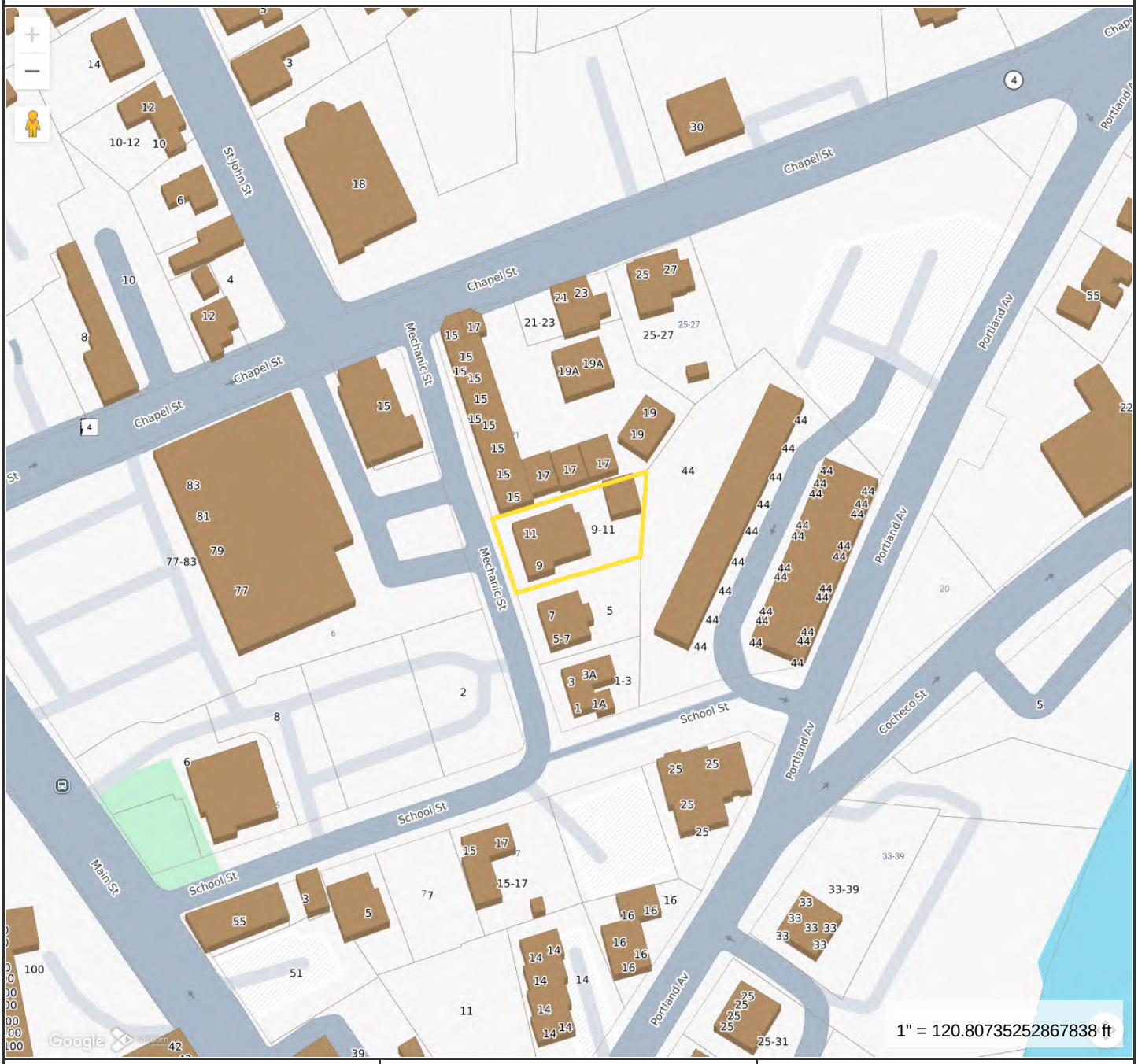
Staff feels the applicant has met said criteria and has considered the general design of the surrounding neighborhood with the building placement and design. Lot coverage is calculated only based on the structures on the property and due to the shape and size constraints of the lot, and the intent to accommodate on-site parking for potential residents, the applicant has proposed a site layout that results in less lot coverage than what is permitted.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board re-open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent condition of approval:

Subsequent Condition to Be Met Prior to Issuance of a Conditional Use Permit:

1. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.
2. Conditional use permit (COND-2026-0007) be conditionally approved.
3. Site plan (SITE-2025-0003) be conditionally approved.

COND-2026-0008 9-11 MECHANIC STREET



Property Information

Location	9 MECHANIC ST
Owner	LEGARE BENJAMIN T TRUSTEE
Land Use	111R
Zoning Code	CBD-G
Property Id	24101-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0008
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/09/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: To allow one affordable accessible residential unit on the ground floor with less than the minimum lot coverage on the property.

Parcel: 24101-000000 Main	**Address:** 9-11 Mechanic St Main Dover, 03820	**Zone:** CBD-G(Central Business District - Genera

Plan Preparer
Benjamin Osgood
130 Main Street Suite 202
Suite 202
salem, NH 03079
Home: (978) 435-1324
Business: (978) 208-1768
Mobile: (978) 435-1224

Owner
Benjamin Lagere
23A Middle Street
Newburyport, MA 01950
Mobile: (603) 490-5085

Permit Custom Fields

Select Permit Type	Central Business District - General	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	CBD-G	Work	To allow one affordable accessible residential unit on the ground floor with less than the minimum lot coverage on the property.	permitstatefed	None

Attachment File Name	Added On	Added By	Attachment Group	Notes
Permit Snapshot Report.pdf	02/09/2026 11:29	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
NOT INVOICED	Planning General Application Fee	$200.00	$0.00
	Total for Invoice NOT INVOICED	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			02/11/2026 14:46
Confirm application complete v.1	Generic Action		02/11/2026 14:46
~~Conditional Use Review v.1~~	Receive Submittal		02/11/2026 14:46
Planning Board v.1		02/11/2026 14:46	
Planning Board Agenda v.1	Task	02/11/2026 14:46	02/11/2026 14:46
Invoice for Notices v.1	Task	02/11/2026 14:46	
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		

Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Benjamin T. Legare, Trustee Mechanic Street Realty Trust Telephone # 603-490-5085

Address of Applicant: 23A Middle Street, Newburyport, MA 01950

E-Mail Address: benjamin.lagare@gmail.com

Name of Property Owner (if different from applicant): same Telephone #_____

Address of Property Owner: same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # 101

Address of Property: 9-11 Mechanic Street, Dover, NH

Zoning District(s) CBD Subdistrict G Overlay District(s) _____

Existing Use of Property: Multi Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Allow one affordable accessible residential unit on the ground floor

Allow less than 20% commercial space in the building

Allow less than the minimum lot coverage on the property

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: No State or Federal permits

Site Plan Review in process

Name of Professional That Prepared Plans: Benjamin C. Osgood, Jr., PE Ranger Engineering Group, Inc

Address 130 Main Street, Suite 202, Salem, NH 03079 Telephone #: 978-435-1324

Professional License #: NH 12080 E-mail address: Bosgood@Rangereng.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: 9-11 Mechanic Street Realty Trust Date: 2-3-2026
By: Robert A. Ciampitti, Jr., Esq.
Attorney In Fact for Trust

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: 9-11 Mechanic Street Realty Trust Date: 2-3-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-2026
9-11 Mechanic Street Realty Trust
By: Robert A. Ciampitti, Jr., Esq.
Attorney In Fact for Trust

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan Review Fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____

2. TOTAL IMPERVIOUS PAVED AREA (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE (A) = $_____

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $8.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $8.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $100.00 x # _____ applications = $_____

SUBTOTAL NOTICE FEE (B & C) = $_____

TOTAL INVOICE AMOUNT (A, B & C) = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The balance due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

SITE: 2025-0003
PB: 2-24-2026
Locus: 9-11 Mechanic Street

CONDITIONAL USE PERMIT APPLICATION
NARRATIVE RESPONSE TO CRITERIA

1. CONDITIONAL USE PERMIT – REQUEST FOR RELIEF FROM STANDARDS

- **RSA 674:21, II) - §170-19B (1)**

a. That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

RESPONSE: The proposed project is located entirely on private property and will not alter or affect the definition or use of adjacent rights-of-way.

b. That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

RESPONSE: The project will utilize the existing driveway for vehicle access and will not alter public streets or pedestrian areas. No new traffic circulation patterns are proposed.

c. That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

RESPONSE: The project does not involve any redesign of public streets. The proposed structure will be constructed in compliance with all applicable building and safety codes, ensuring both accessibility and a safe environment.

d. That architecture and landscape design shall grow from local climate, topography, history, and building practice.

RESPONSE: While there is very limited space available for site landscaping, the landscaping that is planned for the project site will remain consistent with the existing Mechanic Street setting and architectural design and will seek to complement the surrounding mixed use character and local building practices.

e. That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

RESPONSE: The planned building will incorporate energy-efficient construction methods and materials appropriate for the local climate. The design will emphasize natural light, efficient window placement, and an optimized floor plan to enhance comfort and reduce energy use throughout the year.

f. That civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

RESPONSE: (Not Applicable) as the proposed project consists of a mixed use (residential and ground floor commercial) structure and does not include or impact on any civic or public gathering facilities.

That said, the project does include and contemplate the use of a bench and street landscaping, as well as a wall mural installation along the driveway access building wall (via a Dover-local artist RFP), which has a sightline along the pedestrian right of way along Mechanic Street.

g. That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

RESPONSE: (Not Applicable) as the proposed project consists of a mixed use (residential and ground floor commercial) structure and does not include or impact on any civic or public gathering facilities.

h. That the preservation and renewal of historic buildings shall be facilitated.

RESPONSE: The proposed construction will not alter or impact any existing or historic structures on the site or adjacent properties.

i. That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

RESPONSE: The proposed project will be harmonious with the surrounding area, as it aligns with existing mixed-use development patterns of the CBD-G district (and walkable downtown), and supports the orderly evolution of this downtown neighborhood.

j. That if the relief is granted, the surrounding neighborhood is not negatively impacted.

RESPONSE: The surrounding mixed-use neighborhood will not be negatively impacted. Driveway access to the rear of the building will remain unchanged and will utilize a single driveway access to the rear of the building from Mechanic Street. The proposed structure shall remain consistent with the character, scale, and use of existing mixed-use development in (and around) the CBD-G downtown district.

2. CONDITIONAL USE PERMIT – REQUEST FOR RELIEF FROM STANDARDS

- **RSA 674:21, II) - §170-19B (2)**

a. The requested use shall be compatible with abutting uses and the surrounding neighborhood.

RESPONSE: The requested mixed-use (residential & commercial) is compatible with abutting properties and consistent with the established neighborhood character of surrounding downtown neighborhood along Mechanic Street & Chapel Street.

b. The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

RESPONSE: The proposed single-family dwelling will not generate significant additional traffic or affect pedestrian safety. Access will continue via the existing driveway, and only minimal additional vehicle trips are anticipated.

c. The requested use will not result in objectionable noise or odor which would constitute a nuisance.

RESPONSE:

The requested use (mixed-use residential & commercial) will not result in objectionable noise or odor that would constitute nuisance. The proposed mixed-use is consistent with normal downtown activity levels.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2025-0003

Application Type:	Site Review
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

INTENT: Proposal is to construct an approximately 8,750 square foot, five-story mixed-use building with two commercial units and one residential unit on the first floor, and eight residential units on the upper floors. *(This item was continued from the February 24, 2026 Planning Board Meeting)*

AGENDA ITEM #: 3-C

FILE: SITE-2025-0003

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

APPLICANT/OWNER: Mechanic Street Realty Trust

LOCATION: 9-11 Mechanic Street (Assessor's Map 24, Lot 101)

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District General Sub-District (CBD-G)

EXISTING LAND USE: Residential (Currently Vacant)

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

WAIVERS REQUESTED: Relief needed from §153-13A(12), required landscape plan that is signed by an LLA and §153-14D(6)(b), required two-way accessway with a minimum width of 24 feet.

PERMITS REQUIRED: Two City of Dover Conditional Use Permits (CUP) to allow for ground floor residential and less than the required lot coverage.

TECHNICAL REVIEW COMMITTEE: Reviewed on April 2, 2025, November 6, 2025, and January 22, 2026.

CONSERVATION COMMISSION: N/A

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters prior to the February 24, 2026 meeting.

ATTACHMENTS: Application materials including site plan.

Summary of Request and Background
The applicant is proposing a mixed-use project consisting of two commercial units and nine residential units. The proposal includes demolishing the existing dilapidated structures on site to construct the approximately 8,750 square foot, five-story building and eight parking spaces on site.

In addition to the eight on-site parking spaces, on Jan. 28, 2026, City Council approved a license agreement granting the applicant up to twelve parking spaces in the Portland Avenue public parking lot. The agreement was endorsed by the Parking Commission at its Nov. 18, 2025 meeting.

Two waivers are being proposed as part of this project related to the requirement for a landscape plan that is signed by a Licensed Landscape Architect (LLA) and the requirement for a two-way accessway width of 24', where an aisle width of 16' is being proposed.

Following Planning Board consideration at the February 24, 2026 meeting, comments and recommendations were made related to the ground floor layout, conditions of approval, and shared access easement with the abutting property at 5-7 Mechanic St. The applicant has since provided a revised layout showing the ground floor unit away from the trash receptacles and the unit restricted to HUD Fair Market rental rates moved to an upper floor. The applicant has submitted a revised plan set and supplementary materials to address potential conditions of approval, along with a title opinion regarding the shared access easement with the abutting property. The applicant has indicated that discussions are ongoing with the owner of 5-7 Mechanic St. to formalize a written agreement for improvements to and use of the deeded accessway.

The Technical Review Committee reviewed the application at their April 2, 2025, November 6, 2025, and January 22, 2026 meetings. Part of the TRC discussion and review focused on emergency access, building code compliance based on proximity to neighboring structures, parking availability and layout, and access for passenger vehicles and garbage removal. *(minutes attached)*

Summary of Waiver Requests:
The applicant is seeking two waivers as part of this proposal. The waivers are from the following:

1. §153-14.D.6(b), relief requested from required two-way accessway width of 24'.
2. §153-13A(12), relief requested from required landscape plan that is signed by an LLA.

Consistency with Land Use Regulations –Waivers/Relief
§153-21 of the Site Plan Review Regulations state the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2025-0003

Application Type:	Site Review
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Meeting Date:	March 24, 2026

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning Staff believes the applicant's rationale for the requested waivers meets criterion (1), as granting such relief is not contrary to the spirit or intent of the ordinance. The lot provides limited area for landscaping; however, the applicant has included plantings on the property as shown on the plan set. Also, site access is proposed via a shared driveway made possible through an access easement with the neighboring property. The applicant is proposing to widen the existing driveway from approximately 9 feet to 16 feet, within the available area, improving existing access to both properties.

STAFF RECOMMENDATION - Waivers/Relief:

The Planning Department recommends that the Planning Board re-open the public hearing, make the necessary and supporting findings of fact, and vote to grant the waivers with the following subsequent condition:

Subsequent Condition to be Met Prior to the Signing of the Plans:

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waivers:

   §153-13A(12), required landscape plan signed by a Licensed Landscape Architect.
   §153-14.D.6(b), required two-way accessway width of 24'.

Consistency with Land Use Regulations – Site Plan

§153-13 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board makes the necessary and supporting findings of fact, and vote to approve the site plan with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   1.1. Permit File #SITE-2025-0003;
   1.2. Owner's signatures;
   1.3. Professional stamps and signatures;
   1.4. A 2x2" box on bottom right on plan set for Planning Board Chair signature;
   1.5. Revise light spillover onto abutting property.
2. Provide copy of written and signed agreement for shared improvements and driveway access with 5-7 Mechanic St.;
3. Sign and return the approved parking license agreement to the Planning Department;
4. Approval of CUP (COND-2026-0007);
5. Approval of CUP (COND-2026-0008);
6. Provide written confirmation to the Planning Department from Consolidated Communications/Fidium Fiber confirming the feasibility of undergrounding the existing utility wires serving the site to add to the others received.

Subsequent Condition to Be Met Prior to Construction:

7. A pre-construction meeting must be held with City staff;
8. Submit a concept proposal to the Planning Department for the proposed artwork for review and approval by the Arts Commission.
9. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;

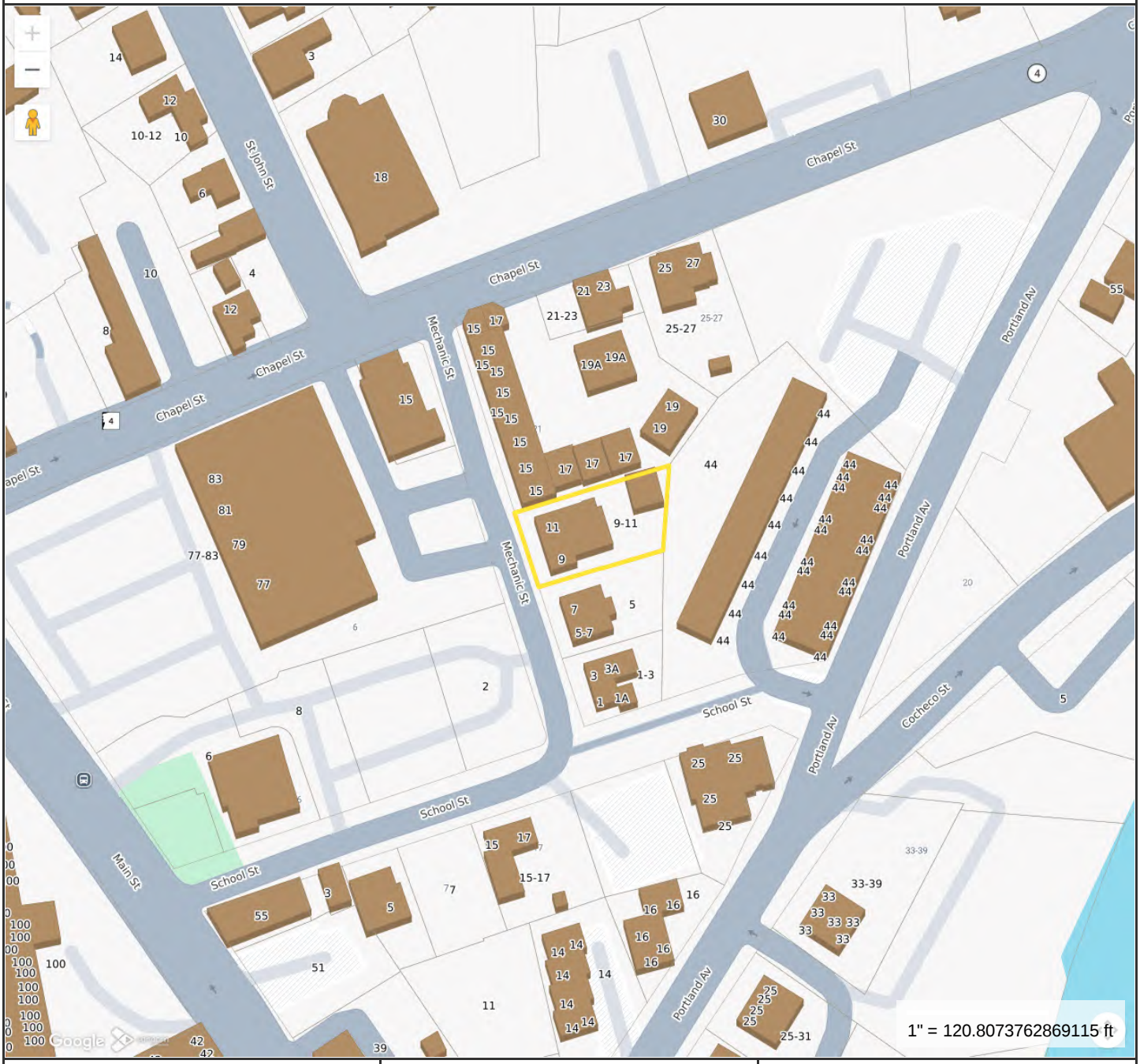
Subsequent Condition to Be Met Prior to Building Permit:

10. Payment of Water and Sewer Investment Fees, if applicable, at time of request of service;

Subsequent Conditions to Be Met Prior to Occupancy:

11. Issuance of Certificate of Occupancy;
12. Installation of approved public art on-site;
13. Surety or other form of security acceptable to the City is provided for any unfinished work;
14. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

SITE-2025-0003 9-11 MECHANIC STREET



Property Information

Location	9 MECHANIC ST
Owner	LEGARE BENJAMIN T TRUSTEE
Land Use	111R
Zoning Code	CBD-G
Property Id	24101-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PLAN SNAPSHOT REPORT SITE-2025-0003
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	04/03/2025
Work Class:	New Construction	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**		**Approval Expire Date:**	

Description: Construct 5 story mixed use structure, with commercial space on the 1st floor, along with an ADU, and nine (9) residential units above to include a nine (9) space parking lot.

Parcel:	24101-000000 Main	**Address:**	9-11 Mechanic St Dover, NH Main	**Zone:**	CBD-G(Central Business District - Genera

Owner	Engineer	Applicant
Benjamin Lagere 23A Middle Street Newburyport, MA 01950 Mobile: (603) 490-5085	Benjamin Osgood 130 Main Street Suite 202 Suite 202 salem, NH 03079 Home: (978) 435-1324 Business: (978) 208-1768 Mobile: (978) 435-1224	Benjamin Lagere 23A Middle Street Newburyport, MA 01950 Mobile: (603) 490-5085

Plan Custom Fields

Total2	9645	Total3	4939	Total	0
Total5	0	Total4	0	Total6	9
Total7	0	Total9	1696	Total8	9645
Street Classification Type	Municipal	Recording Number		Net Change in # Parking Spaces (+/-)	7
Water Service	Municipal	Sewer Service	Municipal	Deed Book	5230
Total Acres (GIS)	0.16	Deed Page	281	Total SQFT	6969.6
Deed Date		Proposed Property Use	Mixed use commercial/residential	Area of Parcel to be Developed (SQFT)	7169
Number of Parking Spaces Existing	2	Number of Parking Spaces Proposed	9	Number of Employees Total	3
Number of Employees in Max Shift	3	Distance to City Water	20	Distance to City Sewer	18
Type of Building to be Built	mixed use commercial residential.	Estimated Construction Value	3000000.00	Refuse Removal	Private
Is there an existing Conservation Easement?	No	Existing Conservation Easement Details		Total of Impact Fees to be Assessed	0.00
TotalImpactFeeSDTOD	0.00	Sub Total Residential	0.00	TotalImpactFeeTHTOD	0.00
TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00
TotalImpactFeeADUTOD	0.00	TotalImpactFeeAONRTOD	0.00	TotalImpactFeeAR55TOD	0.00
TotalImpactFeeAR62TOD	0.00	TotalImpactFeeRIRCTOD	0.00	Sub Total Non-Residential	0.00
TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00
TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00		

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Benjamin_Osgood_4/3/2025.jpg	04/03/2025 15:27	Osgood, Benjamin		Uploaded via CSS
2025.04.24_PlanningTechnicalReviewCommittee.Agenda.pdf	04/07/2025 13:44	Blonigen, Rachel		TRC Agenda
2025.04.24_PlanningTechnicalReviewCommittee.9-11	05/12/2025 15:05	Blonigen, Rachel		Final TRC Minutes

Mechanic_SITE-2025-0003.pdf			
2025.09.25_PlanningTechnicalReviewCommittee.Agenda.pdf	09/04/2025 14:23	Blonigen, Rachel	TRC Agenda
2025.09.25_PlanningTechnicalReviewCommittee.Agenda.Cxl.pdf	09/24/2025 13:08	Blonigen, Rachel	Cancelled TRC Agenda
2025.11.06_PlanningTechnicalReviewCommittee.Agenda.Rev.pdf	10/27/2025 12:15	Blonigen, Rachel	Revised TRC Agenda
2025.11.06_PlanningTechnicalReviewCommittee.9-11 Mechanic_SITE-2025-0003.pdf	11/10/2025 12:32	Blonigen, Rachel	Draft TRC Minutes
2026.01.22_PlanningTechnicalReviewCommittee.Agenda.pdf	01/13/2026 10:20	Blonigen, Rachel	TRC Agenda
2026.01.22_PlanningTechnicalReviewCommittee.9-11 Mechanic_SITE-2025-0003.pdf	01/22/2026 16:21	Blonigen, Rachel	Draft TRC Minutes

Note	Created By	Date and Time Created
1. Resubmit for 2nd TRC	Rachel Blonigen	05/12/2025 15:05
2. TRC Meeting scheduled for 09/25/2025 was cancelled will be rescheduled for another date TBD- RLB	Rachel Blonigen	09/24/2025 13:06
3. access concerns unresolved- Erin e mailed	Jim Maxfield	10/30/2025 9:14

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025011865	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-2025011865	**$200.00**	**$200.00**
INV-2025012132	Planning Non-Res/Mixed Use – New Construction	$1,446.75	$1,446.75
	Total for Invoice INV-2025012132	**$1,446.75**	**$1,446.75**
INV-2025012133	Planning Public Notice in Newspaper	$120.00	$120.00
	Total for Invoice INV-2025012133	**$120.00**	**$120.00**
INV-2025012134	Planning Impervious Paved Area Fee	$346.00	$346.00
	Total for Invoice INV-2025012134	**$346.00**	**$346.00**
INV-2025012135	Planning Residential Fee	$900.00	$0.00
	Total for Invoice INV-2025012135	**$900.00**	**$0.00**
	Grand Total for Plan	**$3,012.75**	**$2,112.75**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	09/25/2025	Technical Review Committee Meeting

Comments: This TRC was cancelled, to be rescheduled at a later date that is TBD. 09/24/2025 RLB

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	04/23/2025	05/21/2025	04/23/2025

Comments:
- What is the square footage of the 2 commercial spaces?
- Do you have commercial users identified? Business Development would be happy to assist with filling spaces as needed.
- The ground floor residential may require a CUP please confirm with Planning.
- Business Development does not object to a CUP for a residential unit as described at this location on Mechanic Street. The placement and design of the commercial spaces along the frontage appears to respect the spirit and intent of the zoning, and the unit appears to use less than 25% of the ground floor area, which seems to be a reasonable concession for a site that may not reasonably be able to design upper floors for accessible units. OBD's support for a CUP is contingent on the purpose (affordable, ADA accessible) and design (no further reduction in commercial space or visibility) as currently proposed and may not be supportable on streets with higher demand for commercial space.
- Please provide some type of assessment of any barriers to ADA pedestrian access between this site and Main Street/Central Avenue. E.g. are there any points at which existing infrastructure or placement of garbage receptacles as shown on rendering imagery would render the sidewalk impassable and force a wheelchair user into the street?
- The overall project is attractive and well-designed and the massing seems to be generally appropriate for gentle infill development.

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Approved	01/13/2026	01/21/2026	02/04/2026	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Approved	01/13/2026	02/10/2026	01/23/2026

Comments: No further comments

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Semprini, Jillian	Approved	01/13/2026	01/21/2026	02/04/2026

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Approved	01/13/2026	01/21/2026	02/04/2026	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	Approved	01/13/2026	02/10/2026	02/04/2026

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Approved	01/13/2026	01/21/2026	02/04/2026

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	Requires Re-submit	04/23/2025	05/21/2025	04/23/2025

Comments: 1) Common driveway for site access of 12' appears to be narrow for vehicular ingress/egress.
2) Common driveway appears to create a blind corner at the CD corner of the proposed structure.
3) Clarify if the rear parking is limited to residents only.
4) Edit "handicap" to "accessible" throughout the plan set.
Coordinate the site with elevation plan to show front accessible ramp.
5) Plan set shall indicate the distance from boundary lines to proposed structure.
6) Elevation plans appear to indicate unprotected openings(windows) within 3' from the band D side of the proposed structure. Remove windows for compliance with IBC.
7) Structures less than 10' from the property boundary shall have a fire resistive rating. Plan set shall indicate how this is achieved in accordance w/ IBC standards.
8) With overhead power lines limiting access along the street side and without access to sides B, C, and D indicate how compliance with IBC is achieved for building height and area.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic	Police	Speidel, Marn	Requires Re-submit	04/23/2025	05/21/2025	04/25/2025

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Approved	01/13/2026	01/21/2026	02/04/2026	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic	Police	Mitrushi, Alex	Approved	01/13/2026	01/21/2026	02/04/2026

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed

Land Use Plan Technical Review v.2	Requires Re-submit	09/04/2025	09/17/2025	09/24/2025	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	09/04/2025	10/02/2025	09/24/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	09/04/2025	09/17/2025	09/24/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	Requires Re-submit	09/04/2025	10/02/2025	09/24/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	09/04/2025	09/17/2025	09/24/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	Requires Re-submit	09/04/2025	09/17/2025	09/04/2025

Comments: 1)There does not appear to be revised plans submitted.
2) Access remains a major concern

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic	Police	Speidel, Marn	Requires Re-submit	09/04/2025	09/17/2025	09/24/2025

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.3	Requires Re-submit	10/27/2025	11/05/2025	02/04/2026	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development		Requires Re-submit	10/27/2025	11/24/2025	02/04/2026

Comments: No further comments

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering		Requires Re-submit	10/27/2025	11/05/2025	02/04/2026

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning		Requires Re-submit	10/27/2025	11/24/2025	02/04/2026

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning		Requires Re-submit	10/27/2025	11/05/2025	02/04/2026

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services		Requires Re-submit	10/27/2025	11/05/2025	02/04/2026

Comments: 1) Site access and compliance with NFPA 1 items have been addressed in revision with underground utilities resulting in Mechanic Street being the fire access road. Provide letters from each pole using utility that will accept the conversion of overhead to underground.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic	Police		Requires Re-submit	10/27/2025	11/05/2025	02/04/2026

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		04/04/2025 14:31	02/04/2026 15:41
Confirm application complete v.1	Generic Action		04/04/2025 14:32

PLAN SNAPSHOT REPORT (SITE-2025-0003)

Technical Review Committee Meeting Agenda v.1	Task	04/04/2025 14:31	04/23/2025 11:20
Land Use Plan Technical Review v.1	Receive Submittal	01/13/2026 0:00	02/04/2026 15:40
Land Use Plan Technical Review v.1	Receive Submittal	04/23/2025 0:00	04/25/2025 11:45
Land Use Plan Technical Review v.2	Receive Submittal	09/04/2025 0:00	09/24/2025 13:05
~~Land Use Plan Technical Review v.3~~	Receive Submittal	10/27/2025 0:00	02/04/2026 15:41
Technical Review Committee Meeting v.1	Hold Meeting	10/27/2025 13:01	01/13/2026 9:57
Technical Review Committee Meeting v.1	Hold Meeting	01/13/2026 9:58	02/04/2026 15:37
Technical Review Committee Meeting v.1	Hold Meeting	09/04/2025 11:44	09/24/2025 13:06
Planning Board v.1		02/04/2026 15:45	
Planning Board Agenda v.1	Task	02/04/2026 15:45	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Stamped and Signed v.1	Generic Action		
Recording v.1	Task		
Document Archival v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: BENJAMIN T. LAGARE, TRUSTEE MECHANIC STREET REALTY TRUST Telephone # 603-490-5085

Address of Applicant: 23A MIDDLE STREET, NEWBURYPORT MA 01950

E-Mail Address: BENJAMIN.LAGARE@GMAIL.COM

Name of Property Owner (*if different from applicant*): SAME Telephone #

Address of Property Owner: SAME

PROPERTY INFORMATION

Address of Property: 9-11 MECHANIC STREET, DOVER NH

Assessor's Map # 24 Lot(s) # 101

Zoning District(s) CBD SUBDISTRICT G Overlay District(s)

Size of Parcel: 7169 sq. ft. 0.16 ac. Property Deed: Book 5230 Page: 281

Existing Use of Property: MULTI FAMILY RESIDENTIAL

SITE PLAN INFORMATION

Describe Proposed Use: 5 STORY MIXED USE WITH COMMERCIAL ON FIRST FLOOR

Area of Parcel to be Developed: 7169 sq. ft.

If Multi-family Residential: Number of Units 9 & Buildings Proposed 1

If lodging: Number of Units _____ & number of Buildings _____

Number of Parking Spaces: Existing 2 Proposed 9

Highway Access (check where applicable): X City Street ____ State Highway

Number of Employees Total: _____ In Maximum Shift: _____

Disposition of Parcel:

Building Footprint 1,696 sq. ft.

Total Building Area 9,645 sq. ft.

Paved Area 3,277 sq. ft.

Building Setbacks:

Front Yard 5 ft.

Rear Yard 69.55 ft.

Side Yard: Right 1.57 ft. Left 0.82 ft.

City Water? X Yes ___ No How far is city water from the property? _____

City Sewer? X Yes ___ No How far is city sewer from the property? _____

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

□ Residential □ Residential (reduced size) □ Industrial | □ Purchase □ Land Preservation

Relief sought (Check All That Apply):

□ Lot Size □ Frontage □ Setback □ 30' Buffer □ Increase by _____ units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: MIXED USE COMMERCIAL ON FLOOR 1 RESIDENTIAL ABOVE

Height of Building: 5 STORY Finished Floor Elevation: 67.25'

Number of Seats (where applicable) N/A

Estimated value of construction: _____Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

Justification for waiver request(s) (*attach additional sheets as needed*):

_____

_____

_____

_____

_____

_____

_____

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Timothy J Winings RANGER Engineering

Address 130 MAIN ST. SALEM, NH Telephone #: 978-208-1762

Professional License #: NH - 682 E-mail address: myTJWsurvey@Gmail.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Benjamin C Osgood, JR RANGER ENGINEERING GROUP INC.

Address 130 MAIN STREET SALEM NH Telephone #: 978-435-1324

Professional License #: NH-12080 E-mail address: BOSGOOD@RangerEng.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) JOHN P HAYES III

Address 7 LIMESTONE WAY, NORTH HAMPTON, NH 03862 Telephone #: 603-205-4396

Professional License #: NH 087 E-mail address: _____

CONSERVATION EASEMENT HOLDER N/A

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 4-3-25

Signature of Applicant (*if different from owner*): _____ Date: _____

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 4-3-25

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 4-3-25

Signature of Applicant (*if different from owner*): _____ Date: _____

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: _____ Date: 4-3-25

Signature of Applicant (*if different from owner*): _____ Date: _____

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan review fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☒ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - ☒ New construction $.15 sq. ft. x # 9,645 sq. ft.= 1446.75 $1646.75
  - ○ Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - ○ Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - ○ Application fee $50.00= $_____
  - ○ Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☒ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # 4939 sq. ft. = $346

SUBTOTAL PLAN REVIEW FEE = $1992.75

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - ○ Certified letters fee # _____ of x $10.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $10.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $120.00 x # 1 applications = $120.-

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $_____

BALANCE DUE = $_____

The amount due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE NOTES– SITE-2025-0003

Application Type:	Site Plan
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Date Sent:	January 22, 2026

INTENT: Proposal is to construct a five (5) story mixed-use structure, with commercial space on the first floor and nine (9) residential units throughout the building. *[This item was previously heard by the Planning Technical Review Committee on April 2, 2025 and November 6, 2025.]*

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

AGENDA ITEM #: 1

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District-General (CBD-G)

EXISTING LAND USE: Residential

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

PERMITS/RELIEF REQUESTED: Relief needed from §153-13A(12), required landscape plan that is signed by an LLA and §153-14D(6)(b), required two-way accessway with a minimum width of 24 feet. Two CUPs required for residential use on first floor and dimensional relief.

ATTENDANCE:
Donna Benton, Planning
Paul Crouser, Zoning
Jill Semprini, Engineering
Jim Maxfield, Inspection Services
Craig Chabot, Fire Department
Alex Mitrushi, Police Department
James Burdin, Business Development

Others:
Erin Bassegio, City Planner
Matthew Gibbons, Deputy City Engineer
Robert Ciampitti, Applicant
Ben Osgood, Ranger Engineering
Stefano Basso, SV Design

Approval of minutes from December 18, 2025:
J. Burdin moved to approve the December 18, 2025 minutes. Seconded by C. Chabot. Vote: U/A.

PLAN REVIEW:
Planning:

- *Reminder: Water and sewer investment fees*
- *Provide letters to serve from utilities when available during TRC process*
  - *These will be needed prior to Planning Board.* (Letters needed from Verizon and Comcast)
- *Reminder: Pest management plan/letter*
  - Acknowledged note on plan added. Management plan or letter can be a condition of approval.
- *Provide application and revise current application materials which indicates no CUPs*
  - CUP narratives were not included with submission. This will be two CUP requests (allowing residential on first floor and lot coverage relief), and require narratives per *§170-20B*.
- *Discuss where extra 10 parking spaces will be provided. City may be able to accommodate in Portland Ave lot.*
  - Confirmation provided. Council agreement on parking spaces will be considered on Jan. 28th 2026.
- *Note public art is expected.*
  - *Noted inclusion on rendering: staff will review final proposal.*
- *As part of streetscape standards, public waste bin, bench, and street trees shall be included.*
  - Thank you for updating plan to include streetscape requirements, as discussed, preference would be for landscaping.
  - Bike rack to city standard, staff can provide.
- Photometric plan submitted- boundary spillover shown, please include uniformity ratio.
- *Waiver requests should be expanded to better indicate how they meet the criteria of the waiver criteria being met.*
  - §153-13A(12): relief needed from required landscape plan that is signed by a Licensed Landscape Architect.
  - §153-14D(6)(b): relief needed from required two-way accessway under the minimum of 24 feet.
- For relief related to ground floor commercial/residential make-up, preference would be for ground-floor accessible unit to be restricted to HUD Fair Market Rent rates.

Engineering:

DRAFT

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE NOTES– SITE-2025-0003

Application Type:	Site Plan
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Date Sent:	January 22, 2026

- Provide additional dimensions on dumpster pad details for fencing and bollard clearances.
- It is unclear whether trash and recycling will be by dumpster or totters.
- Recommend larger dumpster based on number of dwelling units.
- Grading & Drainage Plan – recommend adding 1' contours or 0.5' contours to clearly show pavement grading intent.
- Recommend pavement overlay across entire street in front of the property.
- Landscaping plan – landscaping still conflicts with catch basin.
- Turning plan – passenger car and trash truck turning radius conflicts with curb, sidewalk, and parking spaces.
- Turning plan – ladder truck turning plan does not work. Remove if IS no longer requested ladder truck access at rear and side of building.
- Utility Plan – show (2) 45 deg elbows instead of 90s and thrust blocks where required. Note 21, sewer should be witnessed with color green, not yellow. Add vertical insulation board between water service and DMH 1.
- Utility Plan & Details – 2" line shown where 4" shown on Utility plan. Insufficient cover over water service (5' required). Water service profile does not shown 18" separation between sewer main.
- Drainage Details – Section 1 and 2 notes conflict with respect to subgrade soils. Section 1 elevations shown are insufficient for required 4" HMA and 6-8" sub base. Fix dimension lines for pipe spacing.
- Access authorization letter for curb box to be provided prior to planning board signature.
- Lighting plan – lighting intensity shall be 0 light candles along all property lines
- Stormwater report – revise and resubmit based on design changes.
- *Parking is too tight in the rear, no swing room for backing. Risk of striking toter enclosure*

Inspection Services:

- Site access and compliance with NFPA 1 items have been addressed in revision with underground utilities resulting in Mechanic Street being the fire access road. Provide letters from each pole using utility that will accept the conversion of overhead to underground.
- Review access aisle width for accessible parking space (8' space, 8' acess aisle).

Fire Department:

- Prior comments addressed.

Business Development:

- Thank you for committing to HUD rent-restricted unit.
- No further comments.

Planning Board:

- *More detailed description needed for CUP justifications.*

Next Steps: Revise plans per comments above and resubmit for Planning Board.

Adjournment: J. Burdin moved to adjourn the meeting at 11:01 a.m. Seconded by A. Mitrushi. Vote: U/A.

Police:

DRAFT

TRC PLAN REVIEW RESPONSES
2/2/2026

Planning:

- *Reminder: Water and sewer investment fees*
- *Provide letters to serve from utilities when available during TRC process*
    - *These will be needed prior to Planning Board.* (Letters needed from Verizon and Comcast)
        - **These letters are being requested and will be submitted prior to the planning board hearing**
- *Reminder: Pest management plan/letter*
    - Acknowledged note on plan added. Management plan or letter can be a condition of approval.
        - **No response required**
- *Provide application and revise current application materials which indicates no CUPs*
    - CUP narratives were not included with submission. This will be two CUP requests (allowing residential on first floor and lot coverage relief), and require narratives per *§170-20B*.
        - **A narrative will be provided**
- *Discuss where extra 10 parking spaces will be provided. City may be able to accommodate in Portland Ave lot.*
    - Confirmation provided. Council agreement on parking spaces will be considered on Jan. 28th 2026.
        - **The Council granted the lease for 10 spaces**
- *Note public art is expected.*
    - *Noted inclusion on rendering: staff will review final proposal.*
        - **No response required**
- *As part of streetscape standards, public waste bin, bench, and street trees shall be included.*
    - Thank you for updating plan to include streetscape requirements, as discussed, preference would be for landscaping.
    - Bike rack to city standard, staff can provide.
        - **The civil plans have locations and details for each of these items**
- Photometric plan submitted- boundary spillover shown, please include uniformity ratio.
    - **The photometric plan will be revised and included under separate cover. The light pole locations have been revised so cutoff fixtures can be used to eliminate wash onto adjacent properties.**
- *Waiver requests should be expanded to better indicate how they meet the criteria of the waiver criteria being met.*
    - §153-13A(12): relief needed from required landscape plan that is signed by a Licensed Landscape Architect.
    - §153-14D(6)(b): relief needed from required two-way accessway under the minimum of 24 feet.
        - **Additional explanation provided.**
- For relief related to ground floor commercial/residential make-up, preference would be for ground-floor accessible unit to be restricted to HUD Fair Market Rent rates.
    - **The ground floor residence will be restricted to HUD fair market rates**

Engineering:

- Provide additional dimensions on dumpster pad details for fencing and bollard clearances.
    - **Additional details have been added to the dumpster pad detail.**
- It is unclear whether trash and recycling will be by dumpster or totters.
    - **There will be a 4 yard dumpster**
- Recommend larger dumpster based on number of dwelling units.
    - **A four yard dumpster has a capacity large enough so once a week pickup is adequate**
- Grading & Drainage Plan – recommend adding 1' contours or 0.5' contours to clearly show pavement grading intent.
    - **A 65.5 contour has been added to the parking lot.**
- Recommend pavement overlay across entire street in front of the property.
    - **The plan has been revised to show a mill and overlay in front of the property.**
- Landscaping plan – landscaping still conflicts with catch basin.

- **The landscaping has been revised**

- Turning plan – passenger car and trash truck turning radius conflicts with curb, sidewalk, and parking spaces.
  - **The turning plans have been revised**
- Turning plan – ladder truck turning plan does not work. Remove if IS no longer requested ladder truck access at rear and side of building.
  - **The ladder truck turning plan has been removed.**
- Utility Plan – show (2) 45 deg elbows instead of 90s and thrust blocks where required. Note 21, sewer should be witnessed with color green, not yellow. Add vertical insulation board between water service and DMH 1.

  The plan has been revised to show 2 45 degree bends. Note 21 has been revised. Insulation board has been added between the water line and DMH 1.
- Utility Plan & Details – 2" line shown where 4" shown on Utility plan. Insufficient cover over water service (5' required). Water service profile does not shown 18" separation between sewer main.
  - **The label has been revised to 4". The water service line has been revised to show 5'. The elevation of the sewer line and the 5' of cover requirement makes the 18" separation impossible. A sleeve has been added to the water line.**
- Drainage Details – Section 1 and 2 notes conflict with respect to subgrade soils. Section 1 elevations shown are insufficient for required 4" HMA and 6-8" sub base. Fix dimension lines for pipe spacing.
  - **The notes regarding subgrade soils have been coordinated and revised to be more specific. The elevations in the section view have been revised. The system has been made slightly larger and additional pipes added to account for a smaller depth of stone in the subsurface system.**
- Access authorization letter for curb box to be provided prior to planning board signature.
  - **An access authorization letter has been attached.**
- Lighting plan – lighting intensity shall be 0 light candles along all property lines
  - **The light locations have been revised and a revised lighting photometric plan will be provided.**
- Stormwater report – revise and resubmit based on design changes.

Police:

- *Parking is too tight in the rear, no swing room for backing. Risk of striking toter enclosure*
  - **The dumpster location has been moved to where it will not be struck by cars.**
  - **A parking space has been eliminated to provide room for cars to swing into the lot.**

Inspection Services:

- Site access and compliance with NFPA 1 items have been addressed in revision with underground utilities resulting in Mechanic Street being the fire access road. Provide letters from each pole using utility that will accept the conversion of overhead to underground.
  - **Additional letters will be provided.**
- Review access aisle width for accessible parking space (8' space, 8' acess aisle).
  - **The handicap space has been revised**

Fire Department:

- Prior comments addressed.

Business Development:

- Thank you for committing to HUD rent-restricted unit.
- No further comments.

Planning Board:

- *More detailed description needed for CUP justifications.*
  Additional CUP details will be provided

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE NOTES– SITE-2025-0003

Application Type:	Site Plan
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Date Sent:	November 6, 2025

INTENT: Proposal is to construct a five (5) story mixed-use structure, with commercial space on the first floor and nine (9) residential units throughout the building. *[This item was previously heard by the Planning Technical Review Committee on April 2, 2025.]*

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

AGENDA ITEM #: 2

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District-General (CBD-G)

EXISTING LAND USE: Residential

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

PERMITS/RELIEF REQUESTED: Relief being requested from Site Review Regulations including requirement for a signed Landscape Plan, color renderings, and a traffic impact assessment.

ATTENDANCE:
Erin Bassegio, Planning
Paul Crouser, Zoning
Jill Semprini, Engineering
Craig Chabot, Fire Department
Alex Mitrushi, Police Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Donna Benton, Planning Director
Robert Ciampitti, Applicant
Ben Osgood, Ranger Engineering
Michael Albert, SV Design

Meeting resumed at: 10:53 a.m.

PLAN REVIEW:
Planning:

- Include Dover common notes, staff can provide upon request.
- *Reminder: Water and sewer investment fees*
- *Provide letters to serve from utilities when available during TRC process*
  - These will be needed prior to Planning Board.
- *Discuss how demolition and construction will work so close to the property line?*
  - Was there a written architectural narrative that was intended to be submitted? Please provide.
- *Reminder: Pest management plan/letter*
  - Can be a condition of approval but should be noted on plan.
- *Provide application and revise current application materials which indicates no CUPs*
  - Thank you for submitting the CUP application form. This will be two CUP requests (allowing residential on first floor and setback relief), and require narratives per *§170-20B*.
- *Confirm building and life safety codes are being met.*
  - Defer to Inspection Services.
- *Discuss where extra 10 parking spaces will be provided. City may be able to accommodate in Portland Ave lot.*
  - Provide confirmation from Parking Bureau.
- *Narrative for Architectural Standards not included*
  - Please provide written architectural narrative.
- *Note public art is expected.*
  - Noted inclusion on rendering: staff will review final proposal.
- *As part of streetscape standards, public waste bin, bench, and street trees shall be included.*
  - Thank you for updating plan to include streetscape requirements, staff can provide city bench/waste bin specs. A CUP will need to be sought if standards can't be met.
- *No lighting plan – would require waiver*
  - *Two sconce and one parking lot light sufficient?*
    - Photometric lighting plan was not submitted.
- *24' driveway is required, along with 30' ROW. Waiver would be needed.*

  - Response stated the accessway is 18', the plan shows 16'.
- *Add dimensions and materials to architectural renderings.*
  - *Why is the ground floor a different size than floors 2-5?*
  - *Add masonry to front center area.*
- *In terms of relief:*
  - *Clarify lighting intent.*
    - Photometric lighting plan was not submitted.
  - *Waiver requests should be expanded to better indicate how they meet the criteria of the waiver criteria being met.*

Engineering:

- Site Plan - dumpster pad drawn 9' wide, details show 10' wide.
- Site Plan - Note 19 refers to incorrect number of parking spaces.
- Drainage plan – recommend reviewing grading for treatment, ponding, and icing concerns at parking rear. Appears stormwater will flow to CB2 first and bypass BMP. Show pipe elevation between BMP and CB2.
- Utility plan – defer to IS regarding FDC location building side vs street side.
- Utility plan – show existing water service to be disconnected.
- Landscaping plan – landscaping conflicts with snow storage and CB1.
- Turning plan – passenger car turning radius conflicts with curb.
- Utility plan details – water service detail does not match sizes and routing shown on utility plan.
- Minimum cover for drainage pipe shall be 3' per Dover Construction Guidelines.
- Detail calls out Stormtech system. Design does not appear to be Stormtech system.
- What is the design intent of 40 mil barrier in proposed BMP? Not shown in cross section.
- BMP pipe diameters are not clear in drawing and notes.
- Access to curb box will be required – access authorization letter.
- Defer to IS regarding permit and design requirements for wall – greater than 4' high at property rear.

Police:

- *Parking is too tight in the rear, no swing room for backing. Risk of striking toter enclosure*
- *Lack of snow storage*
- *Clarify how trash pickup/toters will be managed at pickup time*

Inspection Services:

- Site access and compliance with NFPA 1 items have not been addressed in revision.

Fire Department:

- Include no parking, fire lane signs.
- Ensure FDC in front of building.
- Revise fire truck turnaround to include Dover ladder truck.

Business Development:

- All requested changes or questions have been addressed. No new comments/questions.

Planning Board:

- *Need to show accessible route of travel within or around building.*
- *More detailed description needed for CUP justifications.*

Next Steps: Revise plans per comments above and resubmit for TRC.

Adjournment: T. Clark moved to adjourn the meeting at 11:33 a.m. Seconded by C. Chabot. Vote: U/A.

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2025-0003

Application Type:	Site Plan
Applicant(s):	Mechanic Street Realty Trust
Owner(s):	Mechanic Street Realty Trust
Location:	9-11 Mechanic Street (Assessor's Map 24, Lot 101)
Date:	April 24, 2025

INTENT: Proposal is to construct a five (5) story mixed-use structure, with commercial space on the first floor, an ADA unit on the first floor, and a parking lot with nine (9) spaces.

LOTS/UNITS PROPOSED: Two (2) commercial units and nine (9) residential units

AGENDA ITEM #: 1

ACREAGE: 0.16± ac.

ZONING DISTRICT: Central Business District-General (CBD-G)

EXISTING LAND USE: Residential

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE: Residential, Commercial

ZBA ACTION: None.

PERMITS/RELIEF REQUESTED: Relief being requested from Site Review Regulations including requirement for a signed Landscape Plan, color renderings, and a traffic impact assessment.

ATTENDANCE:
Donna Benton, Planning
Paul Crouser, Zoning
Marn Speidel, Police Department
Jill Semprini, Engineering
Craig Chabot, Fire Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Erin Bassegio, City Planner
Bill Simons, Parking Manager
Robert Ciampitti
Ben Osgood, Ranger Engineering

Approval of minutes from April 17, 2025:
T. Clark moved to approve the April 17, 2025 minutes. Seconded by J. Burdin. Vote: U/A.

PLAN REVIEW:
Planning:

- Reminder: Water and sewer investment fees
- Provide letters to serve from utilities when available during TRC process
- Discuss how demolition and construction will work so close to the property line?
- Reminder: Pest management plan/letter
- Provide application and revise current application materials which indicates no CUPs
  - Residential on ground floor (and <20% commercial) necessitates CUP per §170-20B.
  - Minimum lot coverage is not being met so a CUP is required. Lot coverage is just for building and not pavement.
  - Add setback averages in detail
- Understand these units are market rate but ADA unit may be HUD Fair Market rent restricted.
- Confirm building and life safety codes are being met.
- Discuss where extra 10 parking spaces will be provided. City may be able to accommodate in Portland Ave lot.
- Remove signage from architectural sheets as that is an administrative function. Have architect sign and stamp architectural plans.
- Narrative for Architectural Standards not included
- Note public art is expected.
- As part of streetscape standards, public waste bin, bench, and street trees shall be included.
- Will existing tree survive? CUP may be required for streetscape standards. Off site improvements may be considered.
- Is the abutter aware of the trees being removed and access easement being used?
- How is snow being removed?
- How is trash removal structured?
- Chain-link fence should be stockade
- No lighting plan – would require waiver
  - Two sconce and one parking lot light sufficient?
- Seeking any efficiency certs? (LEED)

- 24' driveway is required, along with 30' ROW. Waiver would be needed.
- 1 EV-ready space is required (5% rounded up of all spaces)
- Neighborhood plan needs to have abutter information, and be slightly more zoomed out.
- LLS to sign and stamp existing conditions plan. Property markers not found?
- Edit "handicap" to "accessible" throughout the plan set.
- Revise site construction note to remove Saturday and Sunday hours and no federal holidays due to proximity of residential.
- Show turning template into parking spaces with dimensions.
- Add dimensions and materials to architectural renderings.
    - Why is the ground floor a different size than floors 2-5?
    - Add masonry to front center area.
- Referencing incorrect regs in waiver requests, please clarify relief being requested.
    - Landscape plan: §153-13A(12)
    - Color rendering: §153-13A(17)
    - Traffic impact assessment: §153-13A(19)
- In terms of relief:
    - A standard traffic analysis is expected by TRC and Planning Board.
    - Clarify lighting intent.
    - Waiver requests should be expanded to better indicate how they meet the criteria of the waiver criteria being met.
    - Address zoning and CUP requirements to limit relief being sought.

Engineering:

- General Comment:
    - The Applicant and Contractor shall conform to the requirements of the City of Dover Permitting, Licensing, and Construction Guidance and Standards (latest revision April 2025). The document can be found at the following link: https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf
    - Recommend providing 1 sf of snow storage per 10 sf of pavement to be cleared. Verify snow storage meets or exceeds this recommendation or provide note to remove excess snow when storage areas are filled.
    - Confirm snow storage areas do not conflict with landscaping. Recommend storing snow in areas where landscaping won't get in the way.
- Please coordinate directly with Community Services (Engineering Department) for latest City Standard Details: https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Standard%20Details.pdf
- Sheet 4 of 11 Layout & Materials CS1001
    - 22' width between parking spaces is a tight turnaround area. An additional small pavement area at the rear of the parking lot is recommended to facilitate turnarounds.
    - Show fence on trash enclosure
    - What size dumpster(s) are planned?
    - Change ADA terminology to "Accessible"
    - Check minimum width 17'-2"
    - Add radius at driveway turn to parking lot
    - Will driveway with easement be paved?
    - Driveway apron must be HMA.
    - Label granite curb as vertical granite curb.
- Sheet 5 of 11 Grading & Drainage Plan
    - Clarify top elevation of rear retaining wall at changes in direction.
    - Confirm if easement required to construct wall alongside setbacks.
    - Provide drain manholes in lieu of cleanouts along driveway.
    - Provide profile showing all utility crossings in street.
    - Trench shown is too narrow.
    - Verify new drain manhole inverts in the field.
    - If sufficient distance between sewer/water, consider typing into this CB.

- Sheet 6 of 11 Utility Plan CS1601
  - Gate box required to cover curb box in sidewalk
  - Tapping gate to be at tapping sleeve
  - Show existing water service to be removed, if new services is to be installed.
  - No sewer cleanout on the exterior
  - Show existing water shutoff for #5-7. Applicant will need to install roadbox and replace curb box and rod.
  - New riser pole needed or is there on present?
  - Note 20, only hinged cover required.
  - Clarify how trash truck will pick-up waste
  - Clarify snow removal/storage area
- Sheet 8 of 11 Site Details CS6001
  - No flush curb per City of Dover Details
  - Use City of Dover Details for concrete sidewalk minimums
- Sheet 9 of 11 Drainage Details CS6011
  - Outlet structure rim is set 3" above top elevation of berm
- Drainage report 9-11 Mechanic Street
  - Page 1/91, Please provide a detailed narrative on how the design conforms to each specific requirement of City of Dover Code Section 153-14.
  - Page 49/91:
    - Type III rainfall distribution required
    - Cornell numbers should be used for rainfall distribution. Events should be according to Dover Code Section 153-14. Note volume reduction.
  - Page 56/91, provide infiltration feasibility study per Dover Section 153-14

Police:

- Parking is too tight in the rear, no swing room for backing. Risk of striking toter enclosure
- Lack of snow storage
- Clarify how trash pickup/toters will be managed at pickup time

Inspection Services:

- Common driveway for site access of 12' appears to be narrow for vehicular ingress/egress.
- Common driveway appears to create a blind corner at the CD corner of the proposed structure.
- Clarify if the rear parking is limited to residents only.
- Edit "handicap" to "accessible" throughout the plan set. Coordinate the site with elevation plan to show front accessible ramp.
- Plan set shall indicate the distance from boundary lines to proposed structure.
- Elevation plans appear to indicate unprotected openings (windows) within 3' from the band D side of the proposed structure. Remove windows for compliance with IBC.
- Structures less than 10' from the property boundary shall have a fire resistive rating. Plan set shall indicate how this is achieved in accordance w/ IBC standards.
- With overhead power lines limiting access along the street side and without access to sides B, C, and D indicate how compliance with IBC is achieved for building height and area.

Fire Department:

- Access concerns:
  - 12' driveway
  - Blind turn into parking area
  - Turning template
  - Overhead utility lines along Mechanic St. prevent aerial access. Place underground.
- Spoke with the Building Official regarding unprotected openings and proximity to boundaries.

Business Development:

- What is the square footage of the 2 commercial spaces?
- Do you have commercial users identified? Business Development would be happy to assist with filling spaces as needed.

- The ground floor residential may require a CUP please confirm with Planning.
- Business Development does not object to a CUP for a residential unit as described at this location on Mechanic Street. The placement and design of the commercial spaces along the frontage appears to respect the spirit and intent of the zoning, and the unit appears to use less than 25% of the ground floor area, which seems to be a reasonable concession for a site that may not reasonably be able to design upper floors for accessible units. OBD's support for a CUP is contingent on the purpose (affordable, ADA accessible) and design (no further reduction in commercial space or visibility) as currently proposed and may not be supportable on streets with higher demand for commercial space.
- Please provide some type of assessment of any barriers to ADA pedestrian access between this site and Main Street/Central Avenue. E.g. are there any points at which existing infrastructure or placement of garbage receptacles as shown on rendering imagery would render the sidewalk impassable and force a wheelchair user into the street?
- The overall project is attractive and well-designed and the massing seems to be generally appropriate for gentle infill development.

Planning Board:

- Need to show accessible route of travel within or around building.
- More detailed description needed for CUP justifications.
- Traffic analysis is required and not likely to be waived.

Next Steps: Revise plans per comments above and resubmit for a second TRC.

Adjournment: T. Clark moved to adjourn the meeting at 11:23 a.m. Seconded by J. Burdin Vote: U/A

DESIGN

Architectural Narrative
Mechanic Street Realty Trust
9-11 Mechanic Street, Dover NH
12/10/2025

Project Overview

The proposed project is a redevelopment of an existing urban infill lot with a new construction mixed use building. The existing multi-family building on site is in disrepair and it's replacement with a new mixed use building will add commercial activity to the streetscape and add much needed residential housing units to the downtown.

The proposed development features two commercial units and nine residential apartment units in a five story building with parking to the rear of the site. Commercial spaces are characterized by their street facing storefront windows. The residential units are primarily two bedrooms with one studio unit on the ground floor, serviced by an elevator and two fire stairs. The building and site will be fully accessible and feature efficient mechanical systems, continuous insulation and climate resiliency measures.

The rear parking area is accessed by a curb cut and drive aisle, with a rear entry door, utilities access and trash area.

New plantings will be added at small landscaped areas along the sidewalk. Plantings will be native species, chosen for their low maintenance, drought tolerant and salt resistant properties as well as their visual appeal. All exterior lighting is to be LED powered and Dark Sky compliant.

Architectural Design and Approach

The proposed exterior design incorporates a variety of architectural elements found throughout New England as a whole and Dover specifically. The design of the building seeks to reduce the apparent massing of the five-story structure through use of siding types and exterior details. The lower two levels are clad with full brick veneer which grounds the building with a heavier base and relates to other red brick buildings in the downtown. The middle two stories are clad with a traditional light grey clapboard while the top floor is lightest with a white panel and trim detail. Each of these vertical transitions is accentuated by dimensional cornice line trim bands, the bottom of which is a deeper sign bad and canopy at a scale you would see along Main Street. This massing strategy brings the scale of the building more in line with neighboring single-family homes.

The front façade is also punctuated by a pair of 3-story bay window bump outs that bring the white panel and trim detail from the top floor down to the sign band canopy. Windows are traditional double hung units with black sash, frame and simulated divided lites. Commercial storefronts are all black and building signage will be in classic gold lettering. The base of the building is further accented with a stone water table band and the wall along the driveway side features space for a mural or other public art work to enliven the pedestrian experience along Mechanic Street.

Exterior building materials are low maintenance and durable, with all siding being factory finished cementitious siding assembled as a rain screen over continuous rigid insulation. Roofing is clad in reflective white TPO roofing (reducing the urban heat island effect) and provides ample space for solar panels, heat pumps and energy recovery units all concealed from view.

Additional Comments / Responses

- *Discuss how demolition and construction will work so close to the property line?*
    - There is ample room for demolition of the existing structure by a licensed professional and this information will be included with a future demolition permit application. The building will need to be abated of any hazardous materials (if any exist) and this process is carefully monitored. Typically we see this scale of building being scraped down by an excavator methodically to ensure safety of pedestrians and adjacent property.
    - There are several options available for zero lot line construction and this will ultimately be a question for the general contractor as part of their means and methods. Prefabricated panelized wall construction is an option that is effective in close quarters and reduces construction durations delivering projects faster. For foundation work, shoring with offset footings are likely to be utilized along the North side property line.
- *Confirm building and life safety codes are being met.*
    - A fully documented code compliant permit set of drawings will be filed for review by Insepctional Servies prior to the issue of a building permit. This drawing set will document all required construction type, occupancy, egress, fire protection, and other required life safety information as required by the Building Code.
- *Note public art is expected.*
    - See rendering on sheet A205 for proposed public art size and location. Final proposal to be submitted for staff review prior to completion of the project.
- *As part of streetscape standards, public waste bin, bench, and street trees shall be included.*
    - Design to include these elements as required.
- *Add dimensions and materials to architectural renderings.*
    - *Renderings are 3d perspectives not-to-scale; please reference the 2d elevation drawings on sheets A201 & A202 for dimensions and tags calling out exterior material specifications.*
- *Why is the ground floor a different size than floors 2-5?*
    - *The first floor accommodates an exterior walkway at the rear entrance that is covered by upper floor levels to allow extra space for vehicular circulation.*
- *Add masonry to front center area.*
    - *Frist two levels feature masonry at the front and center.*

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

87 Lafayette Road, Unit 8, P.O. Box 625, Hampton Falls, NH 03844 | T: 800.884.8485

SENT VIA EMAIL

March 5, 2026

Benjamin T. Legare, Trustee
9-11 Mechanic Street Realty Trust
c/o Robert Ciampitti, Esq.
Touchstone Closing & Escrow
11A Liberty Street
Newburyport, MA 01950

RE: Owner's Policy Number: OY-08354100
Amount of Insurance: $220,000.00
Property Address: 9-11 Mechanic Street, Dover, Strafford County, NH
Insured: Benjamin T. Legare, Trustee of the 9-11 Mechanic Street Realty Trust

Dear Mr. Legare:

Attached please find a copy of your existing owner's policy issued on December 4, 2024. Covered Risk 4 of the Owner's Policy insures, subject to the terms and conditions of the Policy, against loss or damage sustained on account of the insured premises having no legal right of access. In addition to a legal right of access, the Policy insures and includes an appurtenant easement for ingress and egress to and from the insured premises over an adjacent property. I direct your attention to the second paragraph of the Exhibit A of the attached Policy for its inclusion. This insured appurtenant easement (along with the parcel of land itself also contained in the Exhibit A), was created by a grant of easement to benefit the insured parcel of land in the attached Warranty Deed from George F. Mitropoulos and Stella Mitropoulos to Douglas M. DePorter and Nancy H. DePorter, dated April 30, 2002, recorded with the Strafford County Registry of Deeds at Book 2503, Page 497. The subsequent conveyance of the adjacent property at 5-7 Mechanic Street which is recorded at Book 2504, Page 122(the Deed from Mitropoulos to Dennett) specifically references that property as being burdened by the previously created driveway/access easement that benefits your insured parcel.

I hope you find this explanation helpful. If you have any further questions, please do not hesitate to contact me.

Sincerely,

Jane M. O'Sullivan
First Vice President
Northern New England Counsel
NH/VT State Manager

Encs: As Stated

010768

2002 MAY -2 AM 11:59

STRAFFORD COUNTY
REGISTRY OF DEEDS

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS: That George F. Mitropoulos and Stella F. Mitropoulos, husband and wife, of 315 Rochester Hill Road, Rochester, NH 03867, for consideration paid grant(s) to Douglas M. DePorter and Nancy H. DePorter, husband and wife, of 12 Meloon Road, Greenland, NH 03840, as joint tenants with rights of survivorship, with WARRANTY COVENANTS:

A certain parcel or tract of land, with the buildings thereon, situated in Dover, County of Strafford and State of New Hampshire on the easterly side of Mechanic Street and bounded on the northerly side by the land of Elizabeth Littlefield, on the easterly side by the land of one David W. Herritt, on the southerly side by land of said Elizabeth Littlefield, and on the westerly side by said Mechanic street.

Together with the right to use the driveway as now located on 5-7 Mechanic Street (which property is more particularly described in the deed of George Mitropoulos and Stella Mitropoulos to Sawalok Dennett and Brian Dennett of near or even date to be recorded) for ingress and egress to the herein-described premises.

Meaning and intending to describe and convey the same premises conveyed to George F. Mitropoulos and Stella F. Mitropoulos by deed of Fotis Karanikopoulos, dated August 21, 1967 recorded in Volume 8329, Page 290, Strafford County Registry of Deeds.

The property is not the residence of the grantor or the grantors's spouse and is not subject to homestead rights.

Executed this 30th day of April, 2002.

George F. Mitropoulos

Stella F. Mitropoulos

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
****2 THOUSAND 9 HUNDRED AND 09 DOLLARS
MO. | DAY | YR. | AMOUNT
05/02/2002 527074 $ ****2909.00
VOID IF ALTERED

State of New Hampshire
County of Rockingham

Then personally appeared before me this April 30, 2002, the said George F. Mitropoulos and Stella F. Mitropoulos, and acknowledged the foregoing to be their voluntary act and deed.

Veronica J. Longwell
~~Notary Public~~/Justice of The Peace
exp 12.20.2005

Continued on next page

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Book 5230 Page 281 Page 1 of 2
Catherine A. Berube
Register of Deeds, Strafford County
LCHIP STA224675 25.00
TRANS TAX ST864970 3,300.00

WARRANTY DEED

I, Christian Smith, an unmarried man, of Newburyport, Essex County, Massachusetts

For consideration paid

Grant to Benjamin T. Legare, Trustee of the 9-11 Mechanic Street Realty Trust, under declaration of trust dated December 2, 2024, with a mailing address of 23A Middle Street, Newburyport, Essex County, Massachusetts

WITH WARRANTY COVENANTS

A certain parcel or tract of land, with the buildings thereon, situate in Dover, County of Strafford and State of New Hampshire on the easterly side of Mechanic Street and bounded on the northerly side by the land of Elizabeth Littlefield, on the easterly side by the land of one David W. Herritt, on the southerly side by land of said Elizabeth Littlefield, and on the westerly side by said Mechanic Street.

Together with the right to use the driveway as now located on 5-7 Mechanic Street (which property is more particularly described in the deed of George Mitropoulos and Stella Mitropoulos to Sawalok Dennett and Brian Dennett, dated May 1, 2002, recorded in said Strafford County Registry of Deeds at Book 2504, Page 122, for ingress and egress to the herein-described premises.

This is not homestead property.

Meaning and intending to convey and hereby conveying the same premises conveyed to Christian Smith by deed of Robert L. Harrel, dated February 17, 2023 and recorded at the Strafford County Registry of Deeds at Book 5095, Page 505.

[Remainder of page left intentionally blank.]

Executed as a sealed instrument this 2nd day of December, 2024.

Christian Smith

COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this 2nd day of December, 2024, before me, the undersigned notary public, personally appeared Christian Smith, proved to me through satisfactory evidence of identification, which was a driver's license and personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

EMILY L. KIRBY
Notary Public
Commonwealth of Massachusetts
My Commission Expires
March 6, 2031

Notary Public – Emily L. Kirby
My Commission Expires: 03-06-2031

ALTA OWNER'S POLICY OF TITLE INSURANCE

Policy Number **OY-08354100** **File Number: 2024-4067**

Issued by OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

This policy, when issued by the Company with a Policy Number and the Date of Policy, is valid even if this policy or any endorsement to this policy is issued electronically or lacks any signature.

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at the address shown in Condition 17.

COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B, AND THE CONDITIONS, Old Republic National Title Insurance Company, a Florida corporation (the "Company"), insures as of the Date of Policy and, to the extent stated in Covered Risks 9 and 10, after the Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. The Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. Covered Risk 2 includes, but is not limited to, insurance against loss from:
    a. a defect in the Title caused by:
        i. forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
        ii. the failure of a person or Entity to have authorized a transfer or conveyance;
        iii. a document affecting the Title not properly authorized, created, executed, witnessed, sealed, acknowledged, notarized (including by remote online notarization), or delivered;
        iv. a failure to perform those acts necessary to create a document by electronic means authorized by law;
        v. a document executed under a falsified, expired, or otherwise invalid power of attorney;
        vi. a document not properly filed, recorded, or indexed in the Public Records, including the failure to have performed those acts by electronic means authorized by law;
        vii. a defective judicial or administrative proceeding; or
        viii. the repudiation of an electronic signature by a person that executed a document because the electronic signature on the document was not valid under applicable electronic transactions law.
    b. the lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
    c. the effect on the Title of an encumbrance, violation, variation, adverse circumstance, boundary line overlap, or encroachment (including an encroachment of an improvement across the boundary lines of the Land), but only if the encumbrance, violation, variation, adverse circumstance, boundary line overlap, or encroachment would have been disclosed by an accurate and complete land title survey of the Land.

Policy Issuer:
TOUCHSTONE CLOSING & ESCROW, LLC
27 MAIN STREET
ANDOVER, MA 01810
PHONE: (978) 475-4896

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
A Stock Company
1408 North Westshore Blvd., Suite 900, Tampa, Florida 33607
(612) 371-1111 *www.oldrepublictitle.com*

By _____ President

Authorized Officer or Agent

Attest _____ Secretary

Transaction Identification Data, for which the Company assumes no liability as set forth in Condition 9.d.:

Issuing Agent: **Touchstone Closing & Escrow, LLC**

Issuing Office: **27 Main Street, Andover MA 01810**

Issuing Office's ALTA® Registry ID: **1140235**

Issuing Office File Number: **2024-4067**

Property Address: **9-11 Mechanic Street, Dover, NH 03820**

SCHEDULE A

OWNERS POLICY

Name and Address of Title Insurance Company: Old Republic National Title Insurance
1408 North Westshore Boulevard, Suite 900, Tampa, Florida 33607

Policy Number: **OY-08354100**

Amount of Insurance: **$220,000.00**

Date of Policy: **December 4, 2024 at 1:49 PM**

1. The Insured is: **Benjamin T. Legare, Trustee of the 9-11 Mechanic Street Realty Trust**
2. The estate or interest in the Land insured by this policy is: **Fee Simple**
3. The Title is vested in: **Benjamin T. Legare, Trustee of the 9-11 Mechanic Street Realty Trust**
4. The Land is described as follows:

   That certain parcel of land, with the buildings and improvements thereon, situated at **9-11 Mechanic Street, in the City/Town of Dover, County of Strafford, and State of New Hampshire, being more particularly described in the Exhibit A attached hereto and made a part hereof.**
5. This policy incorporates by reference the endorsements designated below, adopted by the American Land Title Association as of the Date of Policy:
   None
6. The Land is encumbered by the Mortgage and its assignments, if any, described as follows:
   Mortgage from Benjamin T. Legare, Trustee of the 9-11 Mechanic Street Realty Trust to MICHAEL CASEY and ROSELLIE CASEY, dated December 4, 2024, in the original principal amount of $100,000.00 as recorded with Strafford County Registry of Deeds on December 4, 2024 at Book 5230, Page 285.

Countersigned:

By: _____
AUTHORIZED OFFICER OR AGENT

SCHEDULE B

OWNERS POLICY

Policy Number: OY-08354100

EXCEPTIONS FROM COVERAGE

Some historical land records contain Discriminatory Covenants that are illegal and unenforceable by law. This policy treats any Discriminatory Covenant in a document referenced in Schedule B as if each Discriminatory Covenant is redacted, repudiated, removed, and not republished or recirculated. Only the remaining provisions of the document are excepted from coverage.

This policy does not insure against loss or damage and the Company will not pay costs, attorneys' fees, or expenses resulting from the terms and conditions of any lease or easement identified in Schedule A, and the following matters:

a. The dower, curtesy, homestead, community property, or other statutory marital rights, if any, of the spouse of the individual insured.

b. The mortgage, if any, referred to in Item 6 of Schedule A hereof.

1. Any facts, rights, interest, or claims of persons or parties in possession, which are not shown by the public records.

2. Any encroachment, encumbrance, violation, variation, discrepancy, conflict in boundary lines, shortage in area, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land, and which are not shown by the public records.

3. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. Liens for real estate taxes for the current fiscal year, which are not yet due and payable, and liens for any unpaid municipal assessments, water, and sewer charges, if any.

5. Title to and rights of the public and others entitled thereto in and to any portion of the insured premises located within the bounds of adjacent streets, roads and ways.

6. IF THE INSURED PREMISES IS A CONDOMINIUM UNIT: Covenants, conditions, restrictions, reservations, easements, liens for common area assessments, options, powers of attorney and limitations on title, created by or set forth or described in the condominium law of the State in which the unit is located, the Unit Deed, the Master Deed or Declaration of Condominium, in the related By-Laws, in the Declaration of Trust, Site Plans and Floor Plans as duly recorded in the appropriate land records as the same may have been lawfully amended, and in any instruments creating the estate or interest insured by this policy.

7. Subject to Right to use driveway now located on 5-7 Mechanic Street described and recorded with the Strafford Registry of Deeds in deed Book 2504, Page 122.

Exhibit A

A certain parcel or tract of land, with the buildings thereon, situate in Dover, County of Strafford and State of New Hampshire on the easterly side of Mechanic Street and bounded on the northerly side by the land of Elizabeth Littlefield, on the easterly side by the land of one David W. Herritt, on the southerly side by land of said Elizabeth Littlefield, and on the westerly side by said Mechanic Street.

Together with the right to use the driveway as now located on 5-7 Mechanic Street (which property is more particularly described in the deed of George Mitropoulos and Stella Mitropoulos to Sawalok Dennett and Brian Dennett, dated May 1, 2002, recorded in said Strafford County Registry of Deeds at Book 2504, Page 122, for ingress and egress to the herein-described premises.

EVERSOURCE ENERGY

1700 Lafayette Road
Portsmouth, NH 03801

Trevor S Emmons
603-332-7515
Trevor.emmons@eversource.com

Robert Ciampitti, Jr. Esq.
9-11 Mechanic Street Realty Trust
C/O 11A Liberty Street
Newburyport, MA 01950

Dear Attorney, Ciampitti:

I am responding to your request to confirm the availability of electric service for the proposed 9-11 Mechanic Street, Dover, New Hampshire (AKA: Mechanic Street Landing) project being constructed for/by 9-11 Mechanic Street Realty Trust.

The proposed project consists of a 5-story building with 9 residential units plus 2 ground floor commercial units, approximately 8,750 s/f of Gross Floor Area (including 697sf of retail/office space at the ground level) and parking on grade to the rear of the building. The proposed development will be constructed at 9-11 Mechanic Street, Dover, NH.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The service is shown on attached marked up Utility Plan by Ranger Engineering (CS 1601). The proposed building service will be fed from determined by Eversource Engineering as depicted on said Ranger Engineering Utility Plan (CS 1601). The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "UTILITY PLAN CS1601" (9-11 Mechanic Street, Dover, NH)" dated 10-21-2025, shows transformer locations to service your proposed project as well as the Plan Notes "Underground Primary Electric Line," depicting where the Developer plans to relocate this service between poles underground.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-332-7515

Respectfully.

Trevor Emmons
NH Eastern Regional Engineer, Eversource
cc: (via e-mail)
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

Breezeline 21 Jarvis Ave Rochester, NH 03868

Date: February 20, 2026

Robert Ciampitti, Jr., Esq. 9-11 Mechanic Street Realty Trust C/O 11A Liberty Street Newburyport, MA 01950

RE: Fiber Service Availability – 9-11 Mechanic Street, Dover, NH (Mechanic Street Landing)

Dear Attorney Ciampitti,

I am writing in response to your request to confirm the availability of Fiber service for the proposed **Mechanic Street Landing** project, located at 9-11 Mechanic Street, Dover, New Hampshire.

This letter serves as formal confirmation that Breezeline maintains sufficient capacity in the local area to provide service to this development.

Breezeline has viewed the drawing titled "UTILITY PLAN CS1601" (9-11 Mechanic Street, Dover,NH) dated 10-21-2025. Breezeline agrees to relocate there infrastructure from aerial to underground provided such work is performed in compliance with City of Dover infrastructural specifications.

Please note that the developer will bear the costs associated with extending services to the site, as well as any infrastructure improvements required to meet the City of Dover's specifications, unless a separate agreement is reached.

If you require further information or additional assistance as the project progresses, please do not hesitate to contact me directly.

Sincerely,

Glenn Patch
Construction Manager
Market Expansion
P: 603.803.3426
C: 603.507.2273
E: gpatch@breezeline.com

Breezeline.com
21 Jarvis Ave Rochester, NH 03868

COMCAST

Date: February 24, 2026

Robert Ciampitti, Jr., Esq. 9-11 Mechanic Street Realty Trust C/O **1** lA Liberty Street

Newburyport, MA 01950

RE: Fiber Service Availability-9-11 Mechanic Street, Dover, NH (Mechanic Street Landing)

Dear Attorney Ciampitti,

I am writing in response to your request to confirm the availability of Fiber service for the proposed **Mechanic Street Landing** project, located at 9-1 1 Mechanic Street, Dover, New Hampshire.

This letter serves as formal confirmation that Comcast maintains sufficient capacity in the local area to provide service to this development.

Comcast has viewed the drawing titled "UTILITY PLAN CS1601" (9-11 Mechanic Street, Dover,NH) dated 10-21-2025. Comcast agrees to relocate there infrastructure from aerial to underground provided such work is performed in compliance with City of Dover infrastructural specifications.

Please note that the developer will bear the costs associated with extending services to the site, as well as any infrastructure improvements required to meet the City of Dover's specifications, unless a separate agreement is reached.

If you require further information or additional assistance as the project progresses, please do

not hesitate to contact me directly.

Sincerely,

Jesse Bibeau

Specialist 2

Comcast Construction

978-501-4498

Jesse_Bibeau@cable.comcast.com

Pipe Stability Calculations
16-18 Mechanic Street, Dover, NH
Subsurface Infiltration System
March 17, 2026

Conditions

Pipe Diameter = 8"
Pipe Material = Sch 40 PVC
Pipe Depth = 12"
Pipe Embedment = Crushed Stone

Equation

$$\% \text{ deflection} = \frac{0.1(P+W')\ 100}{0.149(PS) + 0.061E'}$$

Where

W' = live load – see table 2 = 12.50 for H20 with 1 foot of cover

P= Prism Load – see Table 3 = 0.90 for 1' of cover for unit weight of 130 Lbs / CF

PS = Pipe Stiffness – See Table 4 = 104 for 8" sch 40 PVC

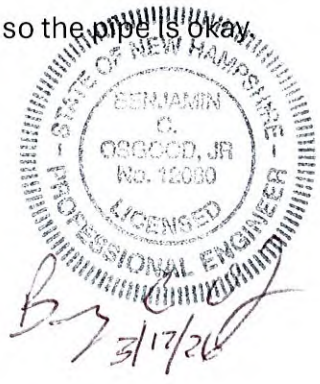
E' = Modulus of Soil Reaction – See table 5 = 3,000 for slightly compacted crushed stone

Calculation

$$\% \text{ Deflection} = \frac{0.1(0.9 + 12.5)\ 100}{0.149(104) + 0.016(3000)} = 2.11\ \%$$

The maximum allowable pipe deflection is 7.5% and generally it should be less than 5%.

The 2.11% deflection is less than the 5% optimum maximum allowed so the pipe is okay.



JM Eagle
Building essentials for a better tomorrow™

TECHNICAL BULLETIN

JANUARY 2009

DEPTH OF BURIAL FOR PVC PIPE

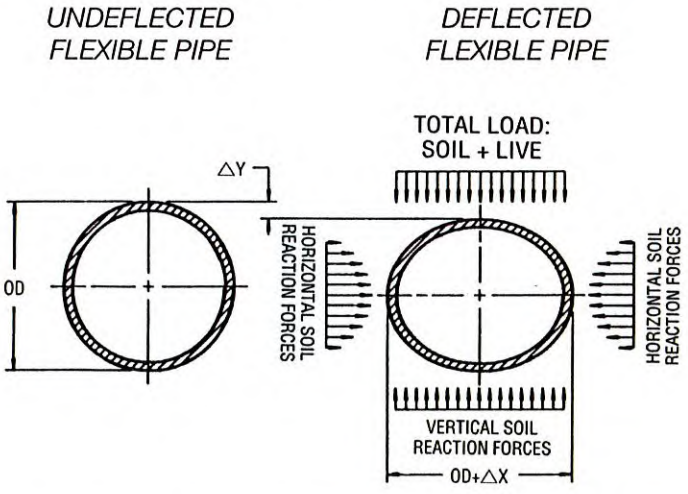
FLEXIBLE PIPE THEORY

PVC pipes are classified as flexible pipes. They flex without breaking when loaded externally from soil weight and vehicular traffic. Rigid pipes, such as those made of concrete or clay, do not perceptibly flex when loaded and experience wall crushing when their load limit is reached. This mode of failure for rigid pipes has given rise to the terms "crush strength" and "D-Load", but these terms do not apply to PVC pipes.

When a PVC pipe encounters external loading, its diameter will begin to deflect, meaning its sides will move outward and slightly downward. If the pipe is buried in supportive soil, the stiffness of the soil will resist the deflection (see Figure 1). This action and reaction is the key to how a PVC pipe carries external loads.

Figure 1

FLEXIBLE PIPE DEFLECTION



The combination of the embedment soil stiffness and the pipe stiffness form a system that acts to support external loads. By itself, the pipe may not support much weight, but the soil/pipe system can have tremendous load capacity.

A PVC pipe's resistance to deflection in an unburied state is measured by its "pipe stiffness". Pipe stiffness is usually less significant than soil stiffness in PVC pipe installations, but in general, a higher pipe stiffness results in a higher load capacity.

Soil stiffness is most affected by the level of compaction achieved, and to a lesser extent by the soil type. Soil stiffness values for various conditions and soil types have been derived through extensive testing.

CALCULATING ALLOWABLE BURIAL DEPTH

Because a PVC pipe flexes rather than breaks when loaded, the failure criterion is not fracture strength. Instead, a limit is placed on pipe diametric deflection. This limit is expressed in terms of percentage reduction in diameter due to external loading. Industry recommendations for maximum deflection are shown in Table 1.

Table 1

MAXIMUM RECOMMENDED DIAMETRIC DEFLECTION

PVC Pressure Pipes	**5%**
PVC Sewer / Drain Pipes	**7½%**
PVC Electrical Conduits	**5%**

A "failure" of a flexible pipe system from external loading is defined by the point at which the top of the pipe begins to experience inverse curvature. Research has shown this point occurs at a minimum of 30% deflection; recommendations for maximum deflection therefore incorporate safety factors of 4:1 or 6:1.

In order to determine the suitability of a particular burial depth, a system designer estimates the pipe deflection through the use of an empirical equation called the "Modified Iowa Equation". A simplified, conservative version of the equation is presented below:

MODIFIED IOWA EQUATION

$$\% \text{ DEFLECTION} = \frac{0.1\,(W' + P)\,100}{0.149\,(PS) + 0.061E'}$$

Where:

% DEFLECTION = predicted percentage of diametric deflection.

W' = Live Load (lbs/in^2): pressure transmitted to the pipe from traffic on the ground surface. Live Load values are found in Table 2.

P = Prism Load (lbs/in^2): pressure acting on the pipe from the weight of the soil column above the pipe (also called "Dead Load"). Prism Load values are found in Table 3.

PS = Pipe Stiffness (lbs/in^2): a flexible pipe's resistance to deflection in an unburied state. Pipe Stiffness values for JM Eagle products are found in Table 4.

E' = Modulus of Soil Reaction (lbs/in^2): stiffness of the embedment soil. Values for Modulus of Soil Reaction are found in Table 5.

Table 2

LIVE LOADS ON PVC PIPE			
HEIGHT OF COVER (FT)	LIVE LOAD TRANSFERRED TO PIPE, (LBS/IN^2)		
	HIGHWAY H2O[1]	RAILWAY E80[2]	AIRPORT[3]
1	12.50		
2	5.56	26.39	13.14
3	4.17	23.61	12.28
4	2.78	18.40	11.27
5	1.74	16.67	10.09
6	1.39	15.63	8.79
7	1.22	12.15	7.85
8	0.69	11.11	6.93
10	*	7.64	6.09
12	*	5.56	4.76
14	*	4.17	3.06
16	*	3.47	2.29
18	*	2.78	1.91
20	*	2.08	1.53
22	*	1.91	1.14
24	*	1.74	1.05
26	*	1.39	*
28	*	1.04	*
30	*	0.69	*
35	*	*	*
40	*	*	*

[1] Simulates 20 ton truck traffic + impact.
[2] Simulates 80,000 lb/ft railway load + impact.
[3] 180,000 lbs. dual tandem gear assembly; 26-inch spacing between tires and 66-inch center-to-center spacing between fore and aft tires under a rigid pavement 12 inches thick + impact.
* Negligible live load influence.

Table 3

PRISM LOAD SOIL PRESSURE (LBS/IN2)					
HEIGHT OF COVER (FT)	SOIL UNIT WEIGHT (LBS/FT3)				
	100	110	120	125	130
1	0.69	0.76	0.83	0.87	0.90
2	1.39	1.53	1.67	1.74	1.81
3	2.08	2.29	2.50	2.60	2.71
4	2.78	3.06	3.33	3.47	3.61
5	3.47	3.82	4.17	4.34	4.51
6	4.17	4.58	5.00	5.21	5.42
7	4.86	5.35	5.83	6.08	6.32
8	5.56	6.11	6.67	6.94	7.22
9	6.25	6.88	7.50	7.81	8.13
10	6.94	7.64	8.33	8.68	9.03
11	7.64	8.40	9.17	9.55	9.93
12	8.33	9.17	10.00	10.42	10.83
13	9.03	9.93	10.83	11.28	11.74
14	9.72	10.69	11.67	12.15	12.64
15	10.42	11.46	12.50	13.02	13.54
16	11.11	12.22	13.33	13.89	14.44
17	11.81	12.99	14.17	14.76	15.35
18	12.50	13.75	15.00	15.63	16.25
19	13.19	14.51	15.83	16.49	17.15
20	13.89	15.28	16.67	17.36	18.06
21	14.58	16.04	17.50	18.23	18.96
22	15.28	16.81	18.33	19.10	19.86
23	15.97	17.57	19.17	19.97	20.76
24	16.67	18.33	20.00	20.83	21.67
25	17.36	19.10	20.83	21.70	22.57
26	18.06	19.86	21.67	22.57	23.47
27	18.75	20.63	22.50	23.44	24.38
28	19.44	21.39	23.33	24.31	25.28
29	20.14	22.15	24.17	25.17	26.18
30	20.83	22.92	25.00	26.04	27.08
31	21.53	23.68	25.83	26.91	27.99
32	22.22	24.44	26.67	27.78	28.89
33	22.92	25.21	27.50	28.65	29.79
34	23.61	25.97	28.33	29.51	30.69
35	24.31	26.74	29.17	30.38	31.60
36	25.00	27.50	30.00	31.25	32.50
37	25.69	28.26	31.67	32.12	33.40
38	26.39	29.03	32.50	32.99	34.31
39	27.08	29.79	33.33	33.85	35.21
40	27.78	30.56	34.17	34.72	36.11
41	28.47	31.32	35.00	35.59	37.01
42	29.17	32.08	35.83	36.46	37.92
43	29.86	32.85	36.67	37.33	38.82
44	30.56	33.61	37.50	38.19	39.72
45	31.25	34.38	38.33	39.06	40.63
46	31.94	35.14	39.17	39.93	41.53
47	32.64	35.90	40.00	40.80	42.43
48	33.33	36.67	41.67	41.67	43.33
49	34.03	37.43	42.53	42.53	44.24
50	34.72	38.19	43.40	43.40	45.14

Table 5

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E' (FOR INITIAL FLEXIBLE PIPE DEFLECTION)					
	PIPE BEDDING MATERIALS	E' FOR DEGREE OF COMPACTION OF PIPE ZONE BACKFILL (PSI)			
SOIL CLASS	SOIL TYPE (Unified Classification System[a])	Loose	Slight < 85% Proctor, < 40% relative density	Moderate 85% - 95% Proctor, 40% - 70% relative density	High > 95% Proctor, > 70% relative density
Class V	Fine-grained Soils (LL>50)[b] Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Class IV	Fine-grained Soils (LL < 50)Soils with medium to no plasticity CL, ML,ML-CL, with less than 25% coarse-grained particles	50	200	400	1,000
Class III	Fine-grained Soils (LL < 50)Soils with medium to no plasticity CL, ML,ML-CL, with more than 25% coarse-grained particles 1004001,0002,000 Coarse-grained Soils with Fines GM, GC, SM, SCC contains more than 12% fines	100	400	1,000	2,000
Class II	Coarse-grained Soils with Little or No Fines GW, GP, SW, SPC contains less than 12% fines	200	1,000	2,000	3,000
Class I	Crushed Rock	1,000	3,000	3,000	3,000
	Accuracy in Terms of Percentage Deflection	±2	±2	±1	±0.5

[a] ASTM Designation D 2487, USBR Designation E-3
[b] LL = Liquid limit
[c] Or any borderline soil beginning with one of these symbols (i.e. GM-GC, GC-SC)
[d] For ± 1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%.

Note: Values applicable only for fills less than 50ft (15m). Table does not include any safety factor. For use in predicting initial deflections only; appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1psi = 6.9kN/m^2.

Source: "Soil Reaction for Buried Flexible Pipe" by Amster K. Howard, U.S. Bureau of Reclamation, Denver Colorado. Reprinted with permission from American Society of Civil Engineers Journal of Geotechnical Engineering Division, January 1977, pp. 33-43.

A pipe system designer uses this equation to predict PVC pipe deflection given type of PVC pipe, burial depth, soil density, type of traffic, type of embedments oil, and compaction density of embedment soil. The designer then compares the predicted deflection to there commended maximum deflection in Table 1 to check if the burial depth is appropriate.

Example 1: Shallow Burial

A pipe system designer is interested in using ASTM D3034 SDR 35 PVC sewer pipe in a shallow-burial installation with the following characteristics: -1 foot burial depth:

- 120 pounds per cubic foot soil density
- H20 highway traffic
- sand embedment material
- 90% Proctor density embedment soil compaction

$$\% \text{ DEFLECTION} = \frac{0.1\ (P+W^1)\ 100}{0.149\ (PS) + 0.061E^1}$$

$$\% \text{ DEFLECTION} = \frac{0.1\ (0.83 + 12.5)\ 100}{0.149\ (46) + 0.061(2{,}000)}$$

$$\% \text{ DEFLECTION} = 1.0 \pm 1\%$$

The maximum predicted deflection is 2.0%, well below the maximum recommended for PVC sewer pipe in Table 1 of 7½%.

Minimum Burial Depth: The minimum recommended burial depth for PVC pipes beneath a highway is one foot. This recommendation assumes proper specification of embedment materials and compaction, and proper installation.

Example 2: Deep Burial

A pipe system designer is interested in using ASTM D3034 SDR 35 PVC sewer pipe in a deep-burial installation with the following characteristics:

- 45 foot burial depth
- 120 pounds per cubic foot soil density
- H20 highway traffic (Note: Live loads are negligible for deep burials)
- sand embedment material
- 90% Proctor density embedment soil compaction

$$\% \text{ DEFLECTION} = \frac{0.1\ (P+W')\ 100}{0.149\ (PS) + 0.061E'}$$

$$\% \text{ DEFLECTION} = \frac{0.1\ (37.5 + 0)\ 100}{0.149\ (46) + 0.061(2{,}000)}$$

$$\% \text{ DEFLECTION} = 1.0 \pm 1\%$$

The maximum predicted deflection is 3.9%, well below the maximum recommended for PVC sewer pipe in Table 1 of 7½%.

For more information, see the following JM Eagle Technical Bulletins:

- PVC Pipe Trench Construction
- Deflection Testing of PVC Sewer Pipe
- PVC Sewer and Drain Pipe Burial Depth Charts
- PVC Water Pipe Burial Depth Charts

Table 4

PVC PIPE STIFFNESS' (PS)		
PIP, WELL CASING, AND IPSSDR WATER PIPES		
PRESSURE RATING (PSI)	**SDR**	**PIPE STIFFNESS (PSI)**
63	64	7
80	51	14
100	41	28
125	32.5	57
160	26	115
200	21	224
315	13.5	916
PVC SEWER / DRAIN PIPES		
SDR 35, PWRIB		
All have a minimum pipe stiffness of 46 psi.SDR 26 has a minimum pipe stiffness of 115 psi.		
ASTM D2729 - DRAIN LINE		
SIZE (INCHES)	**PIPE STIFFNESS (PSI)**	
3	19	
4	11	
6	3	
AWWA C900 WATER PIPES		
PRESSURE CLASS (PSI)	**DR**	**PIPE STIFFNESS (PSI)**
100	25	129
150	18	364
200	14	815
AWWA C905 WATER PIPES		
PRESSURE RATING (PSI)	**DR**	**PIPE STIFFNESS (PSI)**
165	25	129
235	18	364
SCHEDULE 40 COEXCEL DWV PIPE		
SIZE (INCHES)	**PIPE STIFFNESS (PSI)**	
1½	600	
2	300	
3	300	
4	200	
6	120	

PVC PIPE STIFFNESS' (PS)	
PVC ELECTRICAL UTILITY DUCTS	
TYPE	**PIPE STIFFNESS (PSI)**
EB-20	20
EB-35	35
DB-60	60
DB-100	100
DB-120	120
WATER PIPE, WELL CASING, AND ELECTRICAL CONDUITS	
SCHEDULE 40	
SIZE (INCHES)	**PIPE STIFFNESS (PSI)**
½	5,928
¾	3,136
1	2,547
1 ¼	1,397
1 ½	1,008
2	596
2 ½	784
3	509
4	307
6	154
8	104
10	78
12	64
SCHEDULE 80	
SIZE (INCHES)	**PIPE STIFFNESS (PSI)**
½	17,066
¾	9,078
1	6,995
1 ¼	3,930
1 ½	2,911
2	1,846
2 ½	2,141
3	1,473
4	949
6	607
8	417
10	356
12	330

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STORMWATER MANAGEMENT REPORT

9-11 Mechanic Street Dover, NH 03820

ASSESSORS MAP 24 PARCEL 101

April 3, 2025
Revised October 23, 2025
Revised January 29, 2026

Submitted to:

City of Dover, NH
288 Central Ave.
Dover, NH 03820

Prepared for:

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STORMWATER MANAGEMENT REPORT
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III. INTRODUCTION

In accordance with City of Dover Stormwater Management requirements and the New Hampshire Stormwater Manual, Ranger Engineering Group (Ranger) has prepared a comprehensive Stormwater Management Plan for submittal to the Town of Dover, NH Planning Board on behalf of 9-11 Mechanic Street Realty Trust in support of an *Application for a Site Plan Review* for the proposed development of a 5 story 9,645 square foot mixed use retail/residential building at 9-11 Mechanic Street, Dover, NH.

The proposed site improvements include construction of a 5-story mixed use building with 8 - 2 bedroom apartment units on the upper 4 floors, and commercial space and one studio apartment on the first floor. Proposed site improvements include new sidewalks and front entry walkways, 8 new parking spaces, landscaping, and stormwater controls.

The proposed Stormwater Management System (SMS) incorporates structural and non-structural BMPs to provide stormwater peak flow mitigation, quality treatment, infiltration, and conveyance. The SMS includes roof drains, drain manholes, underground piping, a subsurface infiltration system, and a long term Operation and Maintenance Plan.

IV. EXISTING CONDITIONS

The project site consists of an existing lot with a duplex dwelling and one outbuilding also used as a dwelling (Assessors Map 24 Lot 102) fronting on Mechanic Street in Dover, New Hampshire (see Dwg. CS0201). The site abuts a mixed-use commercial/residential property on the north (left side), a multifamily development on the east (rear) and a duplex dwelling on the south (right side). A public sidewalk is located within the roadway right of way along the frontage of the property.

The lot has 0.16 Acres of Land. The existing duplex dwelling sits approximately 12’ back from the street line with a driveway on the left side of the dwelling to gain access to the rear of the property. The property also has the right to use the existing driveway located on the adjacent lot to the south (right side) for access to the back. The 2-story outbuilding is in the north corner of the property. The front 30 feet of the property along with some of the existing roof slopes towards the road. The remaining portion of the lot slopes to the rear toward the abutting multifamily development.

The property is serviced by municipal sewer and water. Local utility companies supply electric, telephone, fiber, and cable services.

V. PROPOSED CONDITIONS

The Applicant proposes constructing a 5-story mixed use commercial/residential building with 2 commercial units and one residential unit on the first floor and 2 additional residential units on each of the upper 4 floors. Access will be through the existing driveway easement on the adjacent lot to the right side of the proposed building to a paved parking lot in the rear with 8 parking spaces.

Stormwater will be collected through roof drain piping and a catch basin to be piped to the municipal drain system located within Mechanic Street. The system will reduce runoff flowing to the abutting property in the rear and infiltration will be used to reduce the runoff volume.

The proposed development will be serviced by municipal water, sewer, underground electric, gas, cable TV, and telephone.

VI. STORMWATER DESIGN

This project has an area of disturbance of approximately 8000 square feet and creates less than 3000 square feet of new impervious area and is therefore subject only to the Minimum Protections and Management Standards outlined in the Dover Site Review Regulations.

The proposed stormwater system is designed to improve the drainage patterns in the developed conditions versus the pre-development conditions. Peak rates of flow will be mitigated onsite to the maximum extent practicable to minimize or eliminate impacts to downstream areas. The majority of stormwater presently flows off site to the east down a steep embankment which ends at a retaining wall for a multifamily development. In the post development condition, the stormwater is directed through a pipe system to the municipal drainage system.

Sheet Flow

Stormwater flow from the paved parking area is designed to sheet flow to the rear of the property to a small landscape area that will contain a subsurface infiltration area.

Closed Drainage Systems

The proposed closed drainage system consists of roof drain piping and a deep sump catch basin inlet and piping that conveys stormwater runoff from the roof and paved parking area to a new manhole which will be installed over an existing municipal drain pipe that is located within Mechanic Street. The catch basin is located adjacent to the subsurface infiltration system and will capture and pre-treat runoff from the paved surfaces

Buried Detention System

Runoff from the new paved surfaces will be directed to a buried detention area. The buried detention area has been designed to hold and treat a volume of water to provide the required stormwater treatment and infiltration, and provide volume reduction and detention of stormwater so that post development runoff volume from the entire site will be lower than in the pre developed condition. The peak rate of runoff will be slightly higher in the 50 year storm, but will be reduced in the 2, 10 and 25 year storms. Stormwater will be rerouted from the back of the lot to the front which will result in a much-improved runoff situation at the rear of the property where presently it flows down a steep embankment towards a retaining wall on the property below.

Overflow from the buried detention system will be captured through an outlet structure with a horizontal orifice opening set above the level of the buried system and an 8” outlet pipe that connects to the municipal drainage system in front of the property. The 8” culvert has the capacity to convey the overflow in all storms.

VII. SITE PARAMETERS

Wetland Resource Areas
There are no wetland resource areas on the property.

Flood Zone Classification
According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Strafford County, New Hampshire, Community Panel 33017C0330E, effective date September 30, 2015, the site is located within Zone X which is above the 100 year flood plain.

Estimated Habitat for Rare Wildlife and Rare Species
This property is not in a location that would contain habitat for rare wildlife and rare species

Soil Classification
According to the Soil Survey of Stratford County, New Hampshire, prepared by the US Department of Agriculture, Soil Conservation Service, underlying soils located within the site consist primarily of Suffield Silt Loam. Soil testing has been performed in the area of the subsurface system.

Table 1
Hydrologic Soil Group Ratings

Map Unit Symbol	Map Unit Name	Rating
SfC	Suffield Silt Loam, 8 – 15% slopes	C/D
SfD	Suffield Silt Loam, 15 – 35% slopes	C/D

The on-site soils consist of series, described by NRCS, as follows:

> **Suffield Silt Loam:** The Suffield series consists of very deep, well drained soils formed in lacustrine or marine sediments. They are mainly on gently sloping to very steep dissected plains. They typically have silt loam A and B horizons over a silty clay 2C horizon. Permeability is moderate in the solum and slow or very slow in the substratum.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.
Per the soil survey, the general characteristics of the four (4) hydrologic soil groups are as follows:

> Group A – Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
>
> Group B – Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C – Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D – Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Subsurface Investigation

A hand excavated test pit investigation was completed on Monday October 6. The test pit log and location is included on the existing condition sheet. Although the soil is fine sand, this design is based upon the soil conservation service mapping and infiltration rates have been based upon the requirements of ENV-WQ 1504.14©

The Infiltration rate referenced in the Society of Soil Scientists of Northern New England Ksat Values for NH Soils is between 0.6 and 2 inches per hour. This is for the upper layer of soil to depths of approximately 40 inches. The lower layers of soil are considered impervious with negligent infiltration rates. A conservative infiltration rate of 1.0 in/hr was used.

The bottom of the infiltration system will be located 3' above ground water which places it 18" below the existing ground surface, however, it will be located within the existing fill layer. A note has been added to the plan indicating that any fill located below the bottom of the system will need to be removed and replaced with coarse sand.

VIII. DRAINAGE ANALYSIS

Methodology

The comparative hydrologic analysis of pre-development conditions to post-development conditions was performed using the Soil Conservation Service, Technical Release 20 (TR-20). The 2, 10, 25 and 50-year storm events were modeled for a 24-hour, Type III storm using HydroCAD version 10.00. HydroCAD calculations for pre-and post-development conditions are include in the Appendices.

The following rainfall amounts were utilized for each design storm event.

2-year Frequency Storm:	3.15 inches per 24-hours
10-year Frequency Storm:	4.75 inches per 24-hours
25-year Frequency Storm:	6.01 inches per 24-hours
50-year Frequency Storm:	7.18 inches per 24-hours

Existing Watershed

The existing property is located on the north side of mechanic street and is a 7,169 sf property with a duplex house, detached living unit, and paved driveways. The house sits close to the street and runoff from the roof and front yard areas flow to the street drainage system. Runoff from the rear portion of the property flows towards the back of the property. The existing catchment areas and drainage runoff flow patterns associated with the site are illustrated on the attached Pre-Development Watershed Plan (Dwg. CS9201). The drainage patterns will be maintained under post-development conditions.

For the purposes of the hydrologic analyses, the existing site has been delineated into two (2) existing catchment areas which flow to two (2) design points:

- Design Point #1 (DP1) – Flow to street drainage

- Design Point #2 (DP2) – Flow to rear of property

The drainage is primarily sheet flow and is shown on the Pre-Development Watershed Plan (Dwg. CS9301) and can be described as follows

Catchment E1
Catchment EX1 includes roof runoff and the areas at the front of the property. The area is mainly impervious area.

Catchment E1
Catchment EX1 includes roof runoff, paved areas, and some grass areas that flow to the rear of the property.

Proposed Watershed
The proposed development will include sheet flow and a closed drainage system which will collect and convey stormwater runoff to the municipal drainage system located at the front of the property. Post-Development Watershed Plan (Dwg. CS9301) and can be described as follows

Catchment P1
Catchment P1 includes flow from the roof and developed areas at the front of the site. Runoff from this catchment flows through sheet flow or the roof drain system to the municipal drain system. DP1

Catchment P2
Catchment P2 includes flow from the parking areas and grass areas on the rear portion of the site. This flow travels through the subsurface infiltration system which overflows to a pipe which is routed to the municipal drain system. DP1

Catchment P3
Catchment P3 includes flow from the area between the retaining wall and the rear property line and an area of driveway pavement located on the adjacent lot that flows to DP2

IX. SUMMARY OF PEAK DISCHARGE RATES

The estimation of flow rates and volumes were calculated utilizing *HydroCad* stormwater modeling software. The methodology is SCS TR-20, Type III, 24-hour rainfalls (1, 2, 10, and 50-year frequency storm events). Supporting calculations are included in the Appendix.

FLOW RATE TABLES

Point of Analysis	Storm	Pre-Development Rate (CFS)	Post-Development Rate (CFS)
DP #1 (Flow To Street)	2-year	0.15	0.26
	10-year	0.25	0.47
	25-year	0.33	0.93
	50-year	0.40	1.42

Point of Analysis	Storm	Pre-Development Rate (CFS)	Post-Development Rate (CFS)
DP #2 (Flow To Rear)	2-year	0.28	0.05
	10-year	0.47	0.09
	25-year	0.62	0.12
	50-year	0.76	0.15

Point of Analysis	Storm	Pre-Development Rate (CFS)	Post-Development Rate (CFS)
OVERALL	2-year	0.43	0.32
	10-year	0.72	0.55
	25-year	1.95	1.04
	50-year	1.16	1.56

FLOW VOLUME TABLES

Point of Analysis	Storm	Pre-Development Rate (CF)	Post-Development Rate (CFS)
OVERALL	2-year	1,365	770
	10-year	2,347	1,609
	25-year	3,140	2,308
	50-year	3,884	2,979

X. STORMWATER STANDARDS AND WATER QUALITY PROTECTION

Based upon the size of this project it is subject to the Minimum Protections and Management Standards under the site review regulations. The project size does not require an AOT permit, nor does it require a notice under the EPA General Permit. Compliance with the requirements can be documented as follows:

Construction Phase Sediment Control
A detailed sedimentation and erosion control plan has been included as part of the plan set. Erosion and sediment control methods will include the use of perimeter controls consisting of silt fence or mulch waddles which will be installed prior to any work being performed. A construction entrance will be installed to prevent vehicle tracking and all slopes will be stabilized with loam and seed or erosion control blankets.

Once the site has been graded to sub grade the drainage system will be protected with inlet protection devices. Erosion control devices will be used as needed to prevent sediment laden runoff from traveling off site. The maximum open area allowed is greater than the work area proposed for this project.

Post Construction Water Quality Protection
There will be no new untreated outfalls proposed as part of this project; the stormwater management system is designed to provide the required minimal level of water quality treatment for all new discharges.

Stormwater is treated by directing flow from the parking lot runoff to a deep sump catch basin and a buried infiltration system located at the rear of the property. This area provides some runoff control and treatment of stormwater.

The required water quality volume can be calculated with the following equation.
WQV = (P)(Rv)(A) where P = 1” of rainfall, Rv is a unitless coefficient calculated as 0.5 + 0.9(I), where I is the percent impervious area draining to the site, and A is the total area

draining to the treatment practice. Since all of the parking lot impervious area drains to one buried treatment structure all of the treatment is accomplished in the one structure.

The water quality volume calculation is as follows.
Rv= 0.5+.9(I) AND I = 0.86 SO Rv = 0.68

WQV = 1”/12” x (0.68) x 5,027 sf = 286 cubic feet.

The subsurface bioretention area has a volume of 441 cubic feet below the lowest outlet which exceeds the required infiltration volume to provide treatment of the water quality volume.

Peak Rate Attenuation

There will be a slight increase to the impervious area as a result of this project. The drainage collection and conveyance system has been designed to direct stormwater in a manner that will provide the maximum benefit to abutting properties by eliminating runoff onto abutting properties and directing it to the municipal drainage system. Pre and post-development watershed analyses of the drainage systems were performed for the 2, 10, 25, and 50-year storms. A summary of peak discharge rates for the pre and post development conditions is presented above and the full Hydrocad printouts are included in the Appendix to this report. The results of the analysis indicate that post-development peak discharge rates will not increase from the pre-development peak discharge rates for the overall project with the exception of a.04 CFS increase in the 50 year storm.

Although the peak rate of runoff increases slightly in 1 storm, the volume of runoff decreases in every storm.

Groundwater Recharge

The buried detention system is designed to provide groundwater recharge and the total 441 cubic feet of stormwater will be infiltrated in each storm. The hydrograph table for the bioretention area is included in this report and demonstrates that the buried infiltration system will drain in 30 hours.

Additional requirements

- There are no surface waters, ponds, rivers, streams or wetlands located within proximity to this project, so the buffer zones have not been violated.

- Low impact development strategies, with the exception of the buried infiltration system, have not been implemented in this development. The project is located on a very small lot in a densely developed area which does not allow reductions in parking areas, etc. The project does reduce the overall volume of runoff from the site by providing infiltration in the buried detention area.

- Stormwater management devices will be installed and maintained per the requirements in the NH Stormwater Management Manual Volume 2.

- There will be no storage of chemicals, industrial waste, and/or storage tanks on this property.

- Salt and other deicing materials will not be stored on site. Snow storage is limited and would be stored where it can drain to the buried detention system area or removed from the site.

- The use of sodium chloride-based materials will be used sparingly if at all. Alternate ice melting materials will be used if available.

- Parking surfaces have been minimized and an existing public parking lot will be utilized for some of the required resident parking.

- Stormwater from all paved surfaces has been directed to the buried detention system. The roof of the new building is not routed to the buried detention system, however, the volume of untreated runoff from impervious surfaces has been greatly reduced.

Conformance with 153-14 Site development criteria

The existing site is a 7,169 square foot property and contains 4,556 square feet of impervious roof and paved area, including the off site paved area. In the proposed development there the lot area remains the same and the impervious area is raised to 6,568 square feet, an increase of 2,012 square feet. Under section 153-14 (2) the project is required to meet the minimum protection standards of the section.

153-14 (3) (a) Design Standards

(1) This project complies with the minimum EPA Phase II Stormwater Rules and the MS4 Permit
(2) This project does not infringe on the buffers for streams, wetlands, vernal pools.
(3) LID strategies are difficult to implement on a project of this scale in a downtown area. Infiltrating stormwater, although a requirement, is a form of LID. The project is also reducing it's parking footprint by leasing existing spaces in the Portland Ave Municipal lot.
(4) The stormwater management facilities have been designed in accordance with the NH stormwater Management Manual Volume 2.
(5) Fuels and chemicals will not be stored on site.
(6) Salt and deicing materials will not be stored on site. Small quantities will be stored in the building to use on building walkways as required. Snow storage is located so it will melt into the stormwater system and melting snow will not flow off site.
(7) Snow removal and deicing will be performed by a certified snow pro salt applicator.
(8) Parking surfaces have been minimized by reduced access drive width and reduced parking.
(9) Stormwater from the new paved surfaces is directed to the stormwater management system.

153-14 (3) (b) New development requirements

(1) Runoff from the new parking area is directed to a buried infiltration system that will provide 90% TSS removal and 55% Total Nitrogen and Phosphorus.
(2) Rainfall amounts are based on the estimates provided by the Northeast Regional Climate Center.
(3) The hydraulic analysis is based upon the 2, 10, 25, and 50 year storm events and as a whole, the rates of runoff from the site are reduced in all storms except the 50 year event.
(4) The runoff volumes are reduced in all storm events.
(5) Infiltration rates were determined in accordance with ENV Wq 1503.09

(6) The capacity of the 8” pipe connecting to the storm drain system is 1.1 CFS. In the 24 hour 50 year storm the flow is 0.78 CFS which is less than the pipe capacity. Flows in the smaller storms are less.
(7) Not Applicable
(8) The buried detention system is at least 3’ above the Estimated seasonal high ground water.
(9) Access easements are not required.
(10) Not applicable.

153-14 (3)(c) Stormwater for redevelopment projects

Not applicable to this project.

153-14 (3) (d) Erosion Control Standards

(1) The Erosion Control plan meets the minimum standards of the SNH Stormwater Management Manual Volume 3
(2) Not Applicable
(3) There is little vegetation to maintain, the site is 100% disturbed.
(4) The small size of the site requires that the entire site be disturbed to accommodate the demolition and construction.
(5) Not Applicable-off site runoff on to the property is minimal.
(6) Erosion control is shown where sediment laden runoff can leave the site. A construction entrance is shown.
(7) Not Applicable
(8) This requirement is noted on the plans.
(9) This requirement is noted on the plans
(10) This requirement is noted on the plans.
(11) There are no slopes greater than 3:1 on this property that will be disturbed. A retaining wall at the back of the property will protect the steep slope on the adjacent property.
(12) This is noted on the plan.
(13) Not Applicable.
(14) Not Applicable

153-14(3)(e) Installation and Construction Inspections

These requirements would be a condition of approval and will be implemented during construction.

153-14(3)(f) Stormwater management plan

(1) The items listed in this section have been included in this drainage report.
(2) This project is not large enough to be considered a new development that needs to meet all of the listed standards. The majority of the listed items in this section have been provided in this drainage report. There are items that are not applicable.

153-14(3)(g)

A long term Pollution Prevention Plan is included with this report. The plan details inspection requirements and contains an inspection form that can be submitted to the city. The plan also includes procedures for snow removal and deicing.

XI. STORMWATER POLLUTION PREVENTION PLANS AND MAINTENANCE

Construction Period Erosion and Sedimentation Control Plan:

The BMP's associated with the construction phase this project will be owned by the Applicant's Contractor, which will be responsible for inspection, operation, and maintenance. A more detailed SWPPP – per NPDES Phase 2 requirements – is to be kept on site, along with inspection logs. All details and plans required are included in the Site Plan set attached herewith.

1. The contractor is to install and maintain drainage facilities as shown on site plan prepared by Ranger Engineering Group. (Ranger), dated January 29, 2026.

2. Any dewatering requires coverage under the NPDES construction site dewatering general permit.

3. The contractor must install erosion control measures as shown on the plans and in the details prior to starting any other work on the site. Erosion control must be installed at every inlet structure (existing and proposed) and maintained for the duration of the project.

4. Erosion controls as shown on plans shall be inspected, repaired and/or maintained by the contractor daily and within 12 hours of each storm event.

5. Sediment deposits shall be removed when they reach a depth of 1/4 to 1/2 the height of the silt fence or sediment sock.

6. Sediment shall be contained within the construction site, away from drainage structures. Sediment reaching the public way shall be removed by street sweeping and not by flushing.

7. Stabilize slopes steeper than 3:1 (horizontal to vertical) with seed, secured geotextile fabric, or rock rip-rap as required to prevent erosion during construction.

8. Clean out catch basins, drain manholes and storm drain pipes after completion of construction.

9. Loam and seed all disturbed areas. Permanent seeding shall occur in the spring from late march through may and in late summer or early fall between August and October.

10. Dust shall be controlled at the site with mechanical water spraying as necessary and during extended dry periods.

11. Upon establishment of permanent vegetation over disturbed areas, remove and dispose of silt fence or wattles and stakes.

12. It is the responsibility of the contractor to maintain and supplement the specified sedimentation controls as necessary to prevent sedimentation of off-site areas and/or any regulated resource areas. Failure by the contractor to control erosion, pollution and/or siltation shall be cause for the owner to employ outside assistance or to use his

own means to provide the necessary corrective measure. The cost of such assistance plus project engineering costs will be the contractor's responsibility.

13. In addition to those locations shown on this plan and on the grading and drainage plans, erosion controls shall be installed at the following locations: toe of slope of embankment construction, toe of temporary earthwork stockpiles. Stockpile side slopes shall not exceed 2:1.

14. Erosion and sedimentation control shall be in compliance with New Hampshire Stormwater Manual

Long Term Pollution Prevention Plan

The owner/applicant is to be responsible for maintenance of all drainage structures in the project, including drain pipes. The owner shall place a deed restriction on the property outlining the requirements for stormwater system maintenance at the development.

Regular maintenance is to include the following:

1. Stormwater pipes shall be inspected for sediment buildup on a quarterly basis and cleaned as required.
2. The buried detention system shall be inspected to verify proper function and that the system drains. Silt buildup in the pipes shall be removed as required by jetting.
3. All graded slopes and lawn areas shall be inspected every spring for erosion. Upon discovery of any failure (ie. erosion, sloughing, rutting), loam and seed shall be put in place and nurtured.
4. Pavement surfaces shall be swept clean at least once per year, preferably in the spring just after snow melt. Sediment, sand, and debris shall be removed and disposed of in accordance with New Hampshire regulations.

WINTER SNOW AND ICE MAINTINANCE

1. Winter snow and ice maintenance shall be performed by a certified Snow Pro Salt Applicator.
2. A de-icing log shall be maintained for all de-icing activities on the property. A sample de-icing log is attached.
3. De-icing should follow the best management practices for storage and application of de-icing chemicals as outlined in the attached publications.

All inspection and maintenance log shall be kept in a logbook located at the facility and shall be provided to the New Hampshire DES upon request.

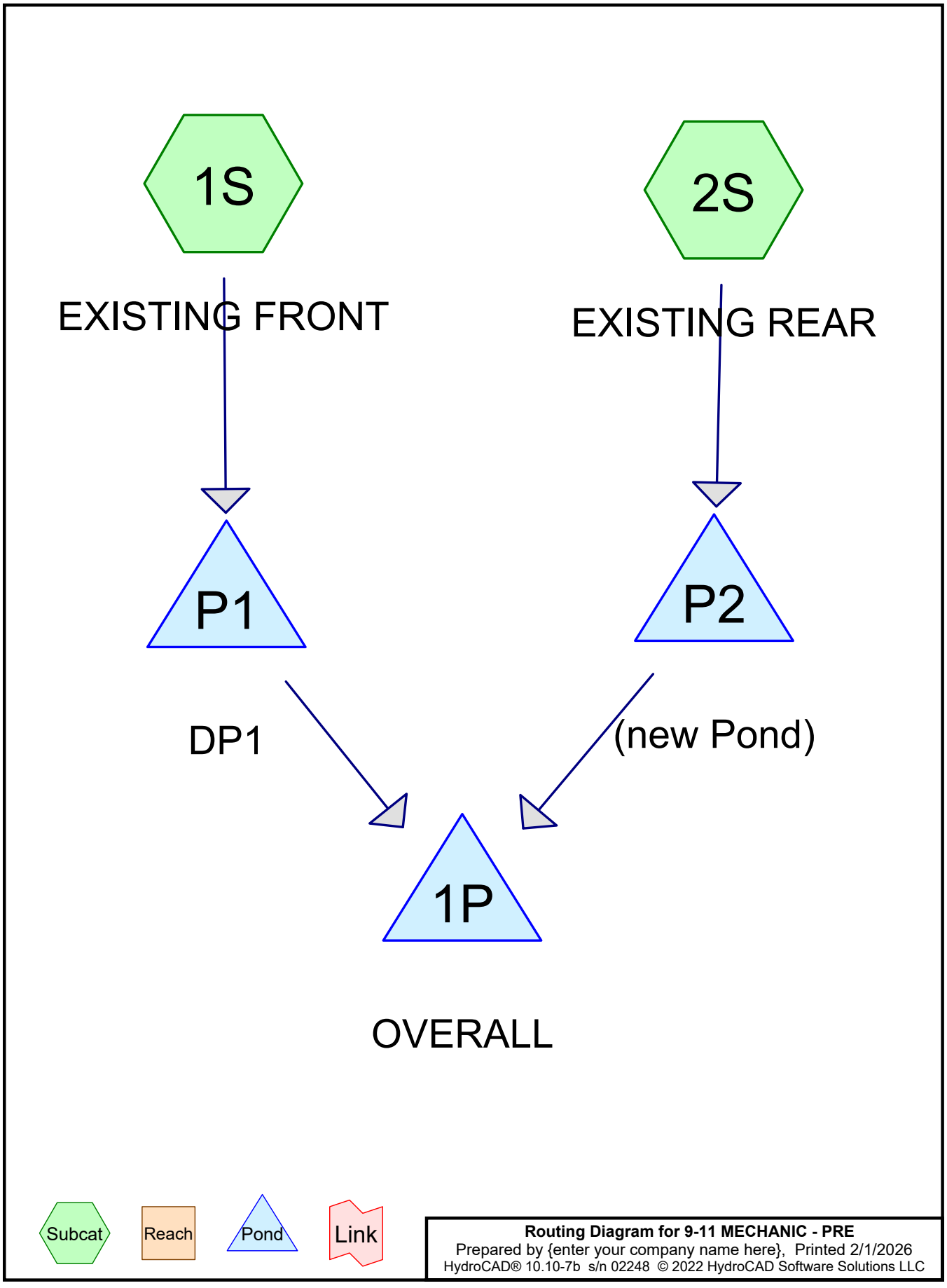
STORMWATER MANAGEMENT SYSTEM
Post-Development Inspection & Maintenance Log

BMP/System Component	Maintenance Required & Frequency	Date of Inspection	Inspection Inspector	Cleaning/Repair Needed (list items/comments)	Date of Cleaning/ Repair	Cleaning/ Repair Performed by
Pavement Sweeping	• Swept clean as required (i.e. visual noticeable build-up). A minimum of once per year, preferably just after snow melt.					
Drain Pipes	• Inspect annually for the evidence of structural damage, silt accumulation and improper function. • Clean pipes when sediment occupies more than 20% of pipe diameter.					
Buried detention Area	• Inspect annually for buildup of silt and clean as required.					

APPENDICES

HYDROCAD CALCULATIONS
STAGE STORAGE TABLES
PRECIPITATION FREQUENCY MAPS

PRE-DEVELOPMENT DRAINAGE



Routing Diagram for 9-11 MECHANIC - PRE
Prepared by {enter your company name here}, Printed 2/1/2026
HydroCAD® 10.10-7b s/n 02248 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 YEAR	Type III 24-hr		Default	24.00	1	3.15	2
2	10 YEAR	Type III 24-hr		Default	24.00	1	4.75	2
3	25 YEAR	Type III 24-hr		Default	24.00	1	6.01	2
4	50 YEAR	Type III 24-hr		Default	24.00	1	7.18	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,686	74	>75% Grass cover, Good, HSG C (1S, 2S)
2,561	98	Paved parking, HSG C (1S, 2S)
2,574	98	Roofs, HSG C (1S, 2S)
7,821	**90**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
7,821	HSG C	1S, 2S
0	HSG D	
0	Other	
7,821		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	2,686	0	0	2,686	>75% Grass cover, Good	
0	0	2,561	0	0	2,561	Paved parking	
0	0	2,574	0	0	2,574	Roofs	
0	**0**	**7,821**	**0**	**0**	**7,821**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EXISTING FRONT Runoff Area=2,662 sf 72.92% Impervious Runoff Depth>2.21"
Tc=6.0 min CN=91 Runoff=0.15 cfs 490 cf

Subcatchment 2S: EXISTING REAR Runoff Area=5,159 sf 61.91% Impervious Runoff Depth>2.03"
Tc=6.0 min CN=89 Runoff=0.28 cfs 875 cf

Pond 1P: OVERALL Inflow=0.43 cfs 1,365 cf
Primary=0.43 cfs 1,365 cf

Pond P1: DP1 Inflow=0.15 cfs 490 cf
Primary=0.15 cfs 490 cf

Pond P2: (new Pond) Inflow=0.28 cfs 875 cf
Primary=0.28 cfs 875 cf

Total Runoff Area = 7,821 sf Runoff Volume = 1,365 cf Average Runoff Depth = 2.09"
34.34% Pervious = 2,686 sf 65.66% Impervious = 5,135 sf

Summary for Subcatchment 1S: EXISTING FRONT

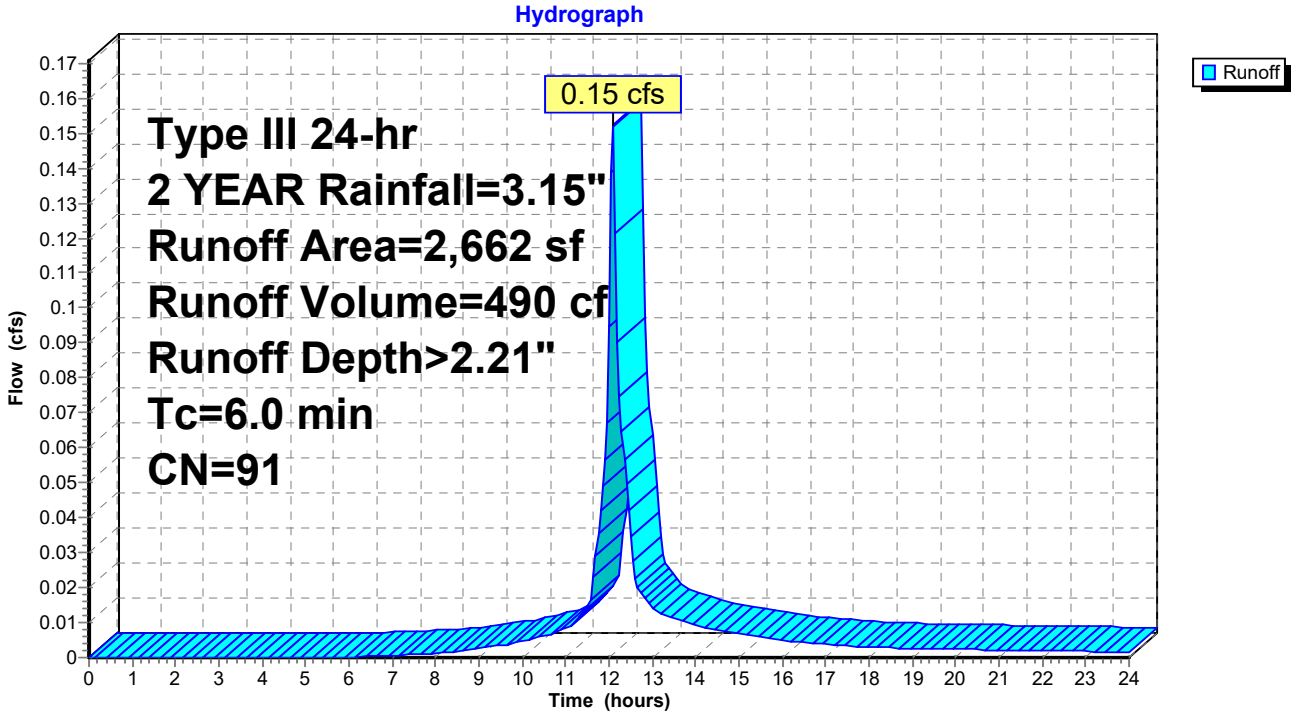
Runoff = 0.15 cfs @ 12.09 hrs, Volume= 490 cf, Depth> 2.21"
Routed to Pond P1 : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.15"

Area (sf)	CN	Description
1,024	98	Roofs, HSG C
917	98	Paved parking, HSG C
721	74	>75% Grass cover, Good, HSG C
2,662	91	Weighted Average
721		27.08% Pervious Area
1,941		72.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment 1S: EXISTING FRONT



Summary for Subcatchment 2S: EXISTING REAR

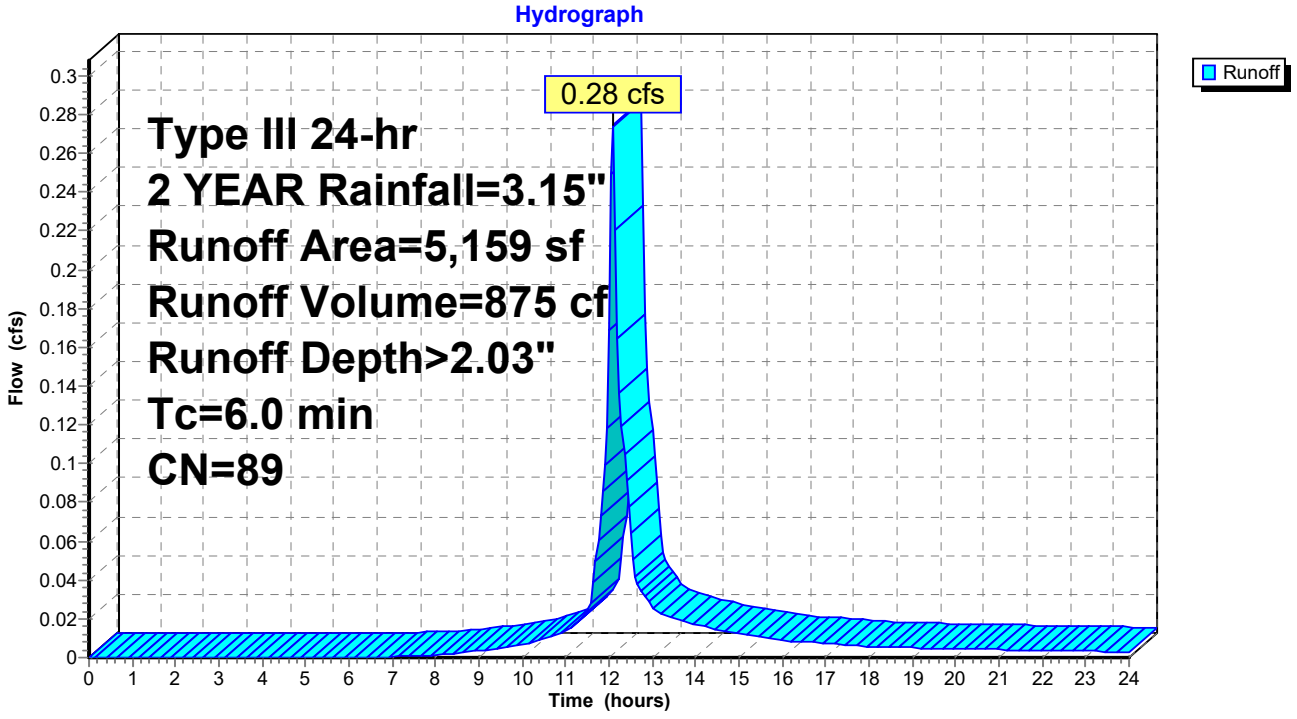
Runoff = 0.28 cfs @ 12.09 hrs, Volume= 875 cf, Depth> 2.03"
Routed to Pond P2 : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.15"

Area (sf)	CN	Description
1,550	98	Roofs, HSG C
1,644	98	Paved parking, HSG C
1,965	74	>75% Grass cover, Good, HSG C
5,159	89	Weighted Average
1,965		38.09% Pervious Area
3,194		61.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment 2S: EXISTING REAR

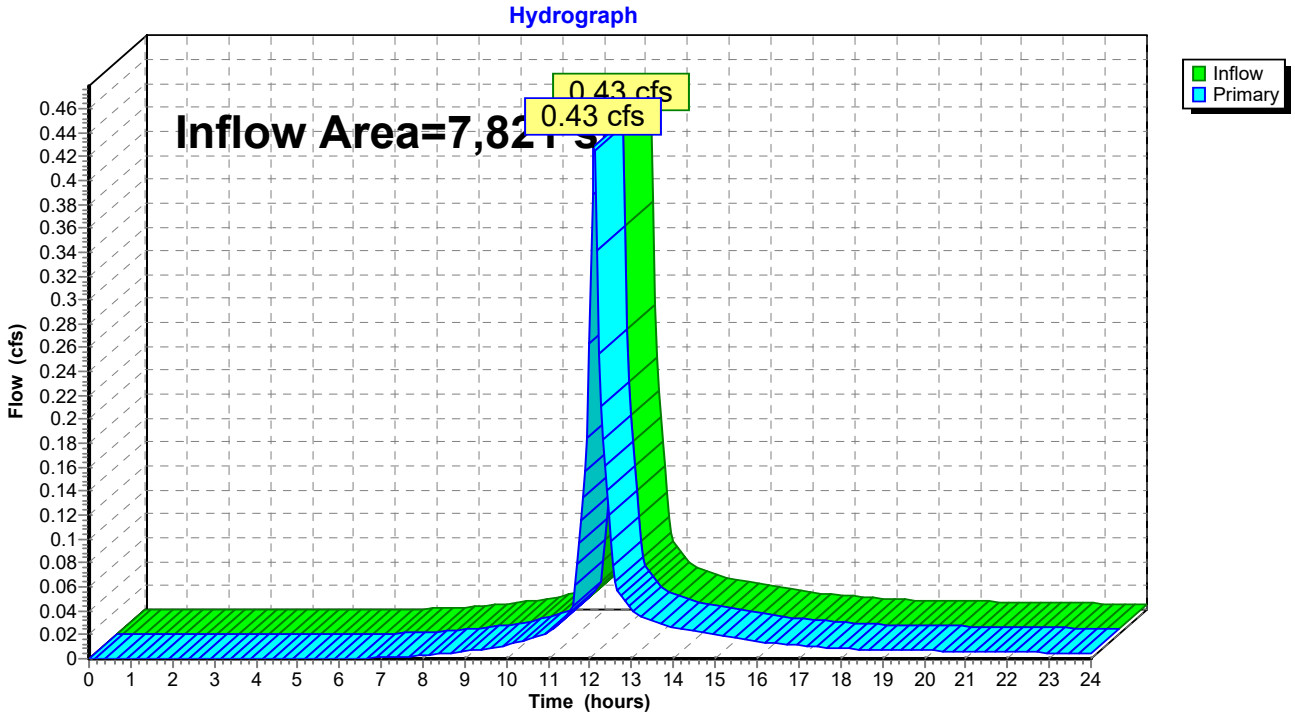


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 65.66% Impervious, Inflow Depth > 2.09" for 2 YEAR event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 1,365 cf
Primary = 0.43 cfs @ 12.09 hrs, Volume= 1,365 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

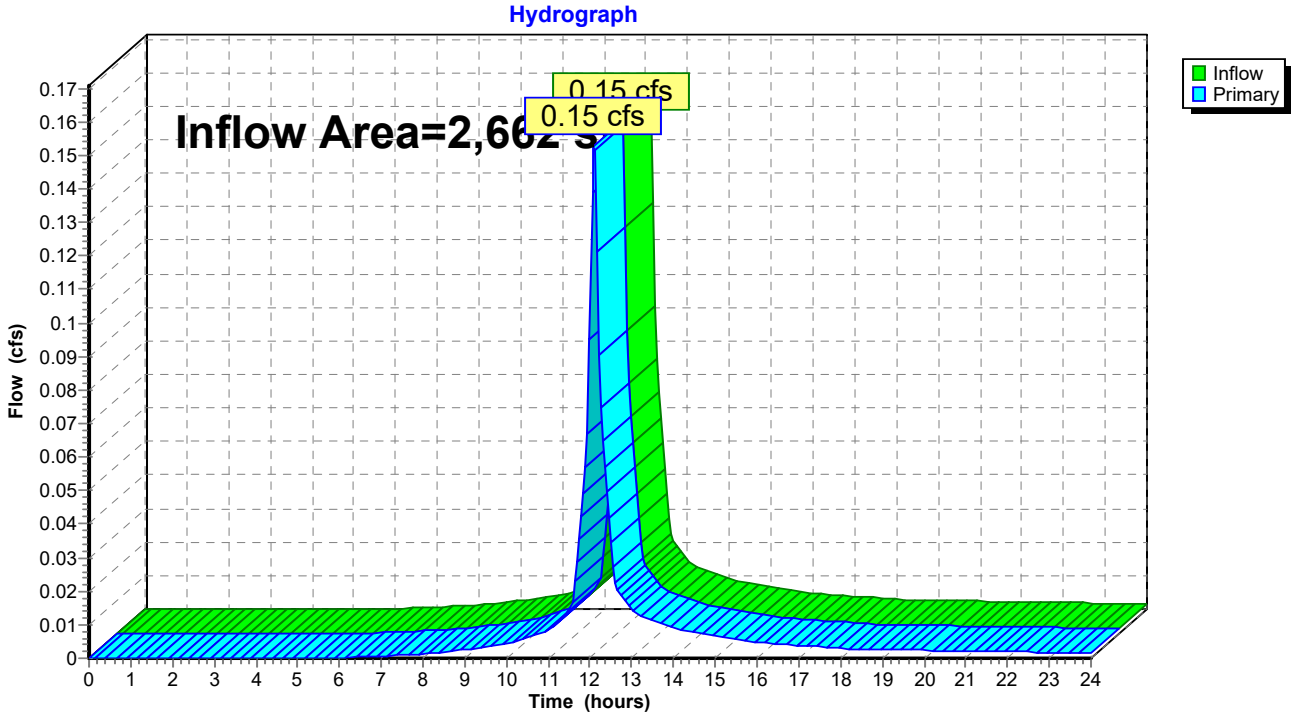


Summary for Pond P1: DP1

Inflow Area = 2,662 sf, 72.92% Impervious, Inflow Depth > 2.21" for 2 YEAR event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 490 cf
Primary = 0.15 cfs @ 12.09 hrs, Volume= 490 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P1: DP1

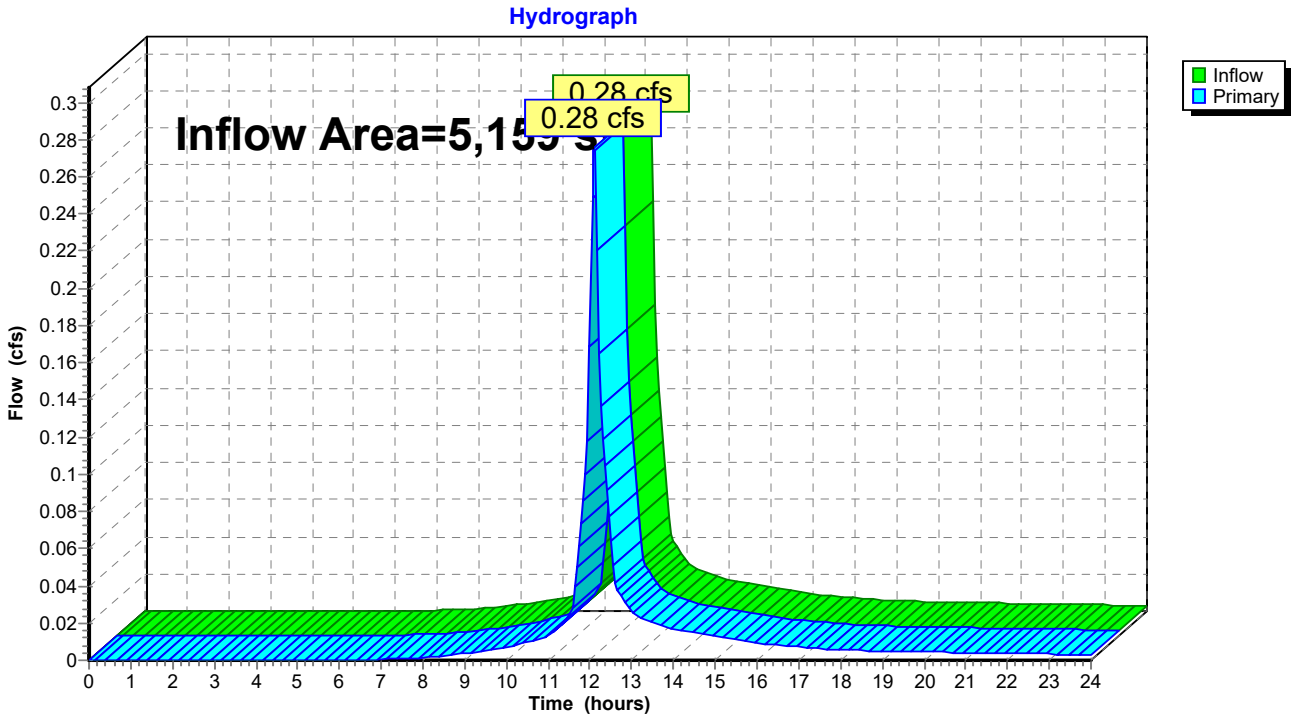


Summary for Pond P2: (new Pond)

Inflow Area = 5,159 sf, 61.91% Impervious, Inflow Depth > 2.03" for 2 YEAR event
Inflow = 0.28 cfs @ 12.09 hrs, Volume= 875 cf
Primary = 0.28 cfs @ 12.09 hrs, Volume= 875 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P2: (new Pond)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EXISTING FRONT Runoff Area=2,662 sf 72.92% Impervious Runoff Depth>3.74"
Tc=6.0 min CN=91 Runoff=0.25 cfs 829 cf

Subcatchment 2S: EXISTING REAR Runoff Area=5,159 sf 61.91% Impervious Runoff Depth>3.53"
Tc=6.0 min CN=89 Runoff=0.47 cfs 1,518 cf

Pond 1P: OVERALL Inflow=0.72 cfs 2,347 cf
Primary=0.72 cfs 2,347 cf

Pond P1: DP1 Inflow=0.25 cfs 829 cf
Primary=0.25 cfs 829 cf

Pond P2: (new Pond) Inflow=0.47 cfs 1,518 cf
Primary=0.47 cfs 1,518 cf

Total Runoff Area = 7,821 sf Runoff Volume = 2,347 cf Average Runoff Depth = 3.60"
34.34% Pervious = 2,686 sf 65.66% Impervious = 5,135 sf

Summary for Subcatchment 1S: EXISTING FRONT

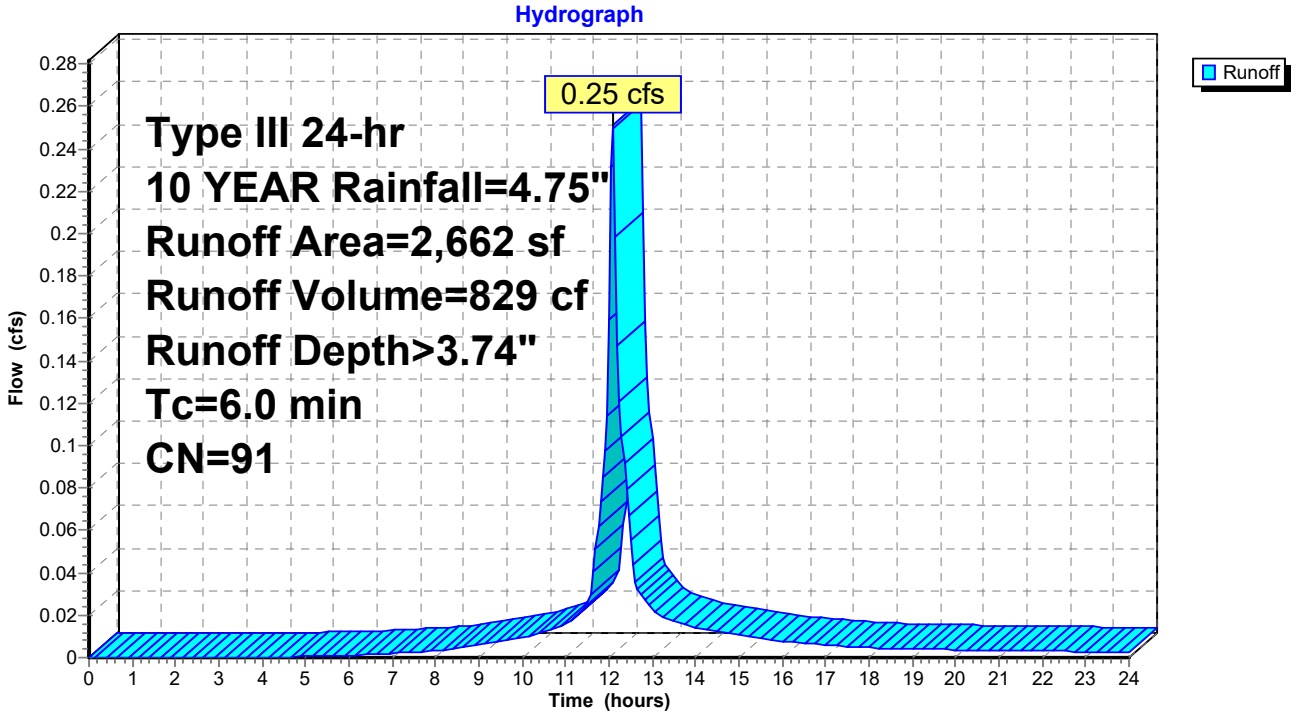
Runoff = 0.25 cfs @ 12.09 hrs, Volume= 829 cf, Depth> 3.74"
Routed to Pond P1 : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.75"

Area (sf)	CN	Description
1,024	98	Roofs, HSG C
917	98	Paved parking, HSG C
721	74	>75% Grass cover, Good, HSG C
2,662	91	Weighted Average
721		27.08% Pervious Area
1,941		72.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment 1S: EXISTING FRONT



Summary for Subcatchment 2S: EXISTING REAR

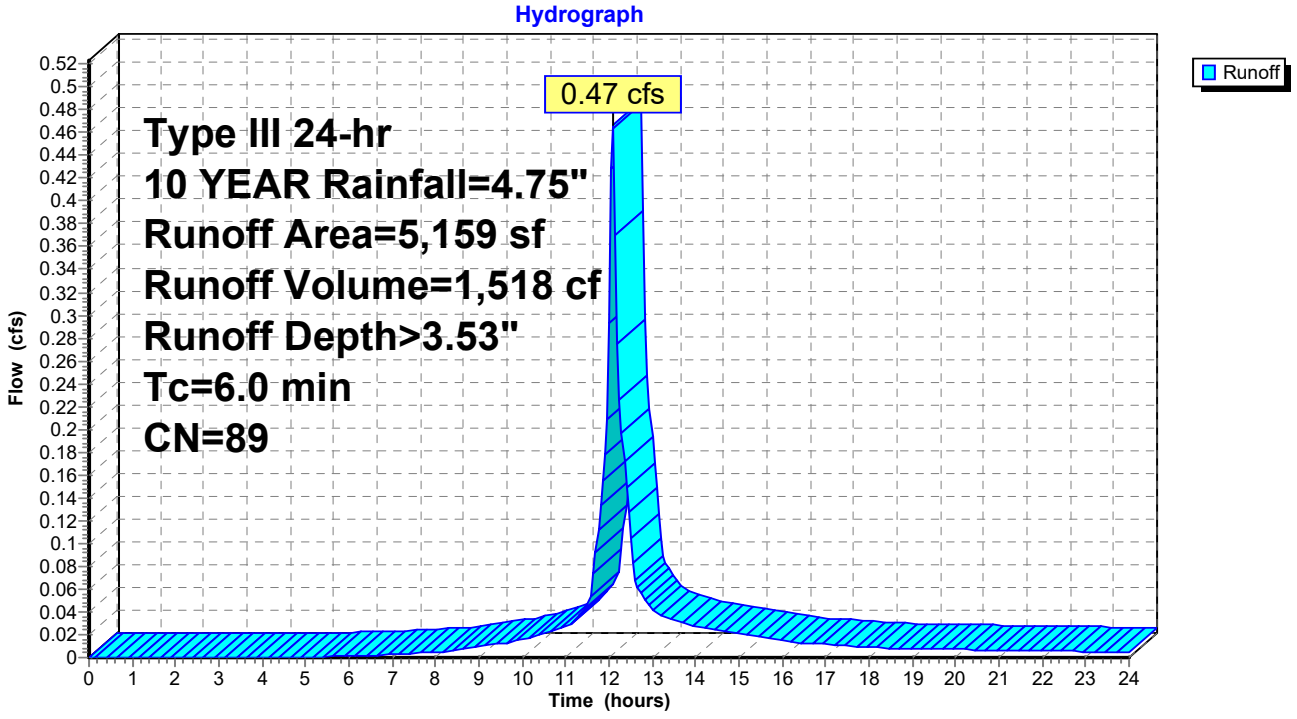
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 1,518 cf, Depth> 3.53"
Routed to Pond P2 : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.75"

Area (sf)	CN	Description
1,550	98	Roofs, HSG C
1,644	98	Paved parking, HSG C
1,965	74	>75% Grass cover, Good, HSG C
5,159	89	Weighted Average
1,965		38.09% Pervious Area
3,194		61.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment 2S: EXISTING REAR

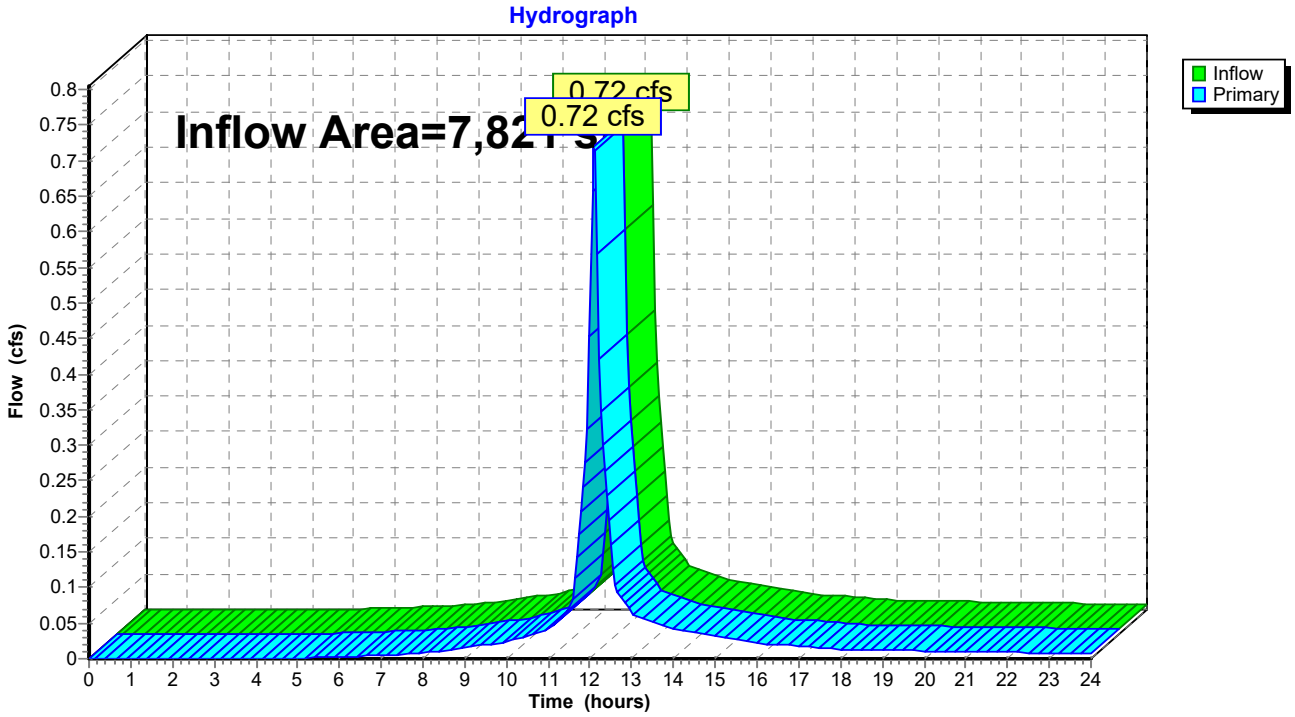


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 65.66% Impervious, Inflow Depth > 3.60" for 10 YEAR event
Inflow = 0.72 cfs @ 12.09 hrs, Volume= 2,347 cf
Primary = 0.72 cfs @ 12.09 hrs, Volume= 2,347 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

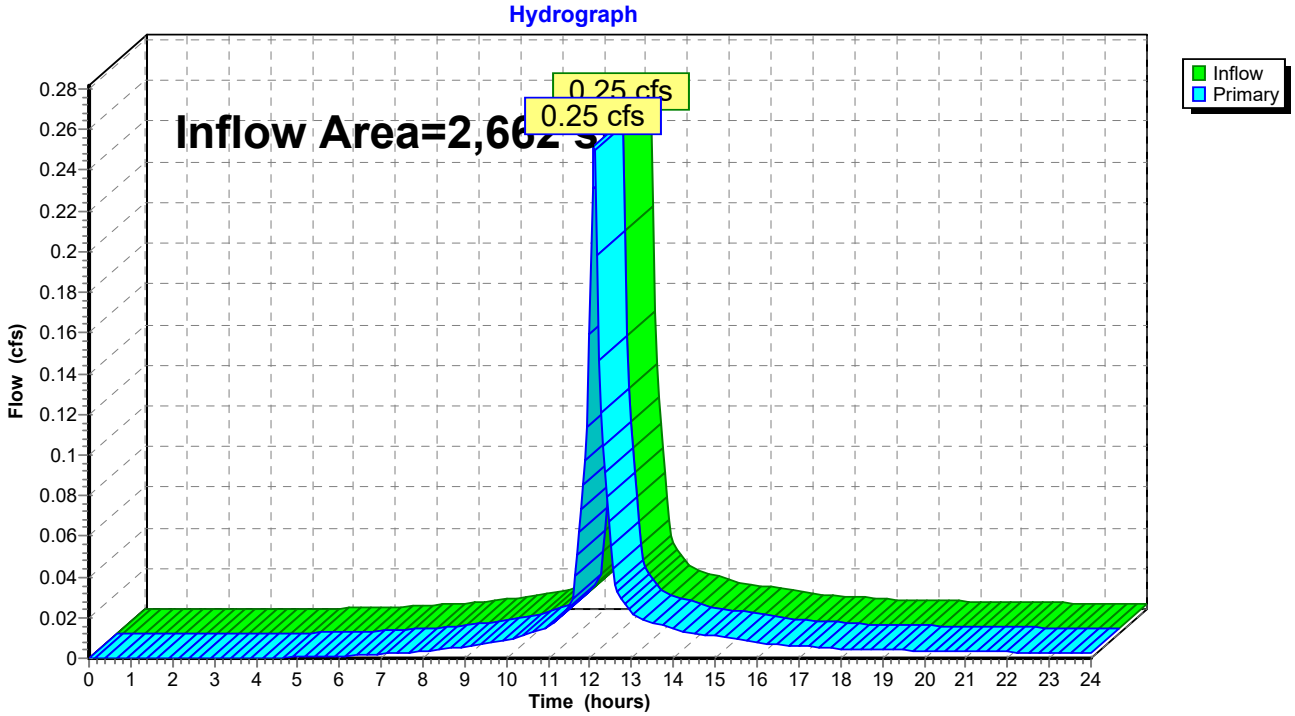


Summary for Pond P1: DP1

Inflow Area = 2,662 sf, 72.92% Impervious, Inflow Depth > 3.74" for 10 YEAR event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 829 cf
Primary = 0.25 cfs @ 12.09 hrs, Volume= 829 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P1: DP1

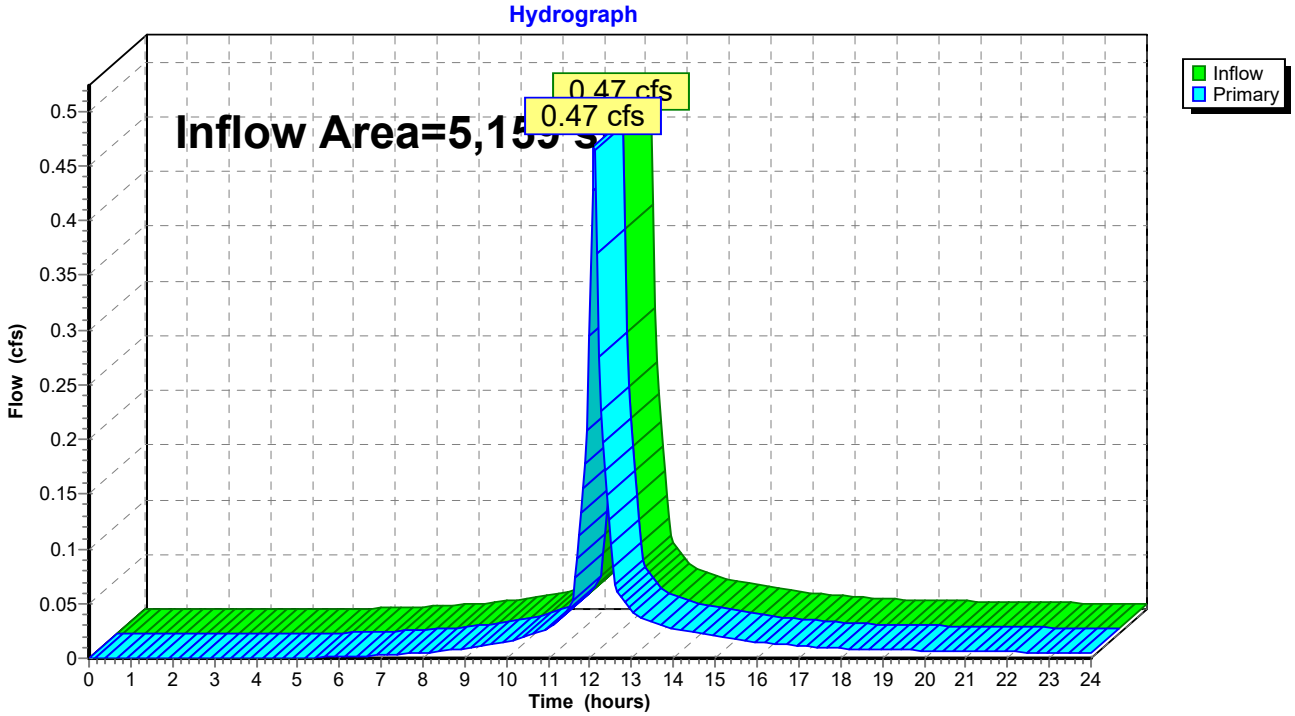


Summary for Pond P2: (new Pond)

Inflow Area = 5,159 sf, 61.91% Impervious, Inflow Depth > 3.53" for 10 YEAR event
Inflow = 0.47 cfs @ 12.09 hrs, Volume= 1,518 cf
Primary = 0.47 cfs @ 12.09 hrs, Volume= 1,518 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P2: (new Pond)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EXISTING FRONT Runoff Area=2,662 sf 72.92% Impervious Runoff Depth>4.96"
Tc=6.0 min CN=91 Runoff=0.33 cfs 1,101 cf

Subcatchment 2S: EXISTING REAR Runoff Area=5,159 sf 61.91% Impervious Runoff Depth>4.74"
Tc=6.0 min CN=89 Runoff=0.62 cfs 2,039 cf

Pond 1P: OVERALL Inflow=0.95 cfs 3,140 cf
Primary=0.95 cfs 3,140 cf

Pond P1: DP1 Inflow=0.33 cfs 1,101 cf
Primary=0.33 cfs 1,101 cf

Pond P2: (new Pond) Inflow=0.62 cfs 2,039 cf
Primary=0.62 cfs 2,039 cf

Total Runoff Area = 7,821 sf Runoff Volume = 3,140 cf Average Runoff Depth = 4.82"
34.34% Pervious = 2,686 sf 65.66% Impervious = 5,135 sf

Summary for Subcatchment 1S: EXISTING FRONT

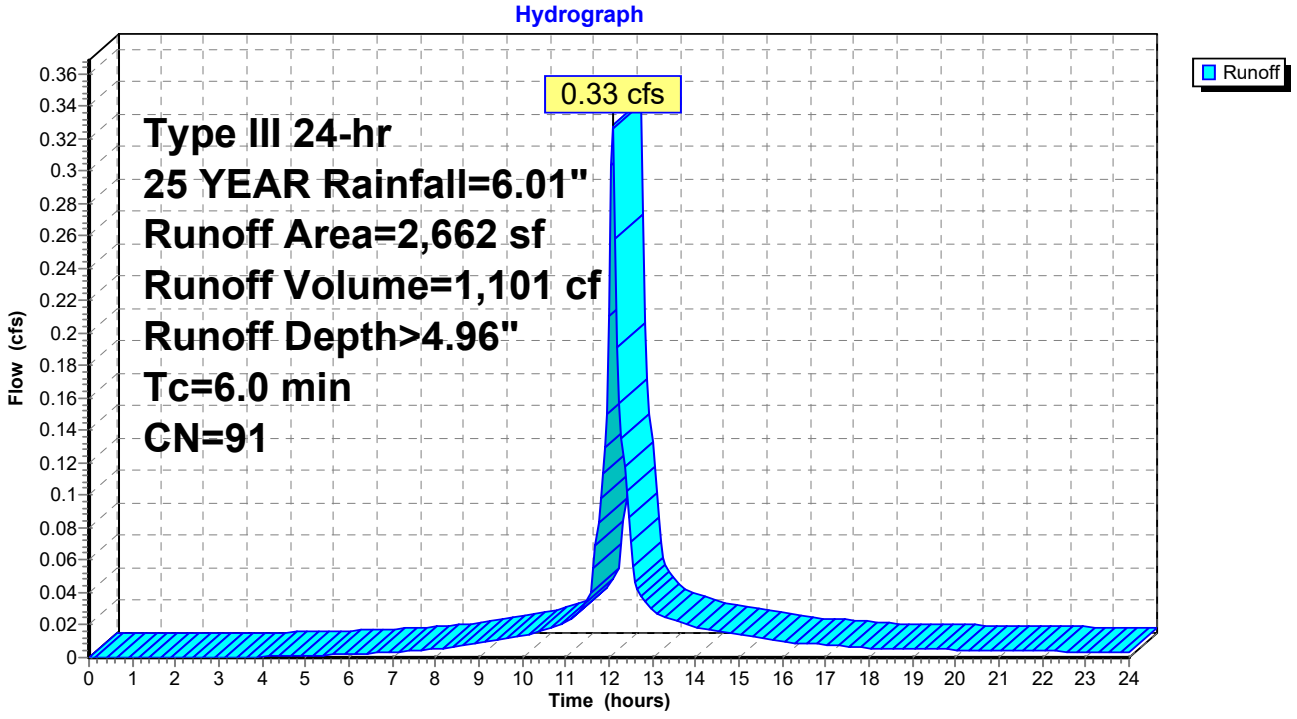
Runoff = 0.33 cfs @ 12.09 hrs, Volume= 1,101 cf, Depth> 4.96"
Routed to Pond P1 : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.01"

Area (sf)	CN	Description
1,024	98	Roofs, HSG C
917	98	Paved parking, HSG C
721	74	>75% Grass cover, Good, HSG C
2,662	91	Weighted Average
721		27.08% Pervious Area
1,941		72.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment 1S: EXISTING FRONT



Summary for Subcatchment 2S: EXISTING REAR

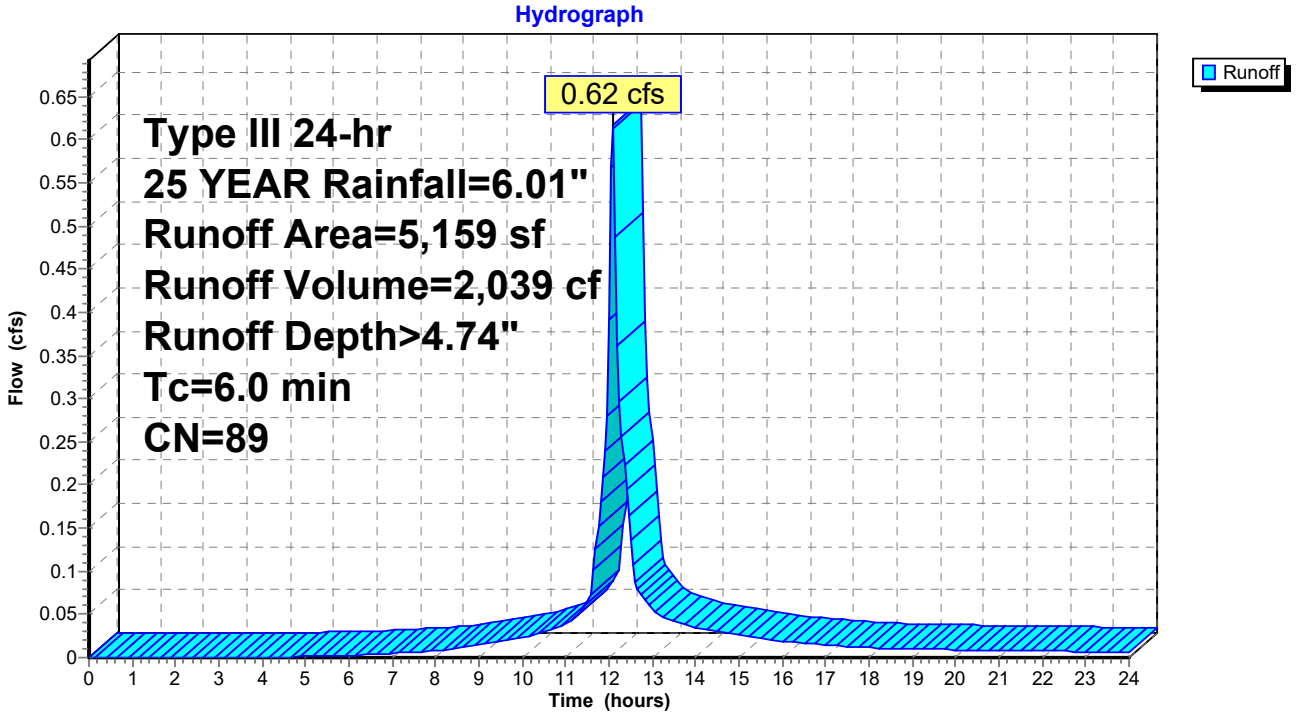
Runoff = 0.62 cfs @ 12.09 hrs, Volume= 2,039 cf, Depth> 4.74"
Routed to Pond P2 : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=6.01"

Area (sf)	CN	Description
1,550	98	Roofs, HSG C
1,644	98	Paved parking, HSG C
1,965	74	>75% Grass cover, Good, HSG C
5,159	89	Weighted Average
1,965		38.09% Pervious Area
3,194		61.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment 2S: EXISTING REAR

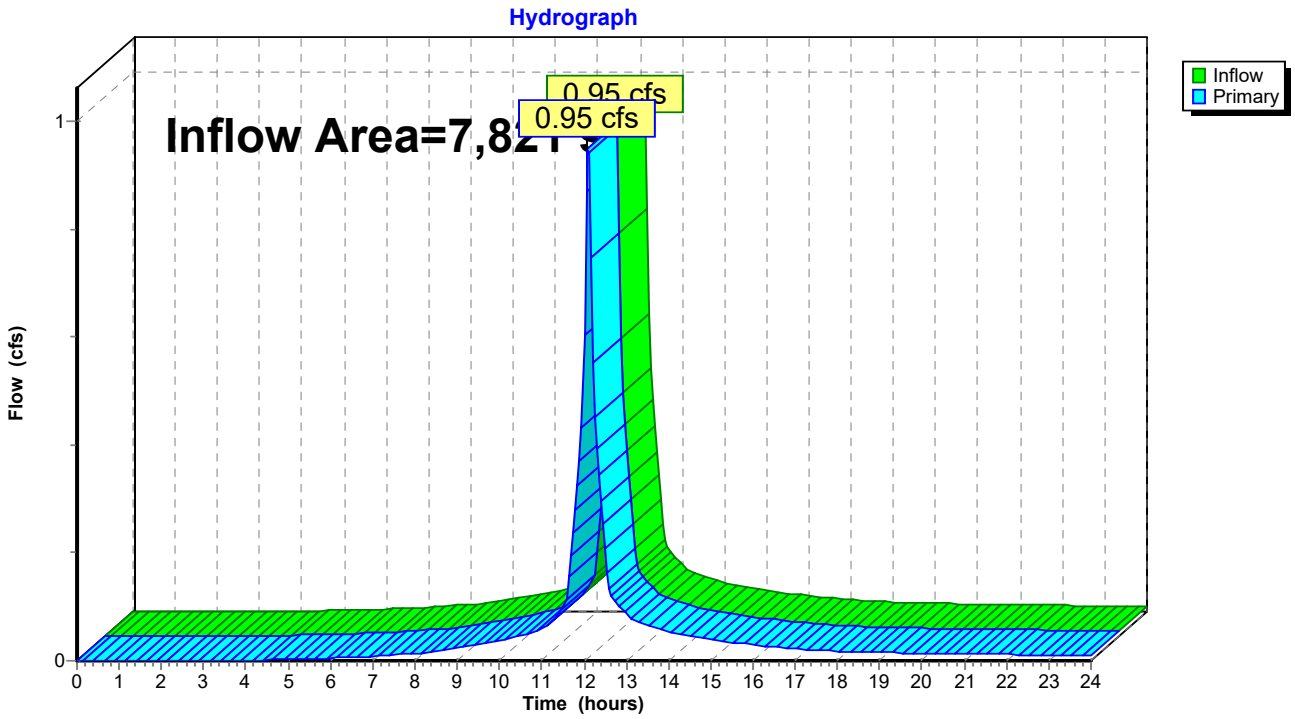


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 65.66% Impervious, Inflow Depth > 4.82" for 25 YEAR event
Inflow = 0.95 cfs @ 12.09 hrs, Volume= 3,140 cf
Primary = 0.95 cfs @ 12.09 hrs, Volume= 3,140 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

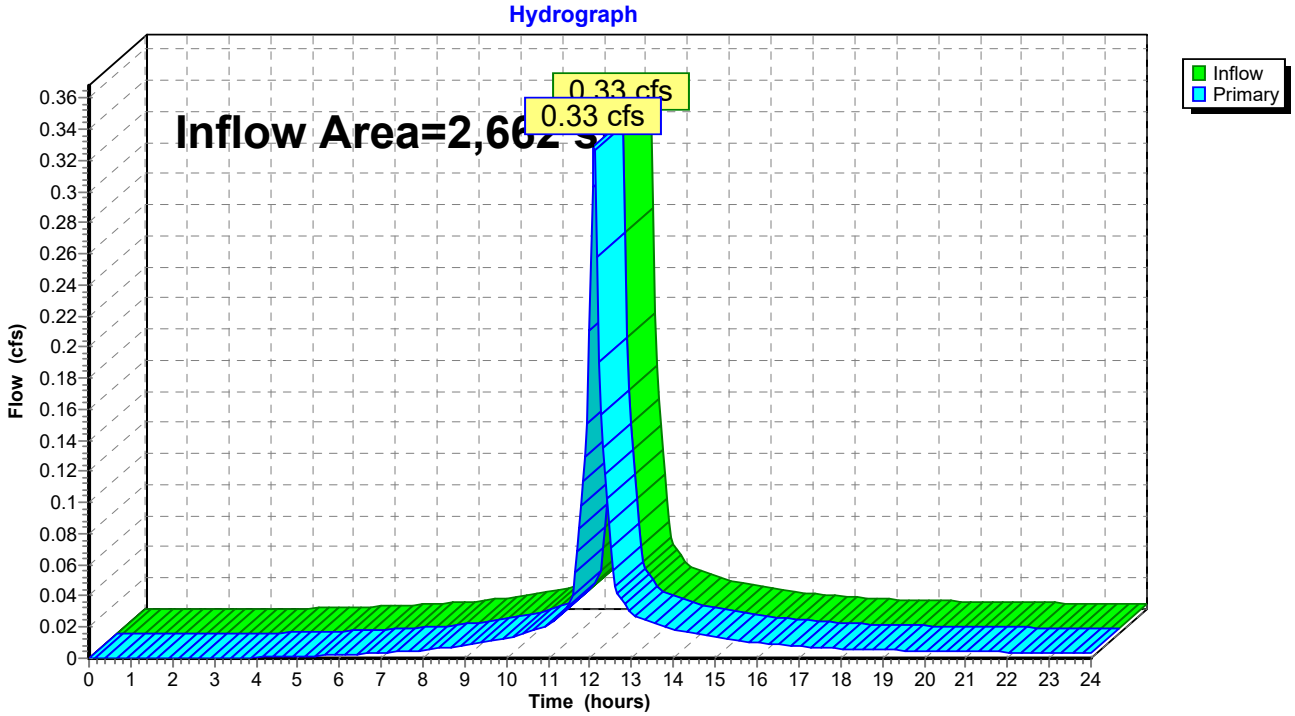


Summary for Pond P1: DP1

Inflow Area = 2,662 sf, 72.92% Impervious, Inflow Depth > 4.96" for 25 YEAR event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 1,101 cf
Primary = 0.33 cfs @ 12.09 hrs, Volume= 1,101 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P1: DP1

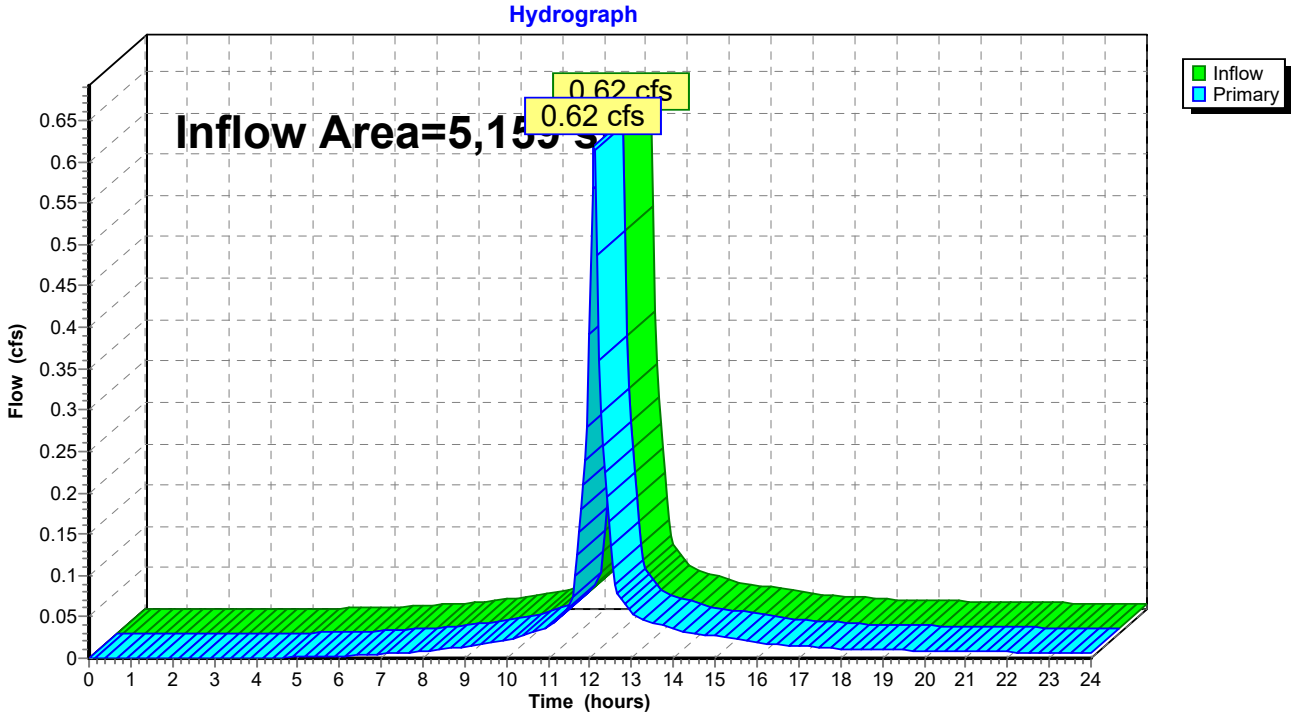


Summary for Pond P2: (new Pond)

Inflow Area = 5,159 sf, 61.91% Impervious, Inflow Depth > 4.74" for 25 YEAR event
Inflow = 0.62 cfs @ 12.09 hrs, Volume= 2,039 cf
Primary = 0.62 cfs @ 12.09 hrs, Volume= 2,039 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P2: (new Pond)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EXISTING FRONT Runoff Area=2,662 sf 72.92% Impervious Runoff Depth>6.11"
Tc=6.0 min CN=91 Runoff=0.40 cfs 1,356 cf

Subcatchment 2S: EXISTING REAR Runoff Area=5,159 sf 61.91% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=89 Runoff=0.76 cfs 2,528 cf

Pond 1P: OVERALL Inflow=1.16 cfs 3,884 cf
Primary=1.16 cfs 3,884 cf

Pond P1: DP1 Inflow=0.40 cfs 1,356 cf
Primary=0.40 cfs 1,356 cf

Pond P2: (new Pond) Inflow=0.76 cfs 2,528 cf
Primary=0.76 cfs 2,528 cf

Total Runoff Area = 7,821 sf Runoff Volume = 3,884 cf Average Runoff Depth = 5.96"
34.34% Pervious = 2,686 sf 65.66% Impervious = 5,135 sf

Summary for Subcatchment 1S: EXISTING FRONT

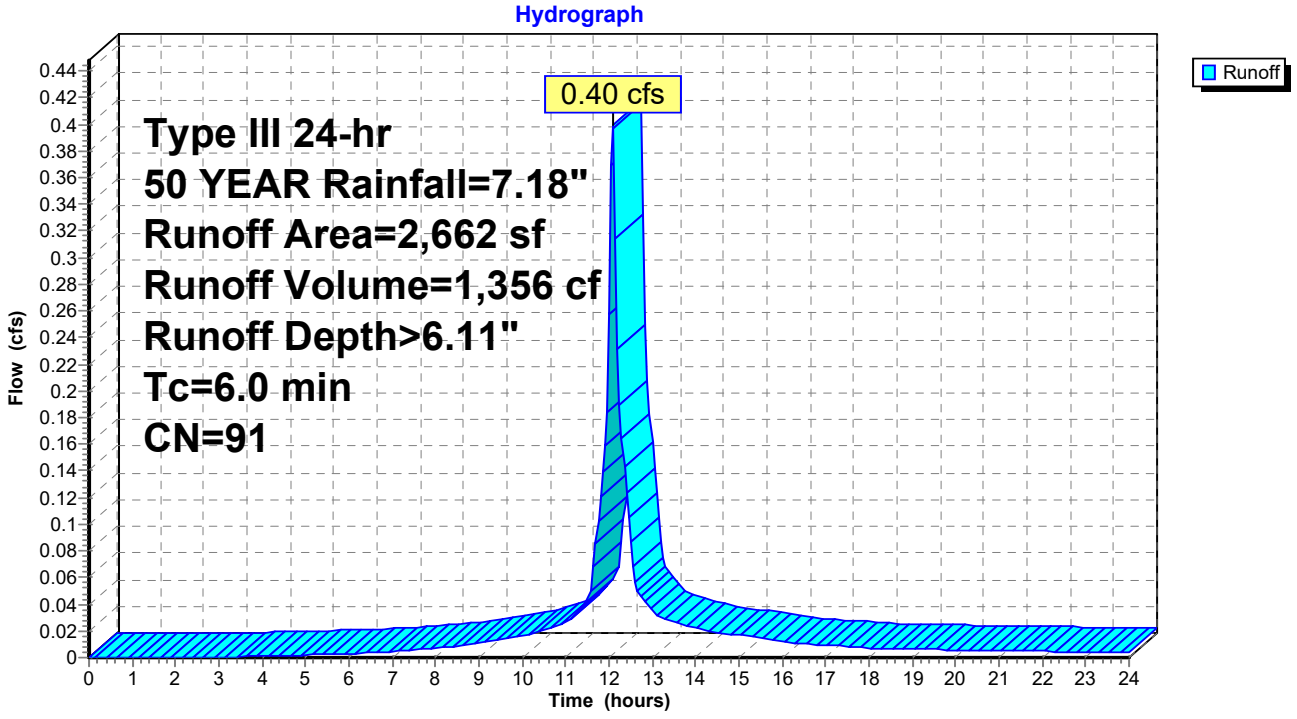
Runoff = 0.40 cfs @ 12.09 hrs, Volume= 1,356 cf, Depth> 6.11"
Routed to Pond P1 : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YEAR Rainfall=7.18"

Area (sf)	CN	Description
1,024	98	Roofs, HSG C
917	98	Paved parking, HSG C
721	74	>75% Grass cover, Good, HSG C
2,662	91	Weighted Average
721		27.08% Pervious Area
1,941		72.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment 1S: EXISTING FRONT



Summary for Subcatchment 2S: EXISTING REAR

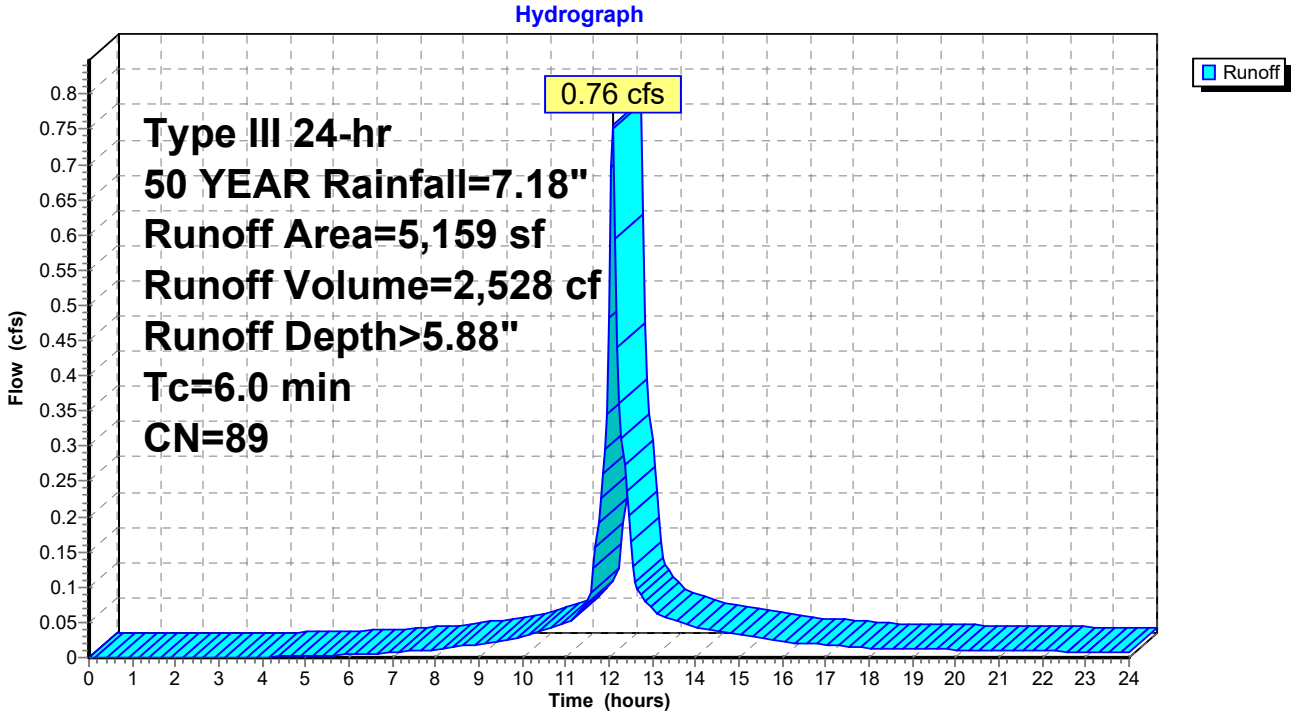
Runoff = 0.76 cfs @ 12.09 hrs, Volume= 2,528 cf, Depth> 5.88"
Routed to Pond P2 : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 YEAR Rainfall=7.18"

Area (sf)	CN	Description
1,550	98	Roofs, HSG C
1,644	98	Paved parking, HSG C
1,965	74	>75% Grass cover, Good, HSG C
5,159	89	Weighted Average
1,965		38.09% Pervious Area
3,194		61.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment 2S: EXISTING REAR

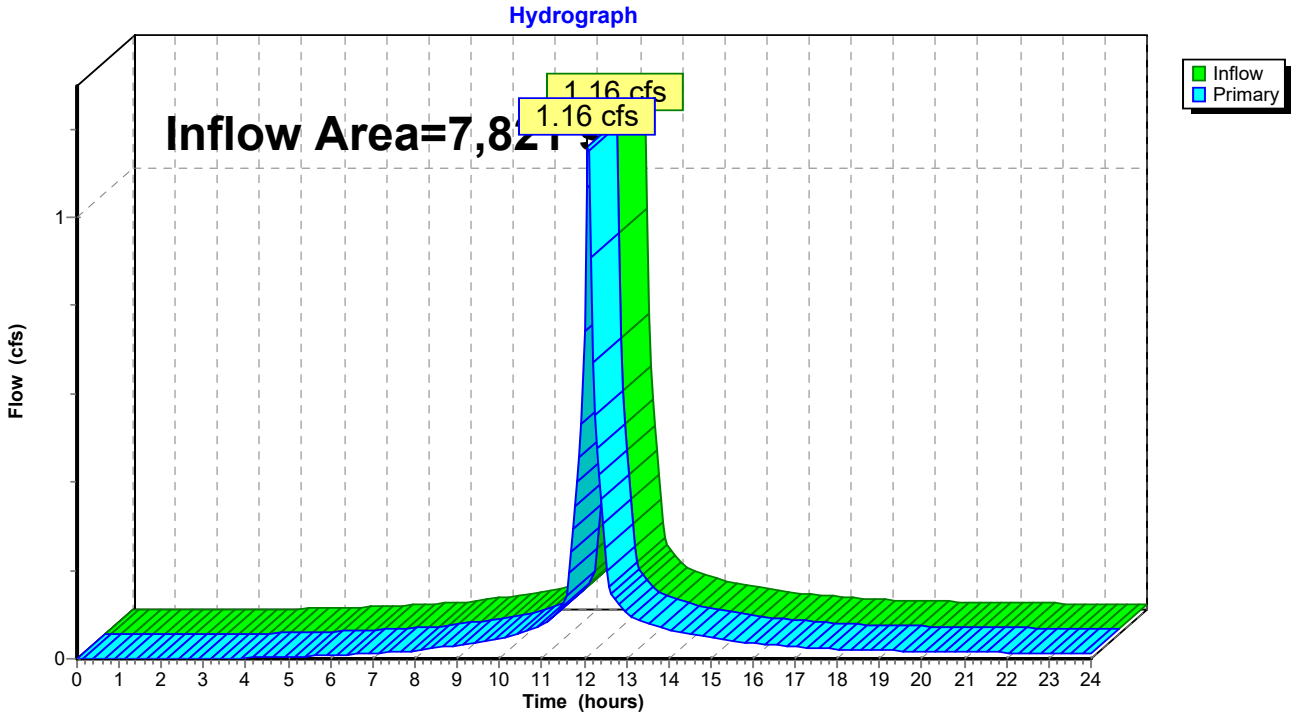


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 65.66% Impervious, Inflow Depth > 5.96" for 50 YEAR event
Inflow = 1.16 cfs @ 12.09 hrs, Volume= 3,884 cf
Primary = 1.16 cfs @ 12.09 hrs, Volume= 3,884 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

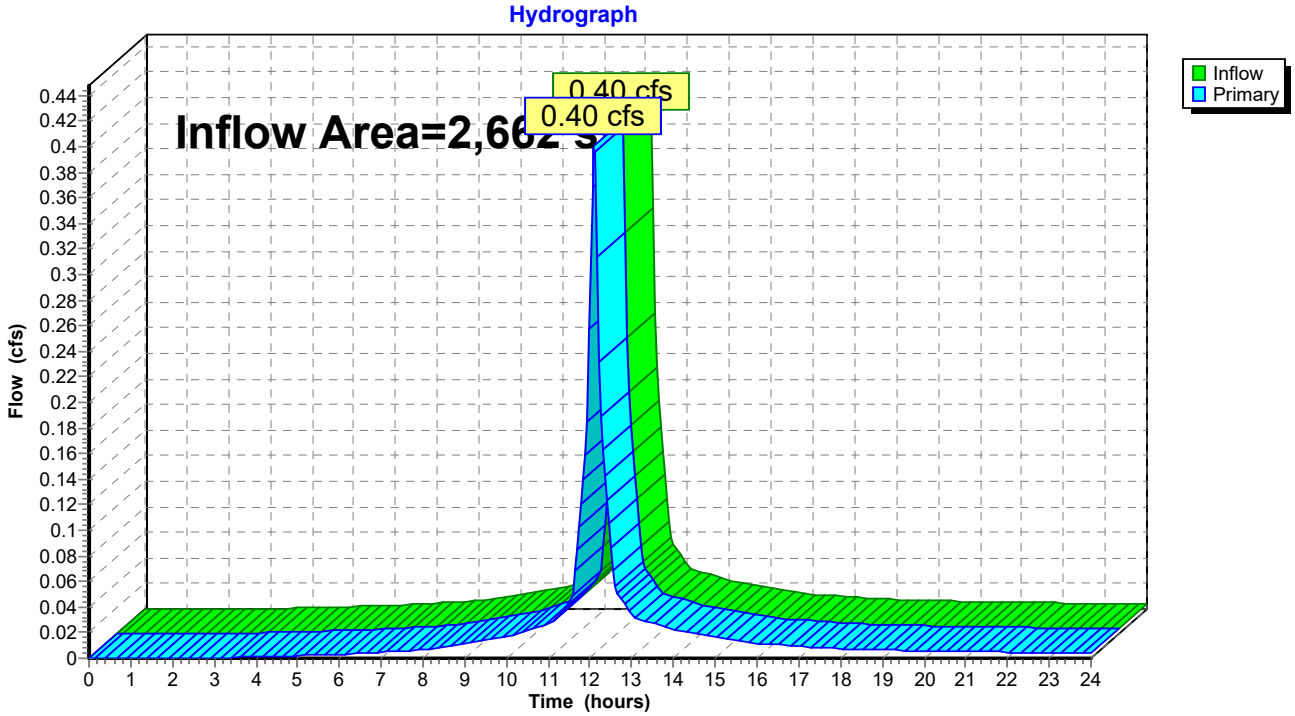


Summary for Pond P1: DP1

Inflow Area = 2,662 sf, 72.92% Impervious, Inflow Depth > 6.11" for 50 YEAR event
Inflow = 0.40 cfs @ 12.09 hrs, Volume= 1,356 cf
Primary = 0.40 cfs @ 12.09 hrs, Volume= 1,356 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P1: DP1

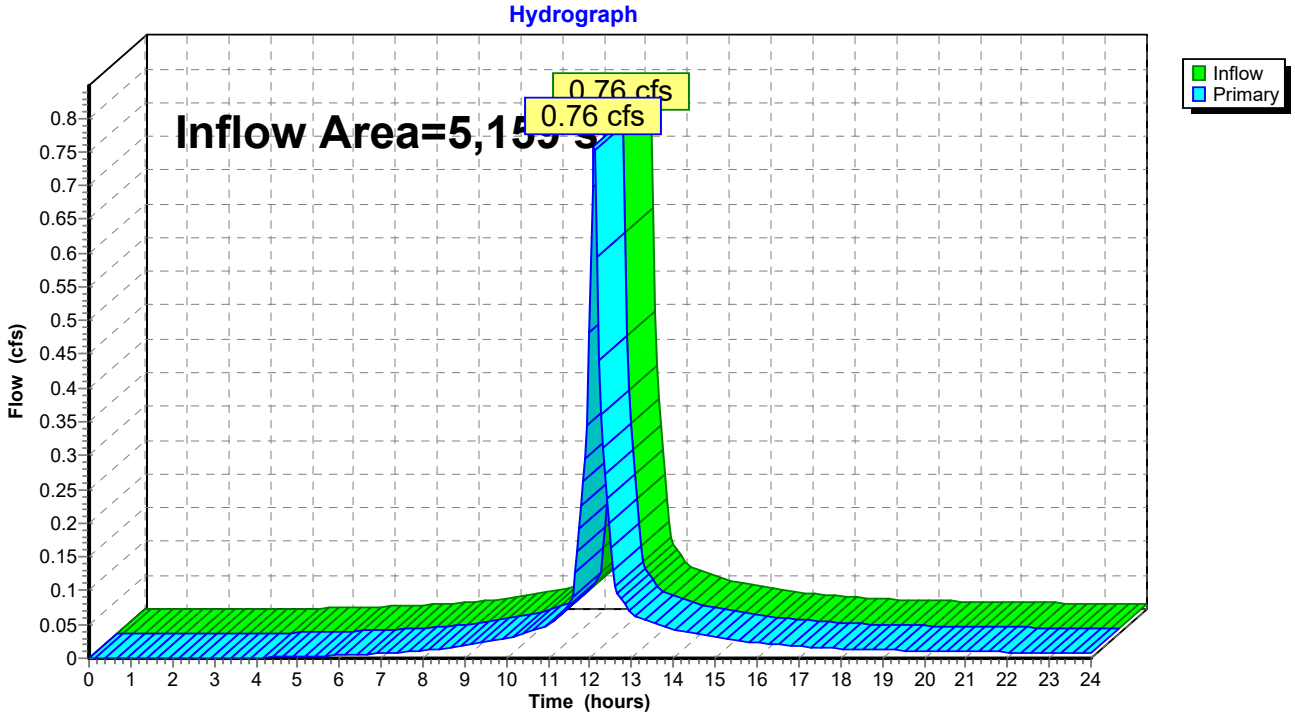


Summary for Pond P2: (new Pond)

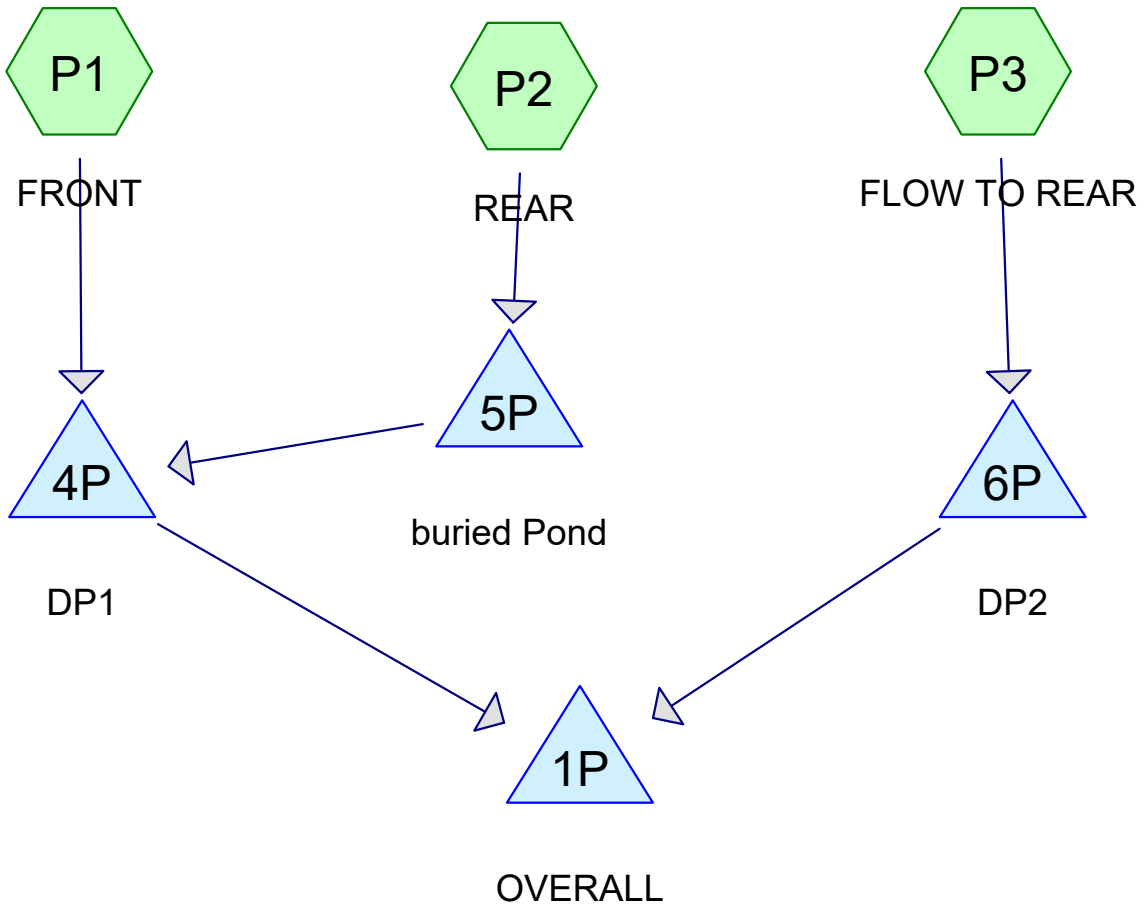
Inflow Area = 5,159 sf, 61.91% Impervious, Inflow Depth > 5.88" for 50 YEAR event
Inflow = 0.76 cfs @ 12.09 hrs, Volume= 2,528 cf
Primary = 0.76 cfs @ 12.09 hrs, Volume= 2,528 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Pond P2: (new Pond)



POST-DEVELOPMENT DRAINAGE



Subcat Reach Pond Link

Routing Diagram for 9-11 MECHANIC - POST
Prepared by {enter your company name here}, Printed 2/1/2026
HydroCAD® 10.10-7b s/n 02248 © 2022 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "9-11 MECHANIC - PRE.hcp"

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 YEAR	Type II 24-hr		Default	24.00	1	3.15	2
2	10 YEAR	Type II 24-hr		Default	24.00	1	4.75	2
3	25 YEAR	Type II 24-hr		Default	24.00	1	6.01	2
4	50 YEAR	Type II 24-hr		Default	24.00	1	7.18	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
547	79	50-75% Grass cover, Fair, HSG C (P1, P3)
586	74	>75% Grass cover, Good, HSG C (P2)
4,667	98	Paved parking, HSG C (P1, P2, P3)
1,856	98	Roofs, HSG C (P1)
165	98	Walk, HSG C (P1)
7,821	**95**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
7,821	HSG C	P1, P2, P3
0	HSG D	
0	Other	
7,821		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	547	0	0	547	50-75% Grass cover, Fair	
0	0	586	0	0	586	>75% Grass cover, Good	
0	0	4,667	0	0	4,667	Paved parking	
0	0	1,856	0	0	1,856	Roofs	
0	0	165	0	0	165	Walk	
0	**0**	**7,821**	**0**	**0**	**7,821**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	5P	61.00	60.39	122.0	0.0050	0.013	0.0	8.0	0.0

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: FRONT Runoff Area=2,694 sf 95.29% Impervious Runoff Depth=2.81"
Tc=6.0 min CN=97 Runoff=0.26 cfs 630 cf

Subcatchment P2: REAR Runoff Area=4,409 sf 86.71% Impervious Runoff Depth=2.60"
Tc=6.0 min CN=95 Runoff=0.41 cfs 954 cf

Subcatchment P3: FLOW TO REAR Runoff Area=718 sf 41.50% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=87 Runoff=0.05 cfs 112 cf

Pond 1P: OVERALL Inflow=0.32 cfs 770 cf
Primary=0.32 cfs 770 cf

Pond 4P: DP1 Inflow=0.26 cfs 658 cf
Primary=0.26 cfs 658 cf

Pond 5P: buried Pond Peak Elev=63.79' Storage=465 cf Inflow=0.41 cfs 954 cf
Discarded=0.01 cfs 927 cf Primary=0.01 cfs 28 cf Outflow=0.02 cfs 954 cf

Pond 6P: DP2 Inflow=0.05 cfs 112 cf
Primary=0.05 cfs 112 cf

Total Runoff Area = 7,821 sf Runoff Volume = 1,696 cf Average Runoff Depth = 2.60"
14.49% Pervious = 1,133 sf 85.51% Impervious = 6,688 sf

Summary for Subcatchment P1: FRONT

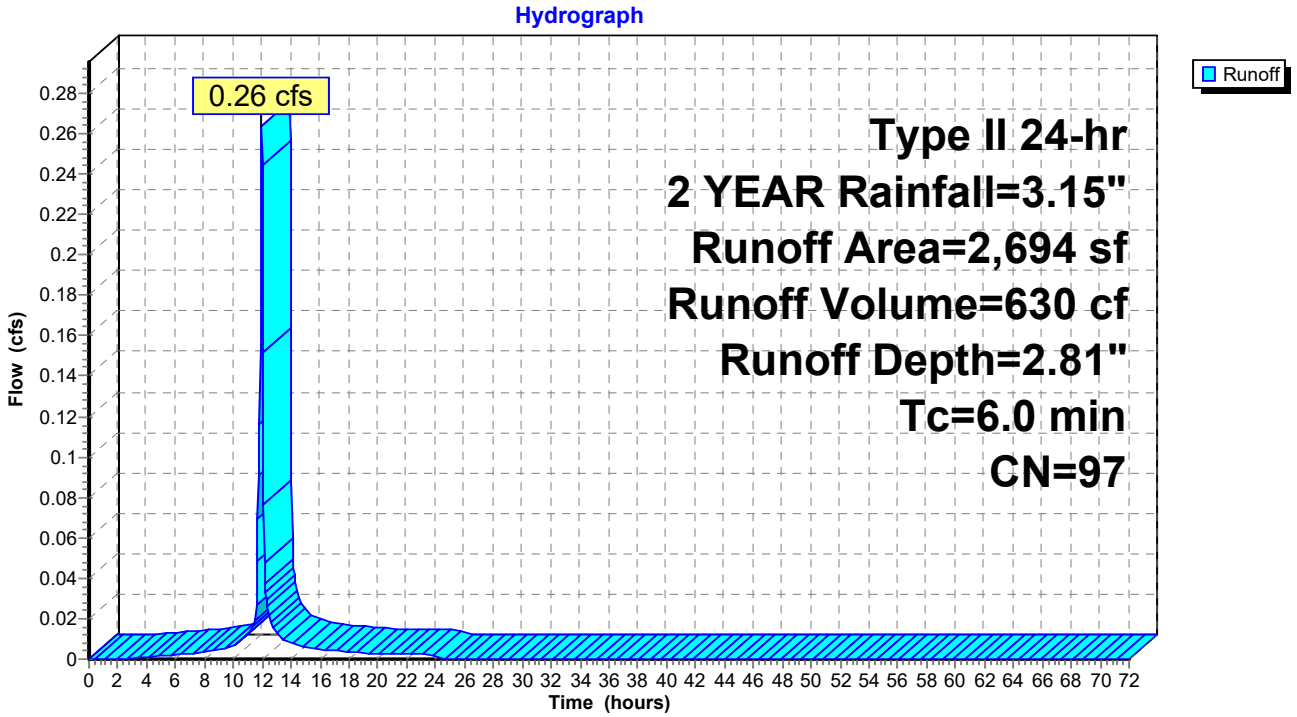
Runoff = 0.26 cfs @ 11.96 hrs, Volume= 630 cf, Depth= 2.81"
Routed to Pond 4P : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.15"

	Area (sf)	CN	Description
	1,856	98	Roofs, HSG C
*	165	98	Walk, HSG C
	546	98	Paved parking, HSG C
	127	79	50-75% Grass cover, Fair, HSG C
	2,694	97	Weighted Average
	127		4.71% Pervious Area
	2,567		95.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment P1: FRONT



Summary for Subcatchment P2: REAR

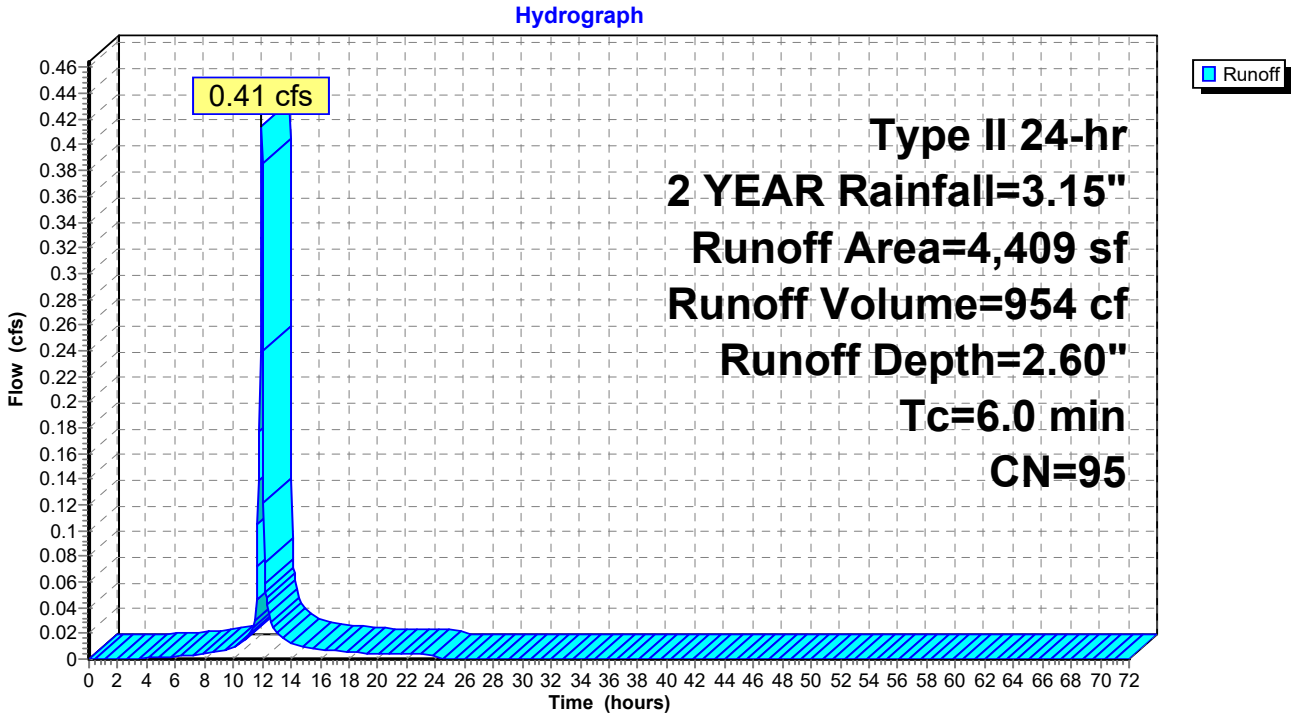
Runoff = 0.41 cfs @ 11.96 hrs, Volume= 954 cf, Depth= 2.60"
Routed to Pond 5P : buried Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.15"

Area (sf)	CN	Description
3,823	98	Paved parking, HSG C
586	74	>75% Grass cover, Good, HSG C
4,409	95	Weighted Average
586		13.29% Pervious Area
3,823		86.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P2: REAR



Summary for Subcatchment P3: FLOW TO REAR

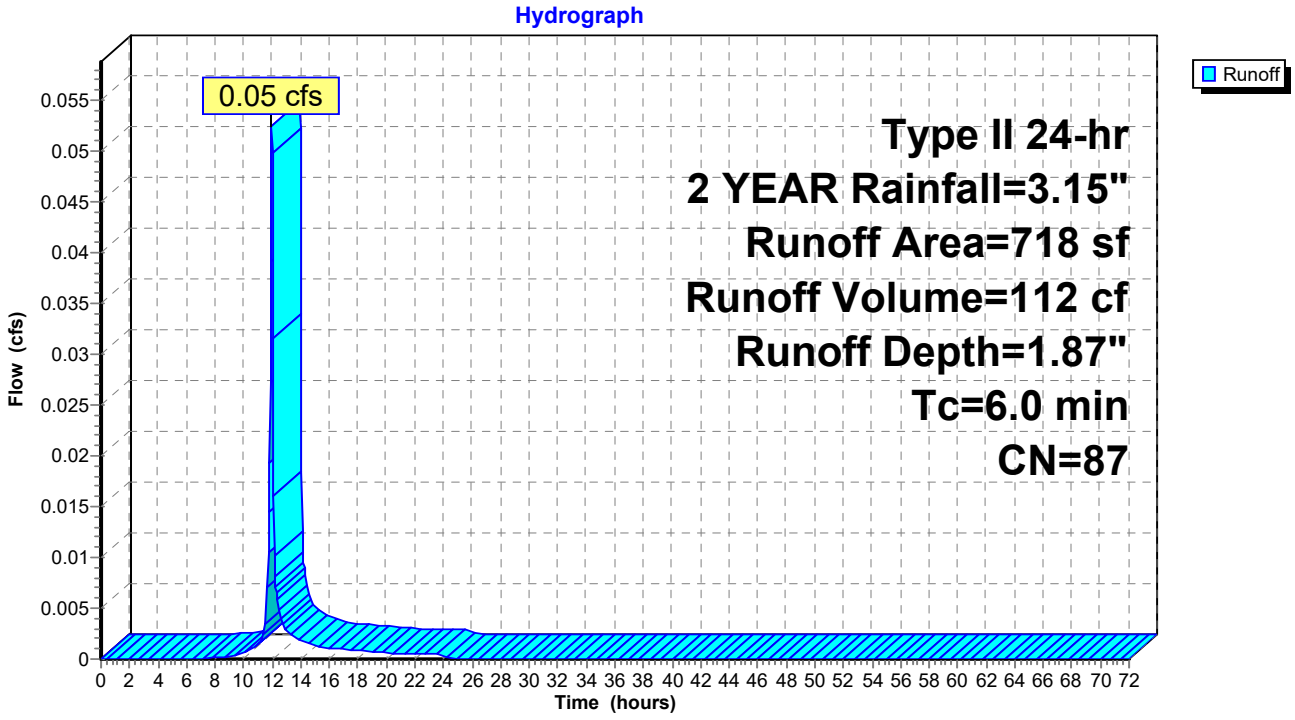
Runoff = 0.05 cfs @ 11.97 hrs, Volume= 112 cf, Depth= 1.87"
Routed to Pond 6P : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.15"

Area (sf)	CN	Description
420	79	50-75% Grass cover, Fair, HSG C
298	98	Paved parking, HSG C
718	87	Weighted Average
420		58.50% Pervious Area
298		41.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P3: FLOW TO REAR

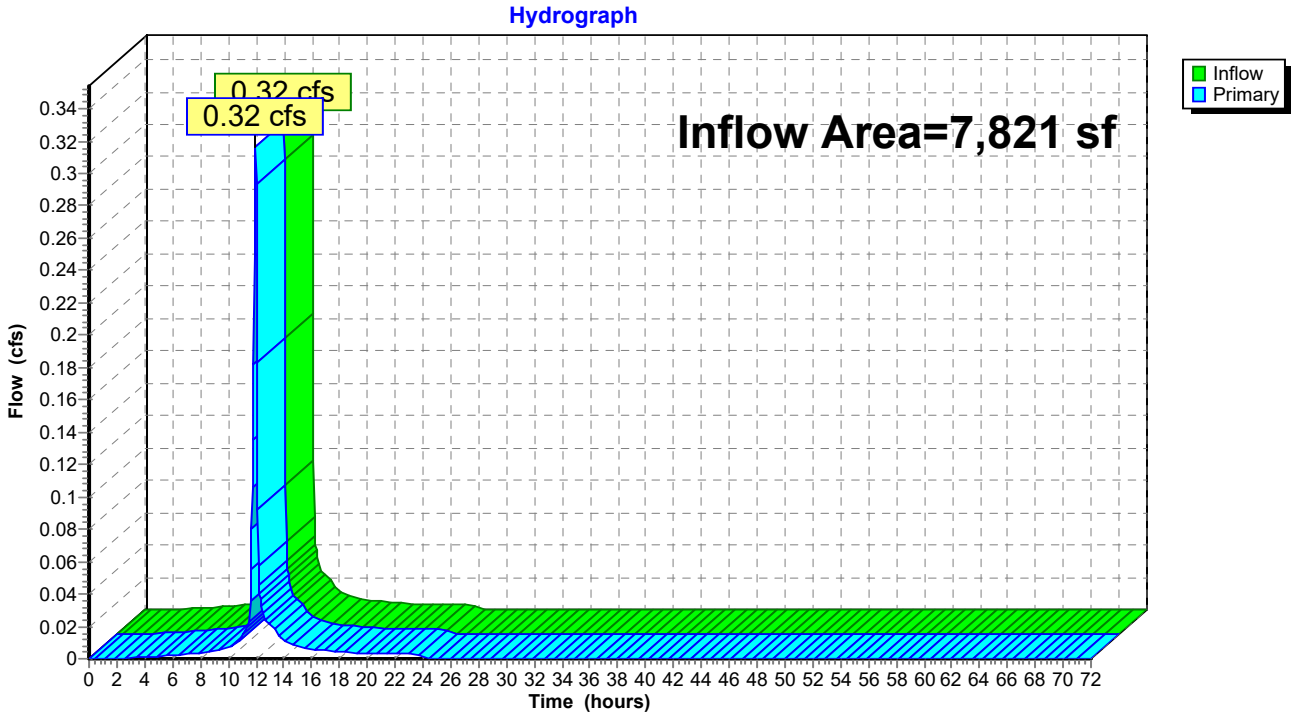


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 85.51% Impervious, Inflow Depth = 1.18" for 2 YEAR event
Inflow = 0.32 cfs @ 11.96 hrs, Volume= 770 cf
Primary = 0.32 cfs @ 11.96 hrs, Volume= 770 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

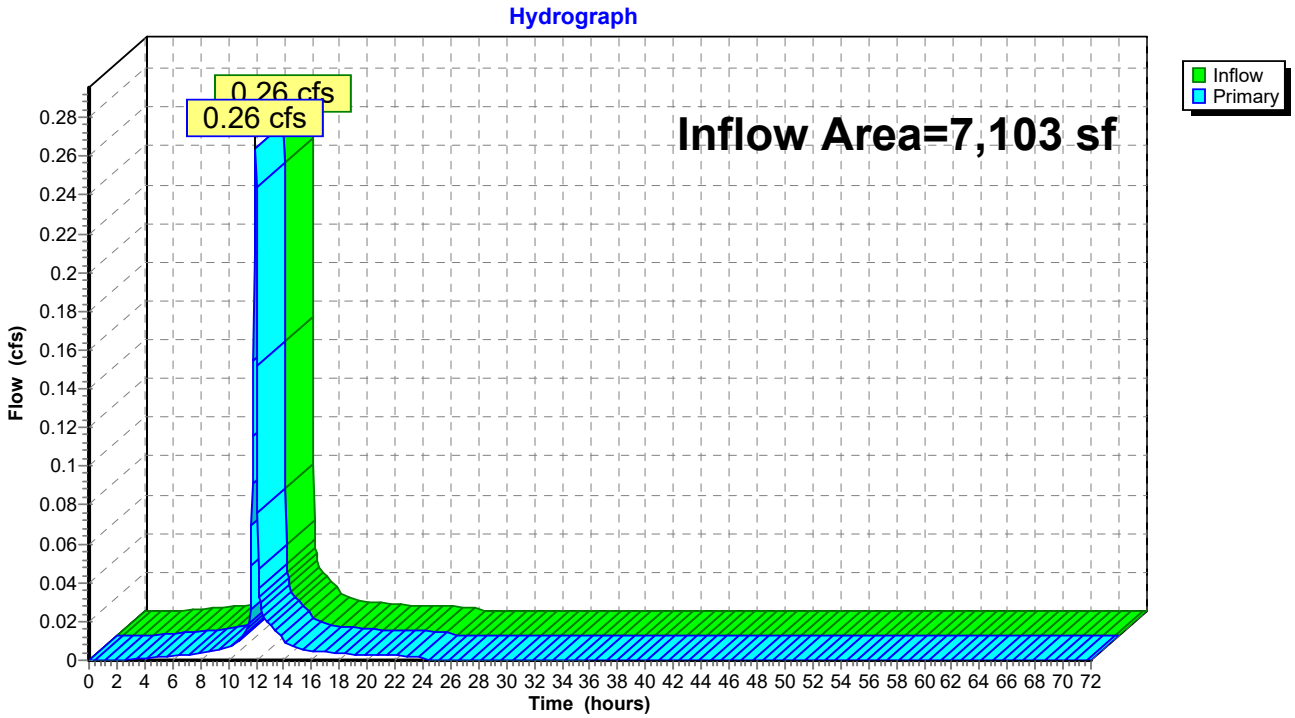


Summary for Pond 4P: DP1

Inflow Area = 7,103 sf, 89.96% Impervious, Inflow Depth = 1.11" for 2 YEAR event
Inflow = 0.26 cfs @ 11.96 hrs, Volume= 658 cf
Primary = 0.26 cfs @ 11.96 hrs, Volume= 658 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 4P: DP1



Summary for Pond 5P: buried Pond

Inflow Area = 4,409 sf, 86.71% Impervious, Inflow Depth = 2.60" for 2 YEAR event
Inflow = 0.41 cfs @ 11.96 hrs, Volume= 954 cf
Outflow = 0.02 cfs @ 13.05 hrs, Volume= 954 cf, Atten= 95%, Lag= 65.2 min
Discarded = 0.01 cfs @ 11.30 hrs, Volume= 927 cf
Primary = 0.01 cfs @ 13.05 hrs, Volume= 28 cf
Routed to Pond 4P : DP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 63.79' @ 13.05 hrs Surf.Area= 588 sf Storage= 465 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 288.1 min (1,066.2 - 778.1)

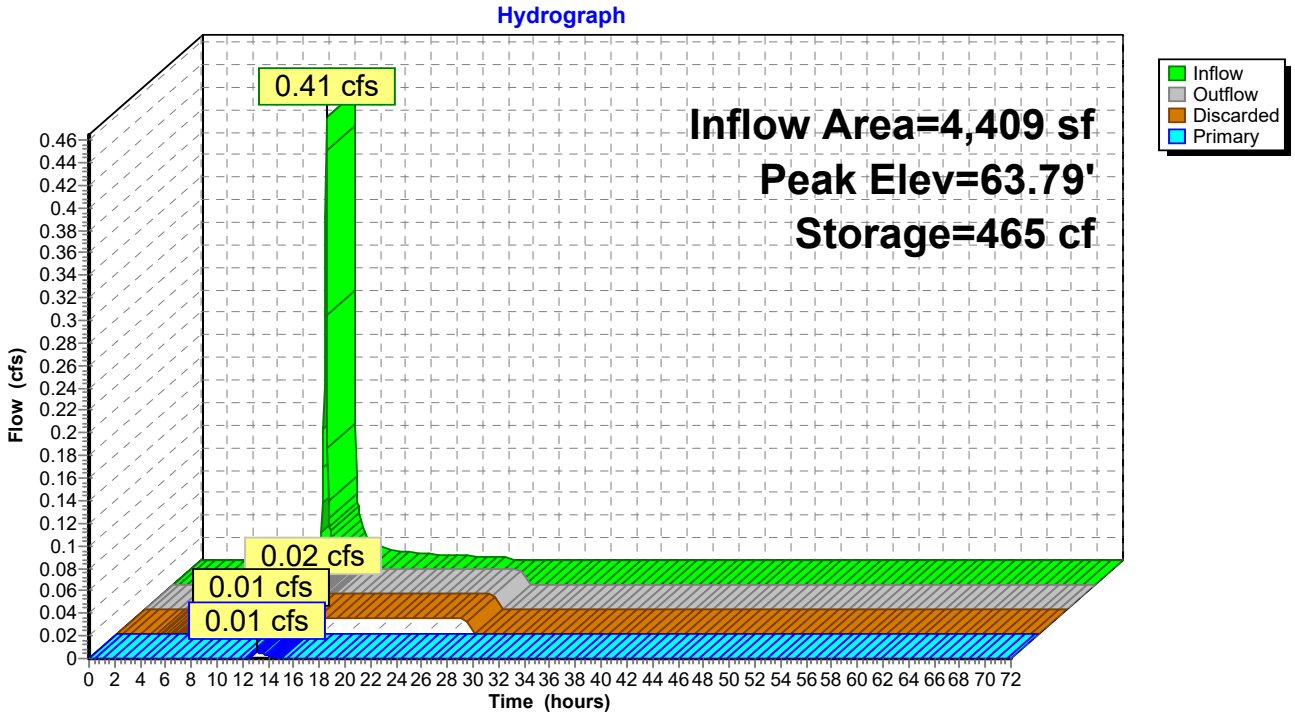
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	553 cf	**14.00'W x 42.00'L x 1.25'H Prismatoid** 735 cf Overall - 182 cf Embedded = 553 cf
#2	63.25'	182 cf	**8.0" Round Pipe Storage** x 13 Inside #1 L= 40.0'
		735 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.39' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	63.75'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	63.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 11.30 hrs HW=63.02' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.01 cfs @ 13.05 hrs HW=63.79' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.01 cfs of 1.63 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.69 fps)

Pond 5P: buried Pond

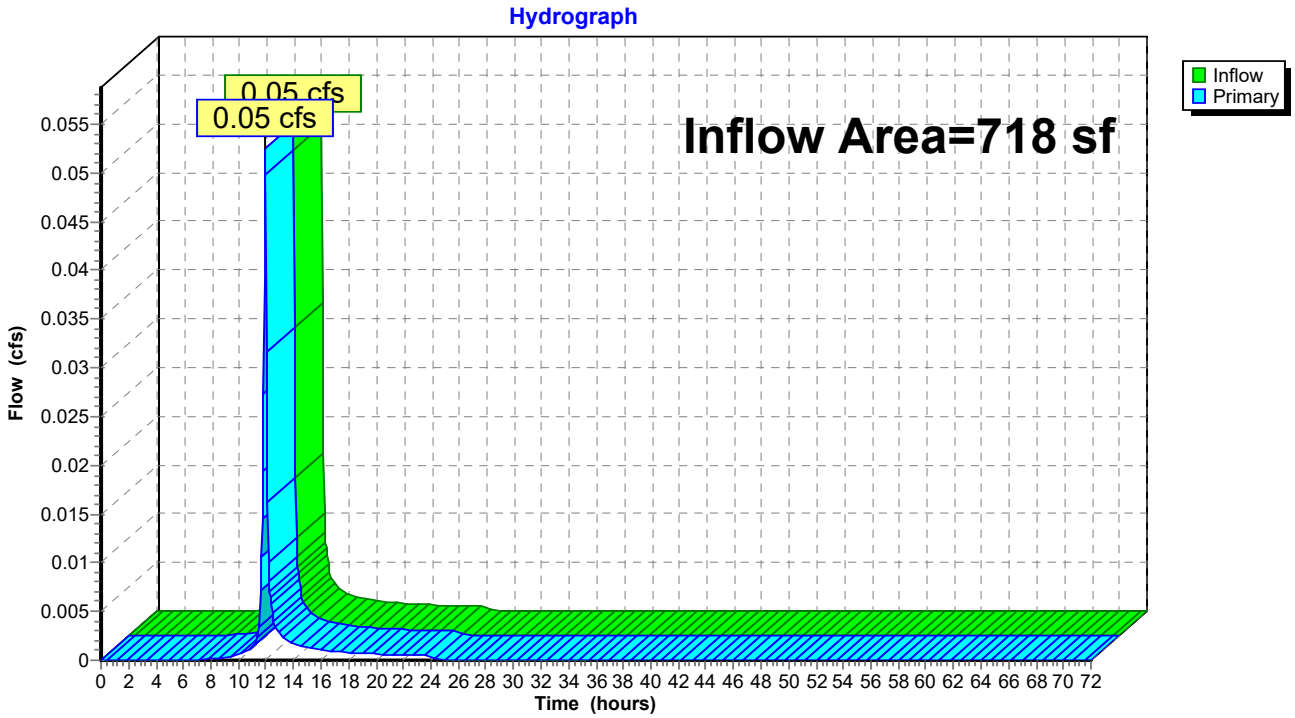


Summary for Pond 6P: DP2

Inflow Area = 718 sf, 41.50% Impervious, Inflow Depth = 1.87" for 2 YEAR event
Inflow = 0.05 cfs @ 11.97 hrs, Volume= 112 cf
Primary = 0.05 cfs @ 11.97 hrs, Volume= 112 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 6P: DP2



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: FRONT Runoff Area=2,694 sf 95.29% Impervious Runoff Depth=4.40"
Tc=6.0 min CN=97 Runoff=0.40 cfs 987 cf

Subcatchment P2: REAR Runoff Area=4,409 sf 86.71% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=95 Runoff=0.65 cfs 1,533 cf

Subcatchment P3: FLOW TO REAR Runoff Area=718 sf 41.50% Impervious Runoff Depth=3.33"
Tc=6.0 min CN=87 Runoff=0.09 cfs 199 cf

Pond 1P: OVERALL Inflow=0.55 cfs 1,609 cf
Primary=0.55 cfs 1,609 cf

Pond 4P: DP1 Inflow=0.47 cfs 1,409 cf
Primary=0.47 cfs 1,409 cf

Pond 5P: buried Pond Peak Elev=64.02' Storage=602 cf Inflow=0.65 cfs 1,533 cf
Discarded=0.01 cfs 1,111 cf Primary=0.24 cfs 422 cf Outflow=0.25 cfs 1,533 cf

Pond 6P: DP2 Inflow=0.09 cfs 199 cf
Primary=0.09 cfs 199 cf

Total Runoff Area = 7,821 sf Runoff Volume = 2,720 cf Average Runoff Depth = 4.17"
14.49% Pervious = 1,133 sf 85.51% Impervious = 6,688 sf

Summary for Subcatchment P1: FRONT

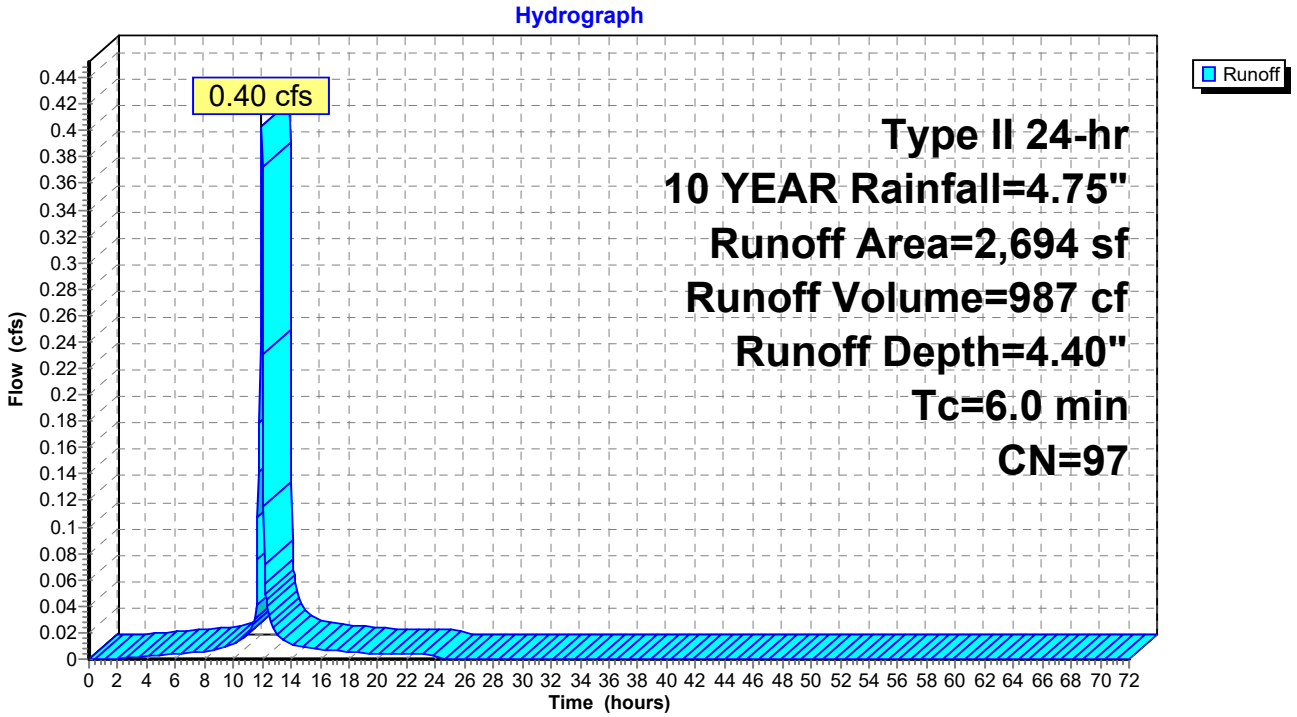
Runoff = 0.40 cfs @ 11.96 hrs, Volume= 987 cf, Depth= 4.40"
Routed to Pond 4P : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.75"

	Area (sf)	CN	Description
	1,856	98	Roofs, HSG C
*	165	98	Walk, HSG C
	546	98	Paved parking, HSG C
	127	79	50-75% Grass cover, Fair, HSG C
	2,694	97	Weighted Average
	127		4.71% Pervious Area
	2,567		95.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment P1: FRONT



Summary for Subcatchment P2: REAR

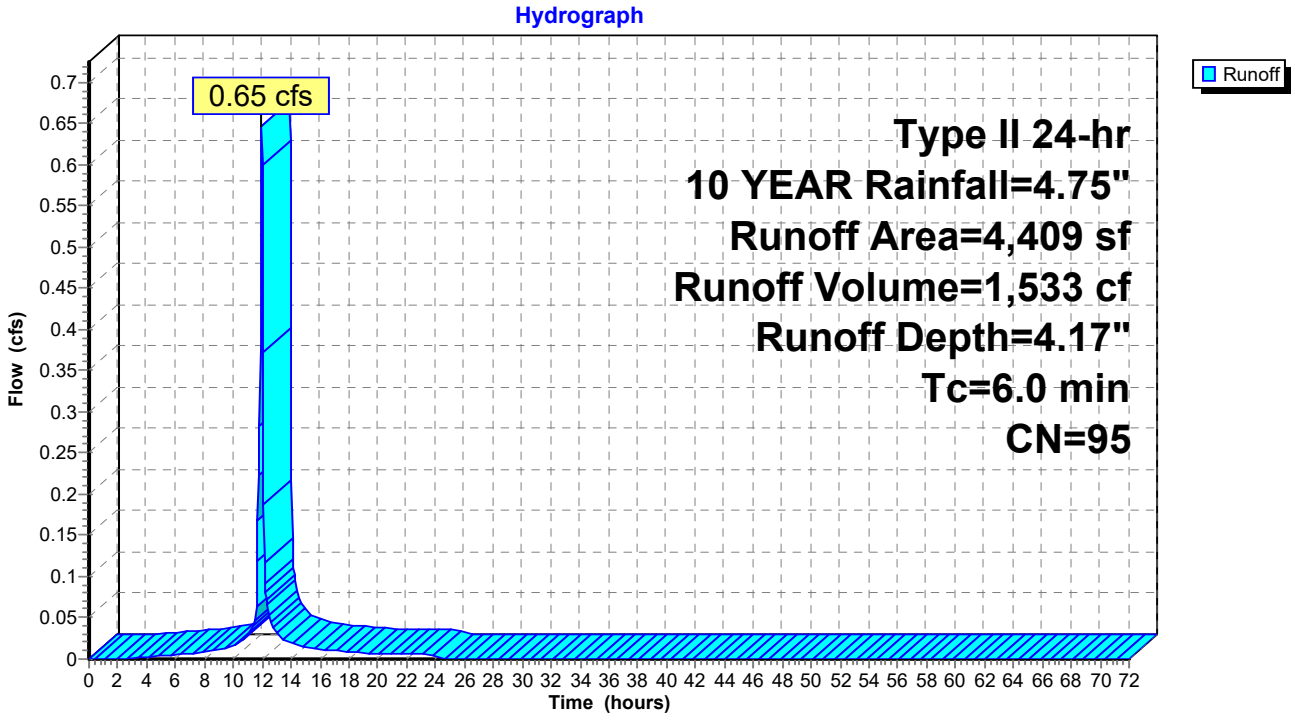
Runoff = 0.65 cfs @ 11.96 hrs, Volume= 1,533 cf, Depth= 4.17"
Routed to Pond 5P : buried Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.75"

Area (sf)	CN	Description
3,823	98	Paved parking, HSG C
586	74	>75% Grass cover, Good, HSG C
4,409	95	Weighted Average
586		13.29% Pervious Area
3,823		86.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P2: REAR



Summary for Subcatchment P3: FLOW TO REAR

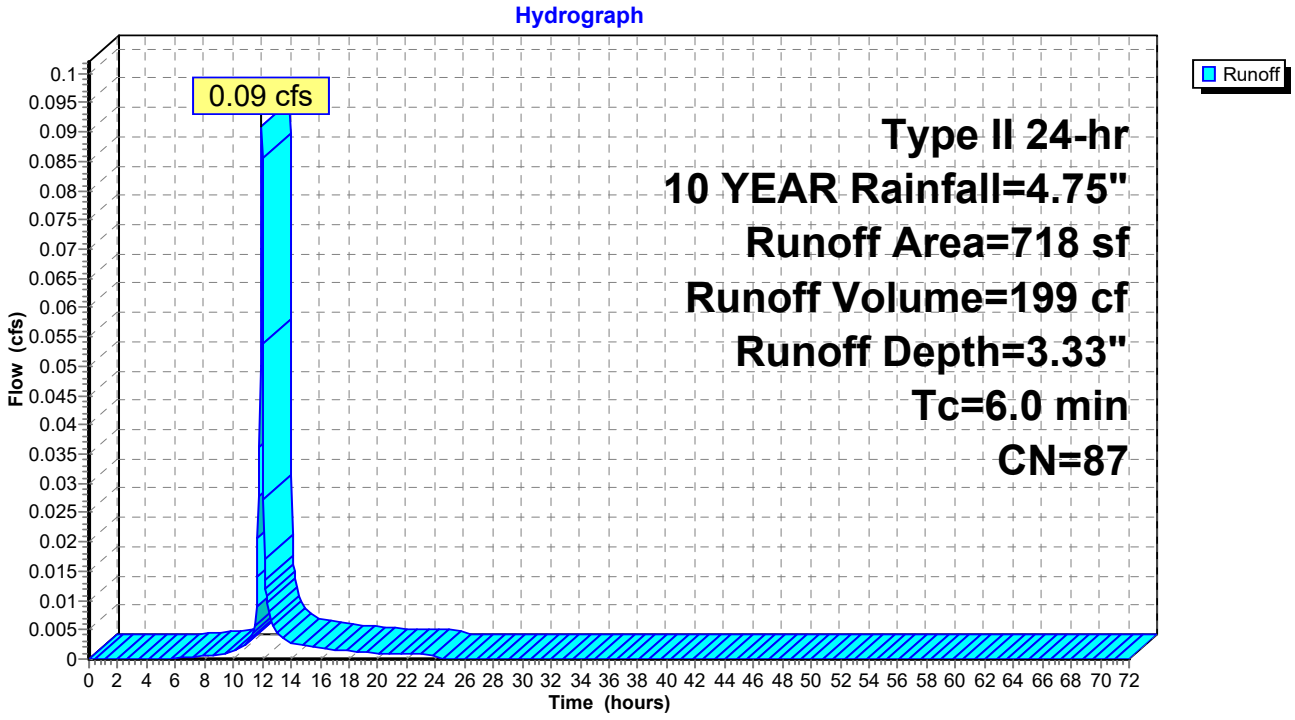
Runoff = 0.09 cfs @ 11.97 hrs, Volume= 199 cf, Depth= 3.33"
Routed to Pond 6P : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.75"

Area (sf)	CN	Description
420	79	50-75% Grass cover, Fair, HSG C
298	98	Paved parking, HSG C
718	87	Weighted Average
420		58.50% Pervious Area
298		41.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P3: FLOW TO REAR

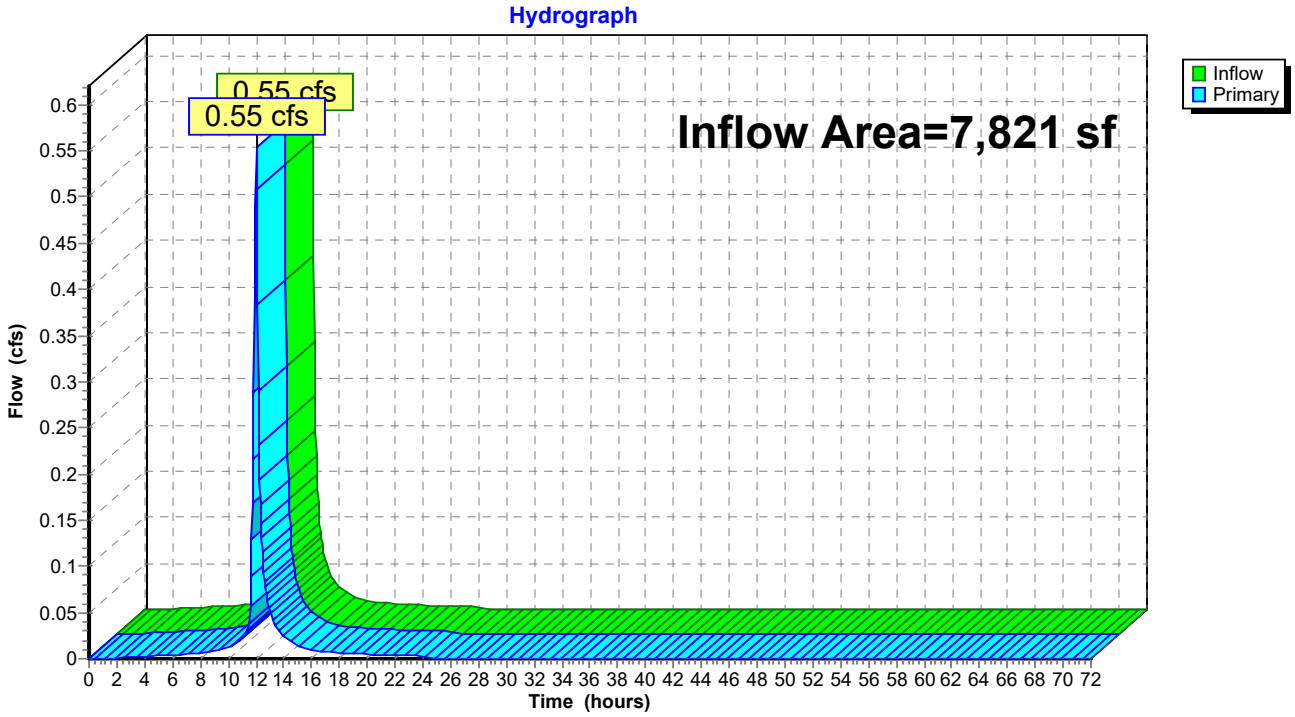


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 85.51% Impervious, Inflow Depth = 2.47" for 10 YEAR event
Inflow = 0.55 cfs @ 12.00 hrs, Volume= 1,609 cf
Primary = 0.55 cfs @ 12.00 hrs, Volume= 1,609 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

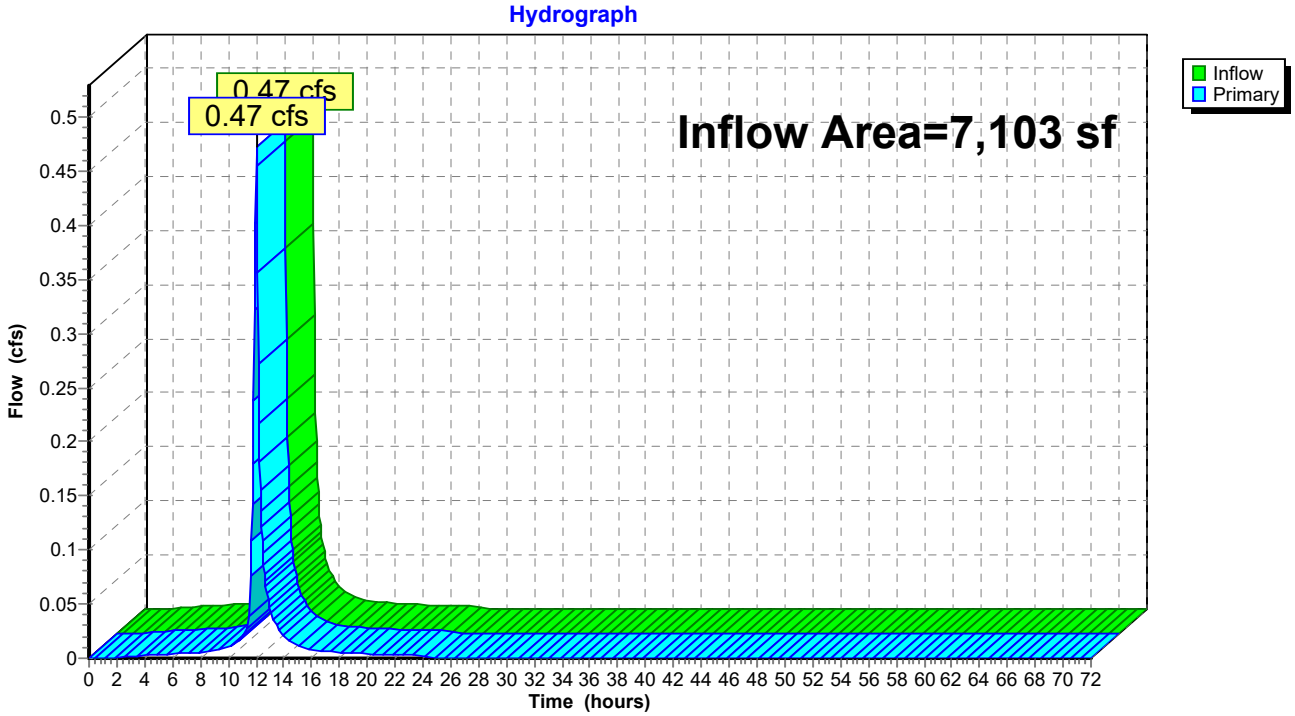


Summary for Pond 4P: DP1

Inflow Area = 7,103 sf, 89.96% Impervious, Inflow Depth = 2.38" for 10 YEAR event
Inflow = 0.47 cfs @ 12.02 hrs, Volume= 1,409 cf
Primary = 0.47 cfs @ 12.02 hrs, Volume= 1,409 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 4P: DP1



Summary for Pond 5P: buried Pond

Inflow Area = 4,409 sf, 86.71% Impervious, Inflow Depth = 4.17" for 10 YEAR event
Inflow = 0.65 cfs @ 11.96 hrs, Volume= 1,533 cf
Outflow = 0.25 cfs @ 12.09 hrs, Volume= 1,533 cf, Atten= 61%, Lag= 7.6 min
Discarded = 0.01 cfs @ 10.50 hrs, Volume= 1,111 cf
Primary = 0.24 cfs @ 12.09 hrs, Volume= 422 cf
Routed to Pond 4P : DP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 64.02' @ 12.09 hrs Surf.Area= 588 sf Storage= 602 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 226.3 min (992.3 - 766.0)

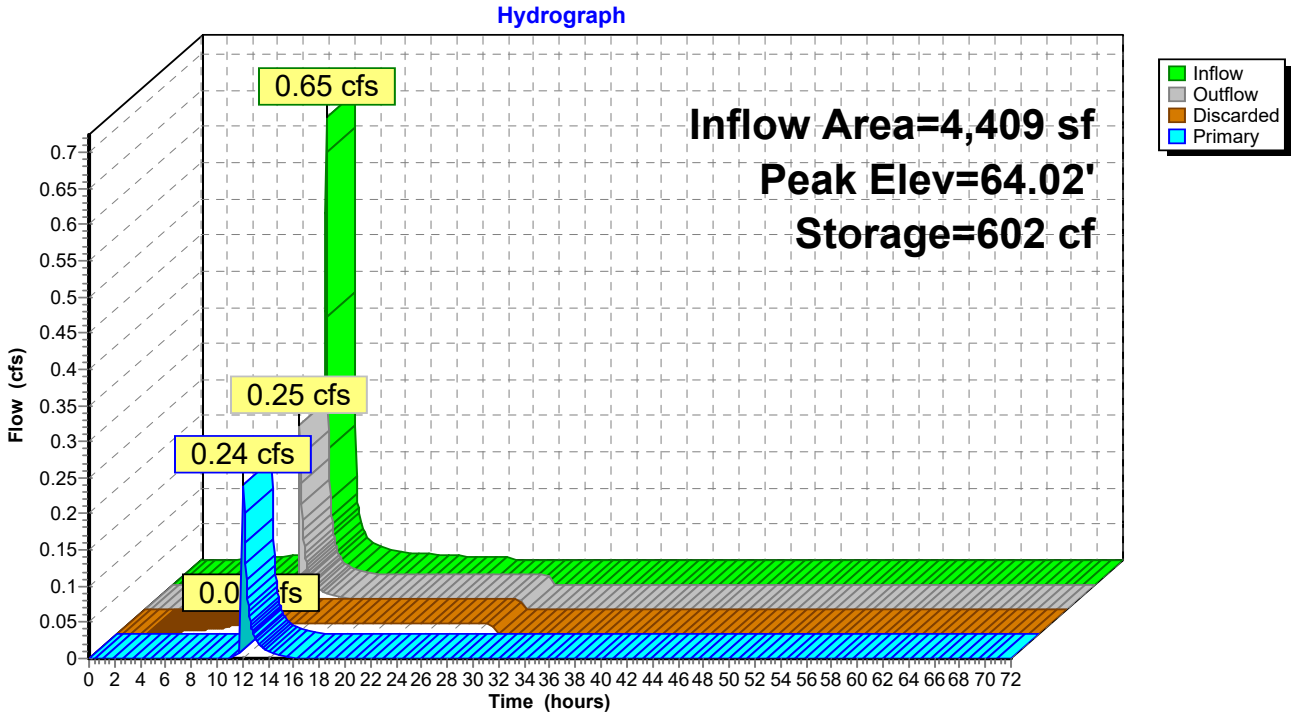
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	553 cf	**14.00'W x 42.00'L x 1.25'H Prismatoid** 735 cf Overall - 182 cf Embedded = 553 cf
#2	63.25'	182 cf	**8.0" Round Pipe Storage** x 13 Inside #1 L= 40.0'
		735 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.39' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	63.75'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	63.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 10.50 hrs HW=63.01' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.24 cfs @ 12.09 hrs HW=64.02' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.24 cfs of 1.70 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.24 cfs @ 1.77 fps)

Pond 5P: buried Pond

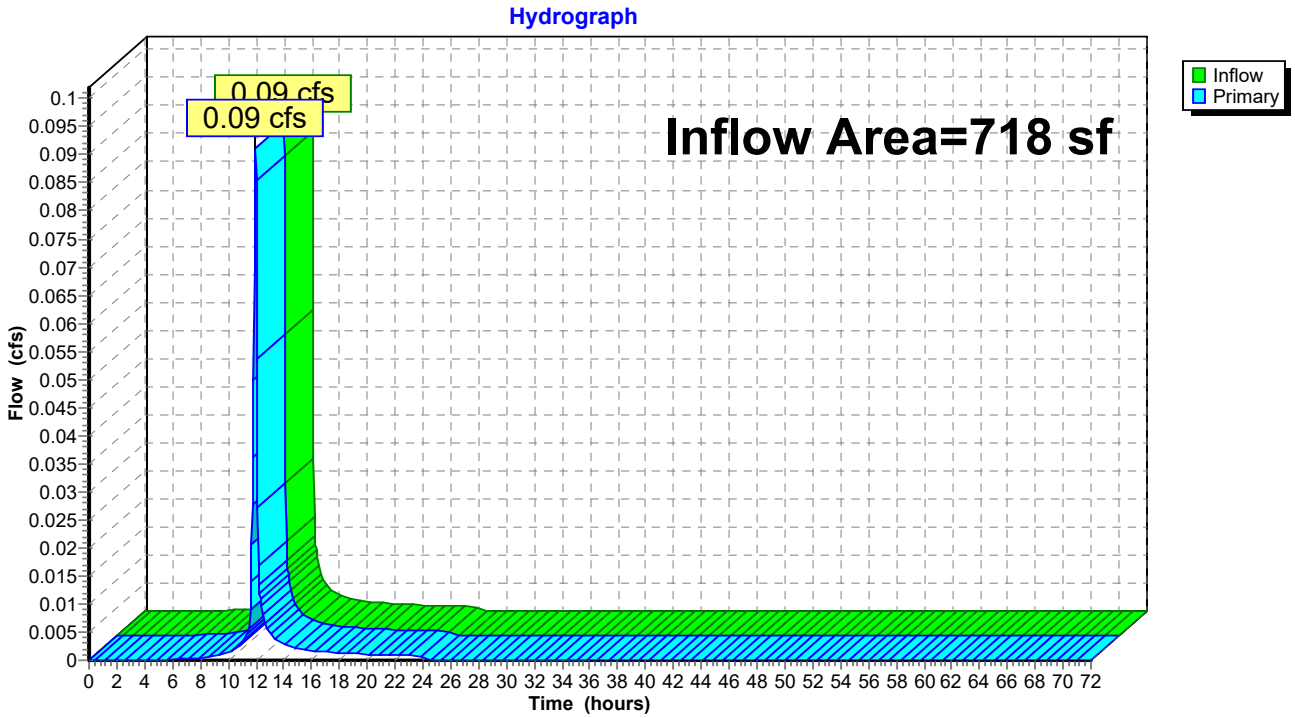


Summary for Pond 6P: DP2

Inflow Area = 718 sf, 41.50% Impervious, Inflow Depth = 3.33" for 10 YEAR event
Inflow = 0.09 cfs @ 11.97 hrs, Volume= 199 cf
Primary = 0.09 cfs @ 11.97 hrs, Volume= 199 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 6P: DP2



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: FRONT Runoff Area=2,694 sf 95.29% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=97 Runoff=0.51 cfs 1,269 cf

Subcatchment P2: REAR Runoff Area=4,409 sf 86.71% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=95 Runoff=0.83 cfs 1,992 cf

Subcatchment P3: FLOW TO REAR Runoff Area=718 sf 41.50% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=87 Runoff=0.12 cfs 271 cf

Pond 1P: OVERALL Inflow=1.04 cfs 2,308 cf
Primary=1.04 cfs 2,308 cf

Pond 4P: DP1 Inflow=0.93 cfs 2,037 cf
Primary=0.93 cfs 2,037 cf

Pond 5P: buried Pond Peak Elev=64.18' Storage=692 cf Inflow=0.83 cfs 1,992 cf
Discarded=0.01 cfs 1,225 cf Primary=0.53 cfs 768 cf Outflow=0.54 cfs 1,993 cf

Pond 6P: DP2 Inflow=0.12 cfs 271 cf
Primary=0.12 cfs 271 cf

Total Runoff Area = 7,821 sf Runoff Volume = 3,532 cf Average Runoff Depth = 5.42"
14.49% Pervious = 1,133 sf 85.51% Impervious = 6,688 sf

Summary for Subcatchment P1: FRONT

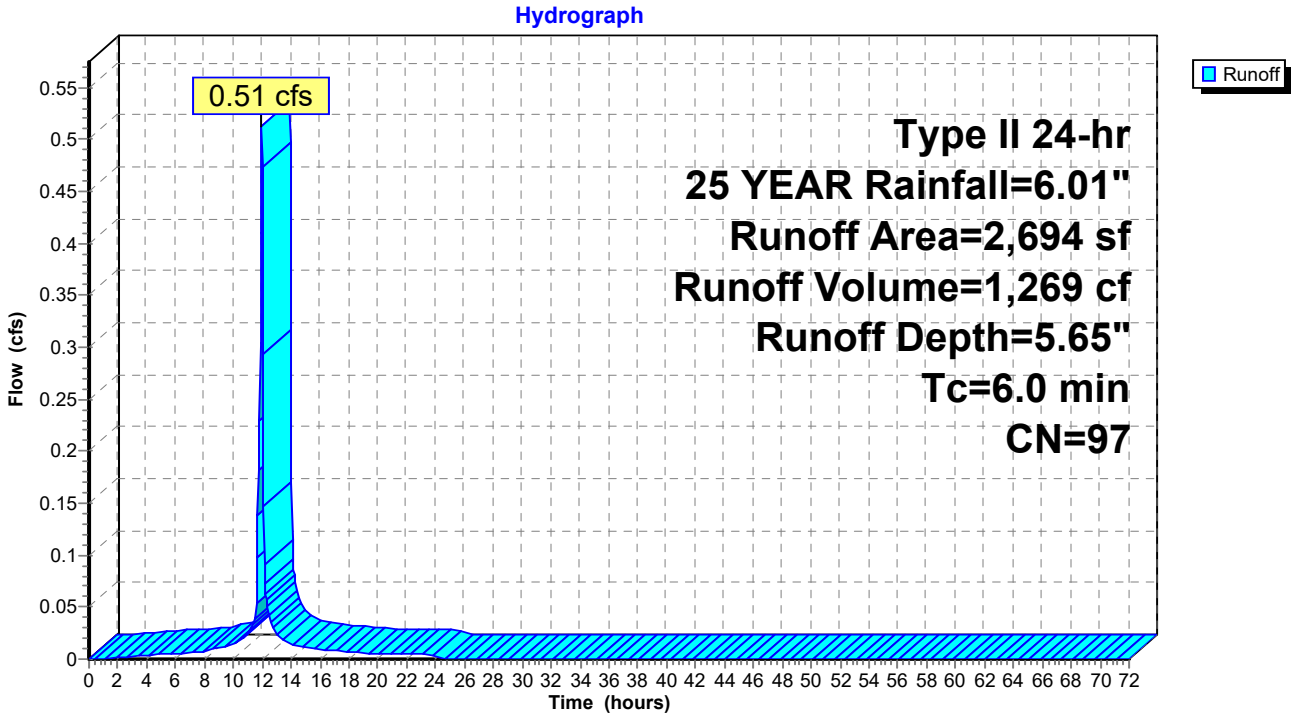
Runoff = 0.51 cfs @ 11.96 hrs, Volume= 1,269 cf, Depth= 5.65"
Routed to Pond 4P : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=6.01"

	Area (sf)	CN	Description
	1,856	98	Roofs, HSG C
*	165	98	Walk, HSG C
	546	98	Paved parking, HSG C
	127	79	50-75% Grass cover, Fair, HSG C
	2,694	97	Weighted Average
	127		4.71% Pervious Area
	2,567		95.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment P1: FRONT



Summary for Subcatchment P2: REAR

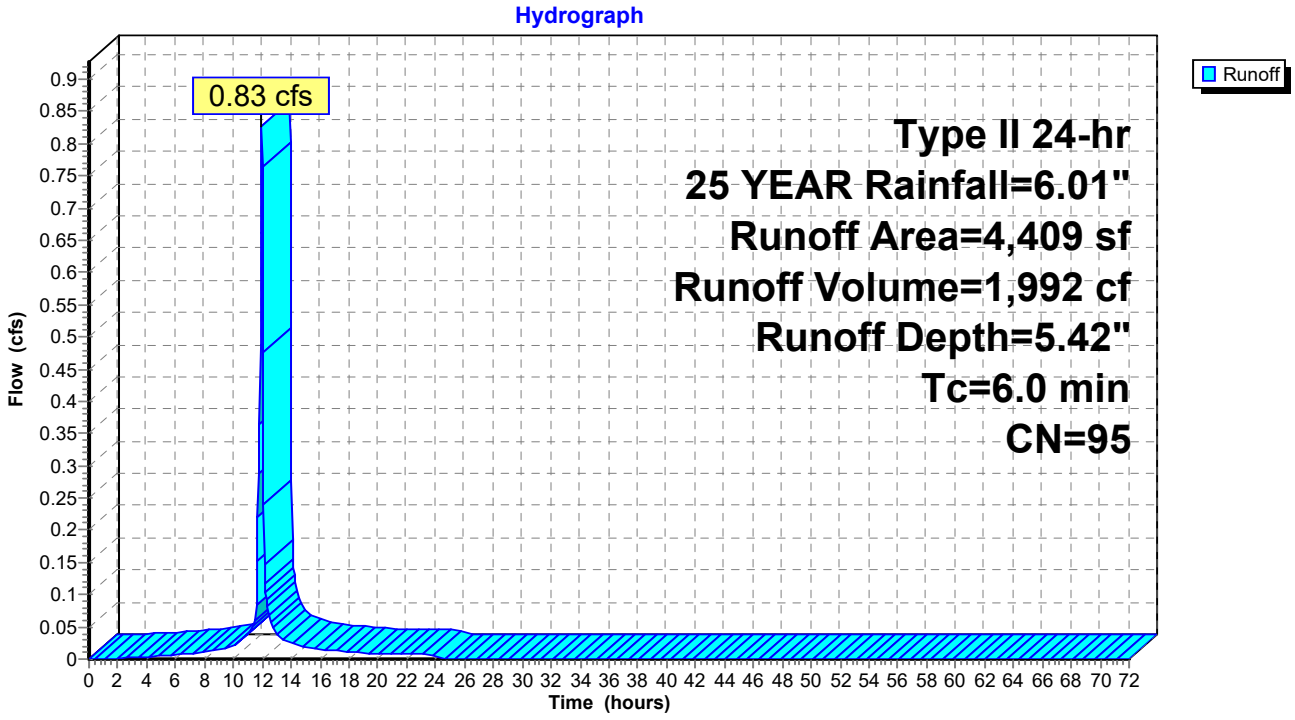
Runoff = 0.83 cfs @ 11.96 hrs, Volume= 1,992 cf, Depth= 5.42"
Routed to Pond 5P : buried Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=6.01"

Area (sf)	CN	Description
3,823	98	Paved parking, HSG C
586	74	>75% Grass cover, Good, HSG C
4,409	95	Weighted Average
586		13.29% Pervious Area
3,823		86.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P2: REAR



Summary for Subcatchment P3: FLOW TO REAR

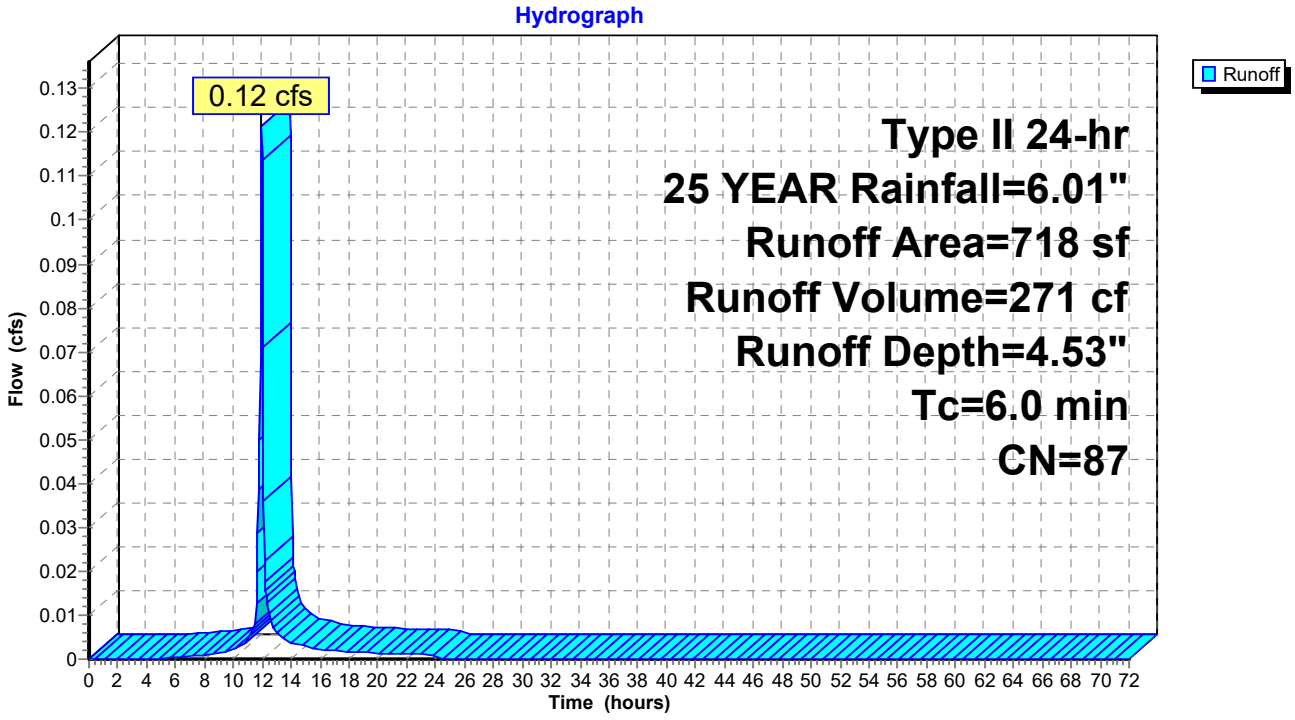
Runoff = 0.12 cfs @ 11.96 hrs, Volume= 271 cf, Depth= 4.53"
Routed to Pond 6P : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=6.01"

Area (sf)	CN	Description
420	79	50-75% Grass cover, Fair, HSG C
298	98	Paved parking, HSG C
718	87	Weighted Average
420		58.50% Pervious Area
298		41.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P3: FLOW TO REAR

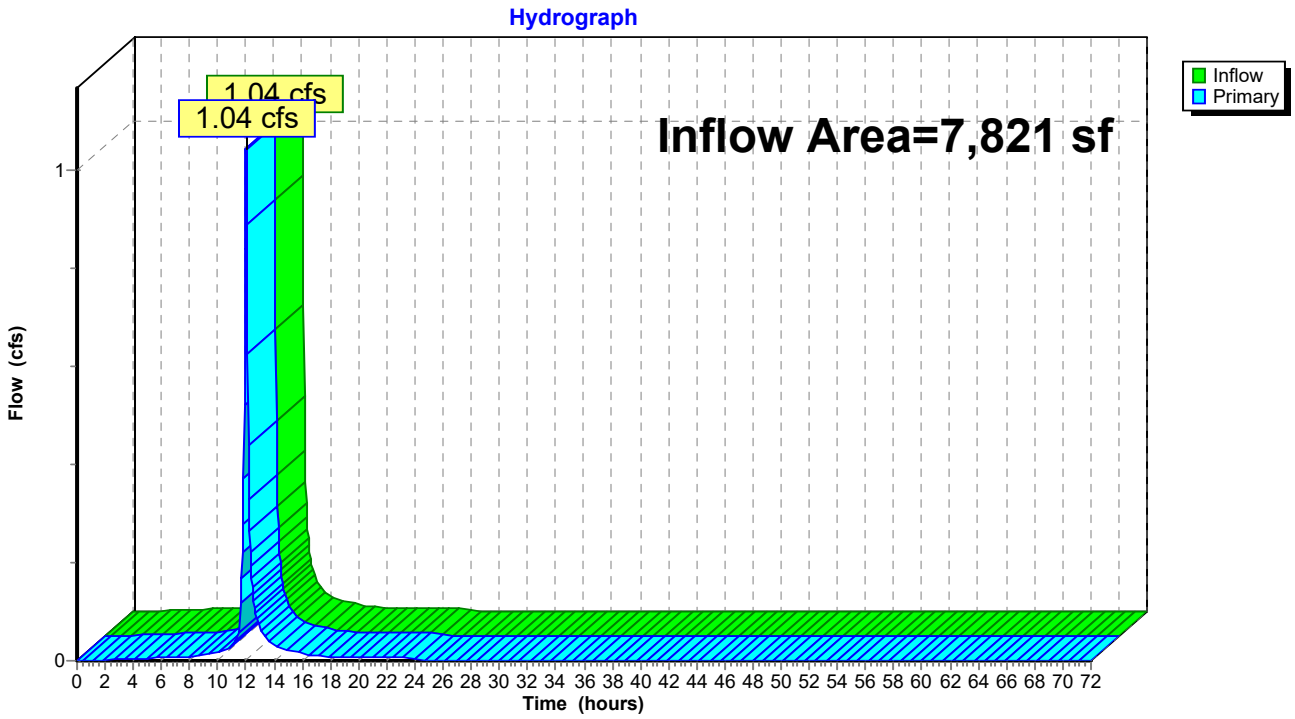


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 85.51% Impervious, Inflow Depth = 3.54" for 25 YEAR event
Inflow = 1.04 cfs @ 12.00 hrs, Volume= 2,308 cf
Primary = 1.04 cfs @ 12.00 hrs, Volume= 2,308 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

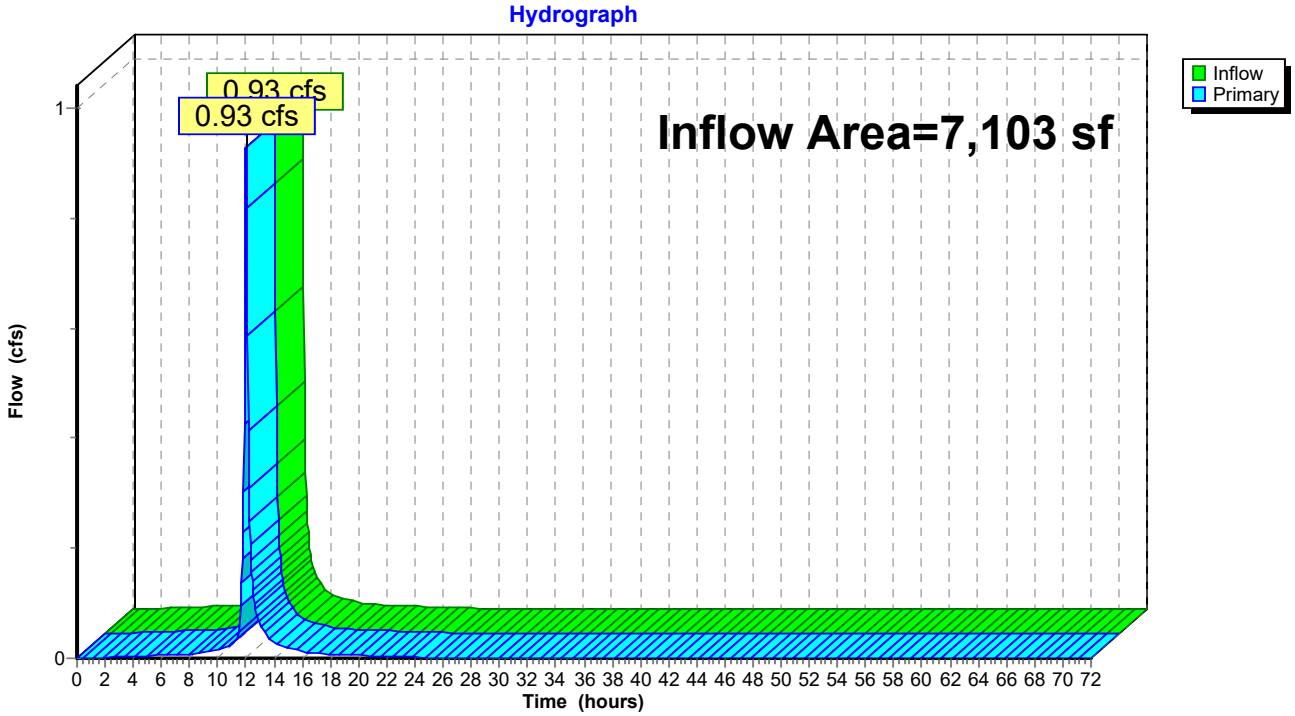


Summary for Pond 4P: DP1

Inflow Area = 7,103 sf, 89.96% Impervious, Inflow Depth = 3.44" for 25 YEAR event
Inflow = 0.93 cfs @ 12.01 hrs, Volume= 2,037 cf
Primary = 0.93 cfs @ 12.01 hrs, Volume= 2,037 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 4P: DP1



Summary for Pond 5P: buried Pond

Inflow Area = 4,409 sf, 86.71% Impervious, Inflow Depth = 5.42" for 25 YEAR event
Inflow = 0.83 cfs @ 11.96 hrs, Volume= 1,992 cf
Outflow = 0.54 cfs @ 12.05 hrs, Volume= 1,993 cf, Atten= 35%, Lag= 5.1 min
Discarded = 0.01 cfs @ 9.65 hrs, Volume= 1,225 cf
Primary = 0.53 cfs @ 12.05 hrs, Volume= 768 cf
Routed to Pond 4P : DP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 64.18' @ 12.05 hrs Surf.Area= 588 sf Storage= 692 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 197.8 min (957.6 - 759.9)

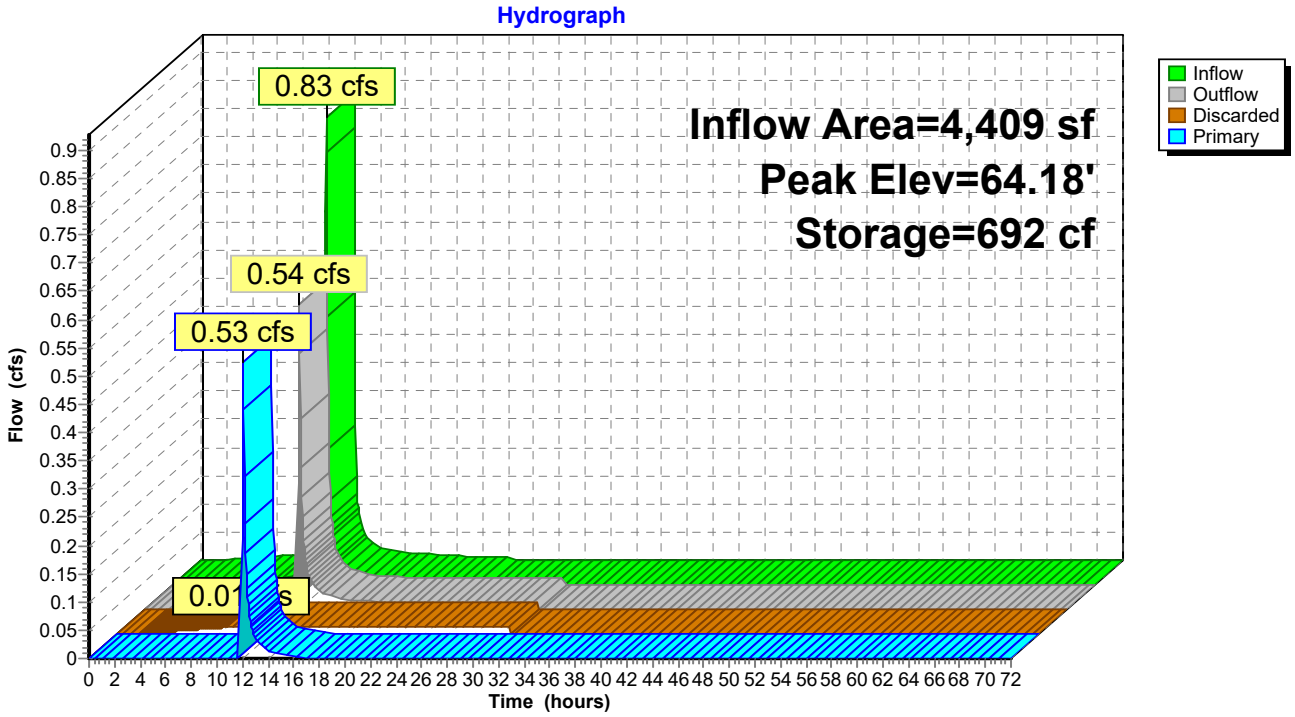
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	553 cf	**14.00'W x 42.00'L x 1.25'H Prismatoid** 735 cf Overall - 182 cf Embedded = 553 cf
#2	63.25'	182 cf	**8.0" Round Pipe Storage** x 13 Inside #1 L= 40.0'
		735 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.39' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	63.75'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	63.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 9.65 hrs HW=63.01' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.52 cfs @ 12.05 hrs HW=64.18' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.52 cfs of 1.74 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.52 cfs @ 2.22 fps)

Pond 5P: buried Pond

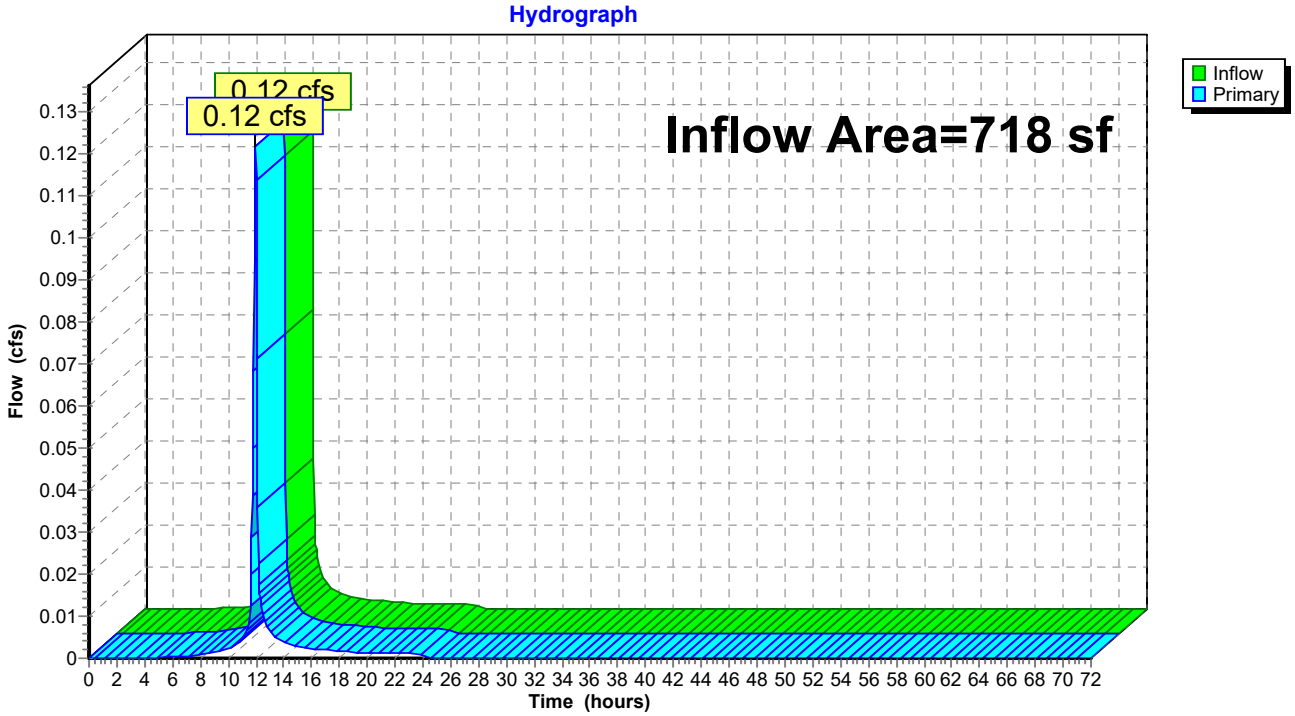


Summary for Pond 6P: DP2

Inflow Area = 718 sf, 41.50% Impervious, Inflow Depth = 4.53" for 25 YEAR event
Inflow = 0.12 cfs @ 11.96 hrs, Volume= 271 cf
Primary = 0.12 cfs @ 11.96 hrs, Volume= 271 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 6P: DP2



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: FRONT Runoff Area=2,694 sf 95.29% Impervious Runoff Depth=6.82"
Tc=6.0 min CN=97 Runoff=0.61 cfs 1,531 cf

Subcatchment P2: REAR Runoff Area=4,409 sf 86.71% Impervious Runoff Depth=6.58"
Tc=6.0 min CN=95 Runoff=1.00 cfs 2,419 cf

Subcatchment P3: FLOW TO REAR Runoff Area=718 sf 41.50% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=87 Runoff=0.15 cfs 338 cf

Pond 1P: OVERALL Inflow=1.56 cfs 2,979 cf
Primary=1.56 cfs 2,979 cf

Pond 4P: DP1 Inflow=1.42 cfs 2,640 cf
Primary=1.42 cfs 2,640 cf

Pond 5P: buried Pond Peak Elev=64.34' Storage=735 cf Inflow=1.00 cfs 2,419 cf
Discarded=0.01 cfs 1,312 cf Primary=0.85 cfs 1,109 cf Outflow=0.87 cfs 2,420 cf

Pond 6P: DP2 Inflow=0.15 cfs 338 cf
Primary=0.15 cfs 338 cf

Total Runoff Area = 7,821 sf Runoff Volume = 4,289 cf Average Runoff Depth = 6.58"
14.49% Pervious = 1,133 sf 85.51% Impervious = 6,688 sf

Summary for Subcatchment P1: FRONT

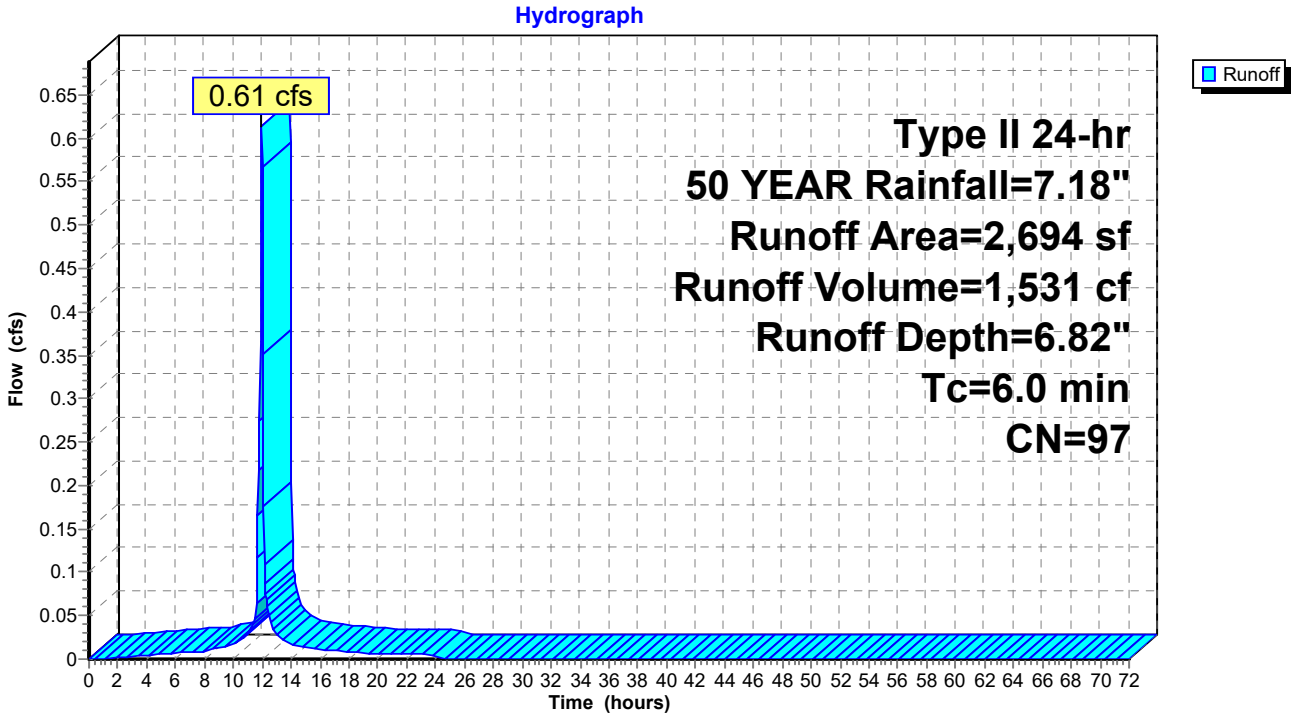
Runoff = 0.61 cfs @ 11.96 hrs, Volume= 1,531 cf, Depth= 6.82"
Routed to Pond 4P : DP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 YEAR Rainfall=7.18"

	Area (sf)	CN	Description
	1,856	98	Roofs, HSG C
*	165	98	Walk, HSG C
	546	98	Paved parking, HSG C
	127	79	50-75% Grass cover, Fair, HSG C
	2,694	97	Weighted Average
	127		4.71% Pervious Area
	2,567		95.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, flow to street**

Subcatchment P1: FRONT



Summary for Subcatchment P2: REAR

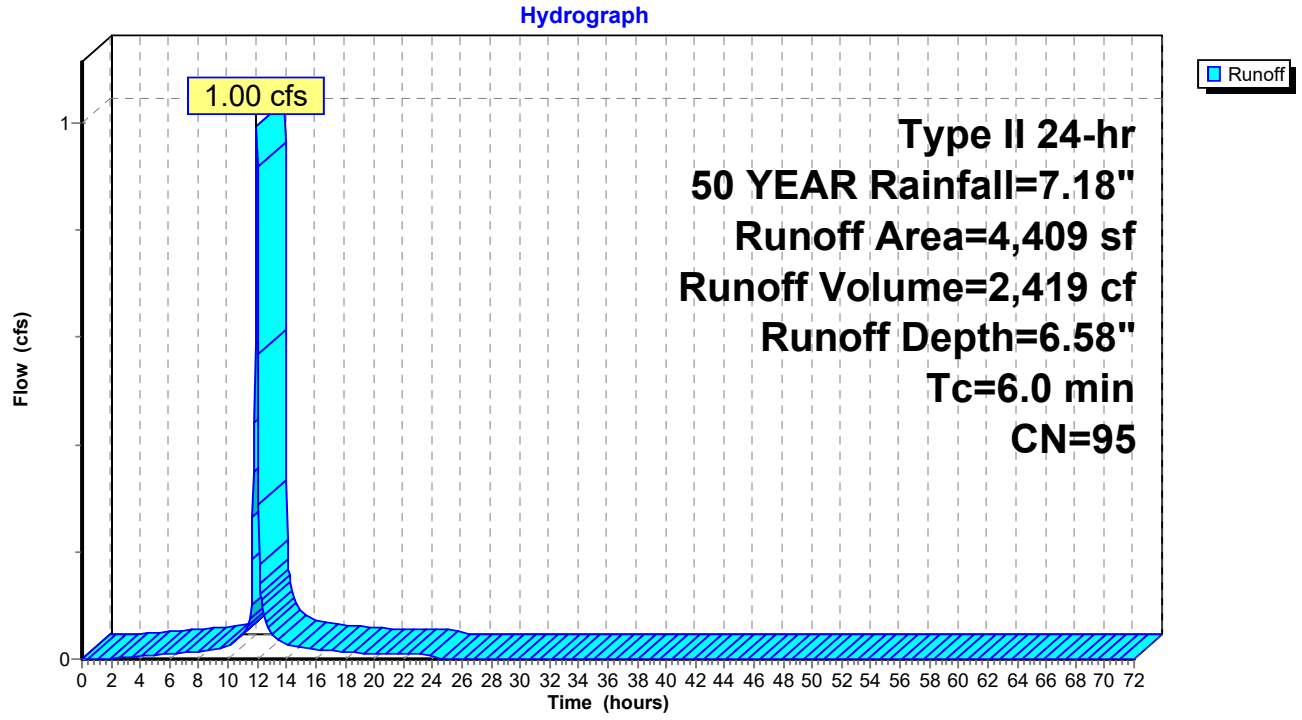
Runoff = 1.00 cfs @ 11.96 hrs, Volume= 2,419 cf, Depth= 6.58"
Routed to Pond 5P : buried Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 YEAR Rainfall=7.18"

Area (sf)	CN	Description
3,823	98	Paved parking, HSG C
586	74	>75% Grass cover, Good, HSG C
4,409	95	Weighted Average
586		13.29% Pervious Area
3,823		86.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P2: REAR



Summary for Subcatchment P3: FLOW TO REAR

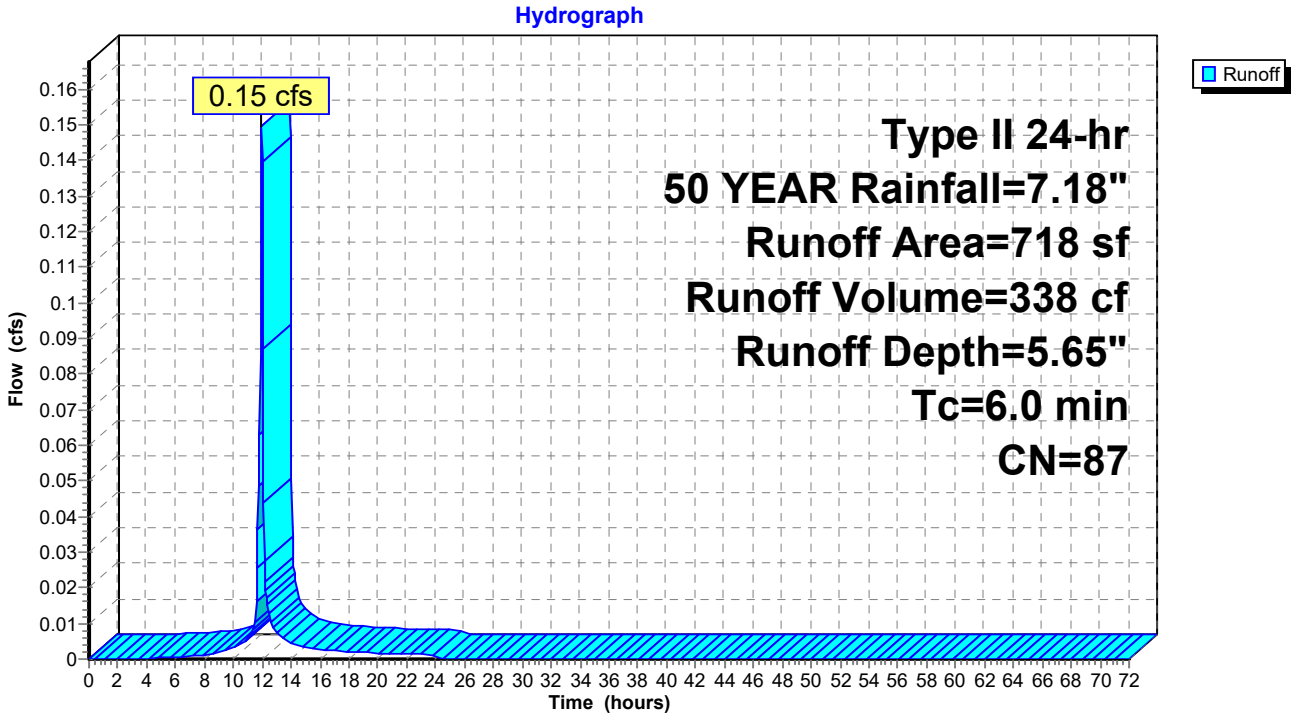
Runoff = 0.15 cfs @ 11.96 hrs, Volume= 338 cf, Depth= 5.65"
Routed to Pond 6P : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 YEAR Rainfall=7.18"

Area (sf)	CN	Description
420	79	50-75% Grass cover, Fair, HSG C
298	98	Paved parking, HSG C
718	87	Weighted Average
420		58.50% Pervious Area
298		41.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, FLOW TO REAR**

Subcatchment P3: FLOW TO REAR

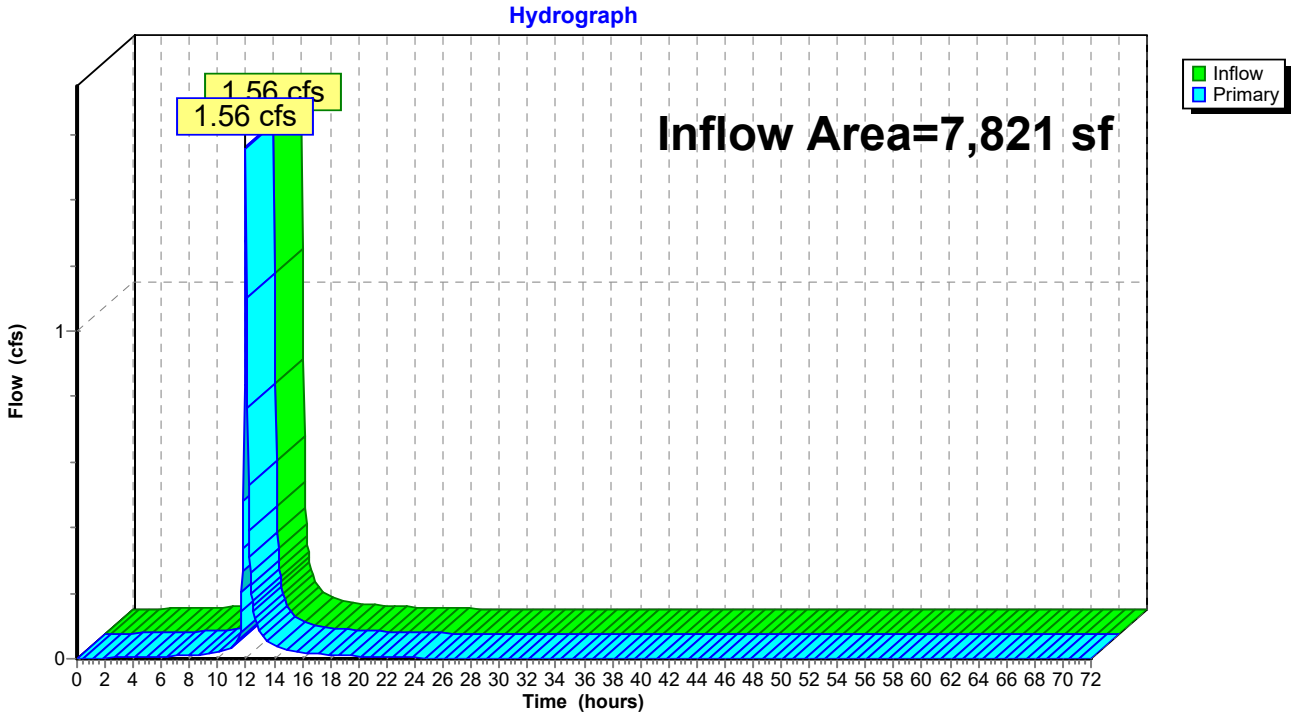


Summary for Pond 1P: OVERALL

Inflow Area = 7,821 sf, 85.51% Impervious, Inflow Depth = 4.57" for 50 YEAR event
Inflow = 1.56 cfs @ 11.99 hrs, Volume= 2,979 cf
Primary = 1.56 cfs @ 11.99 hrs, Volume= 2,979 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: OVERALL

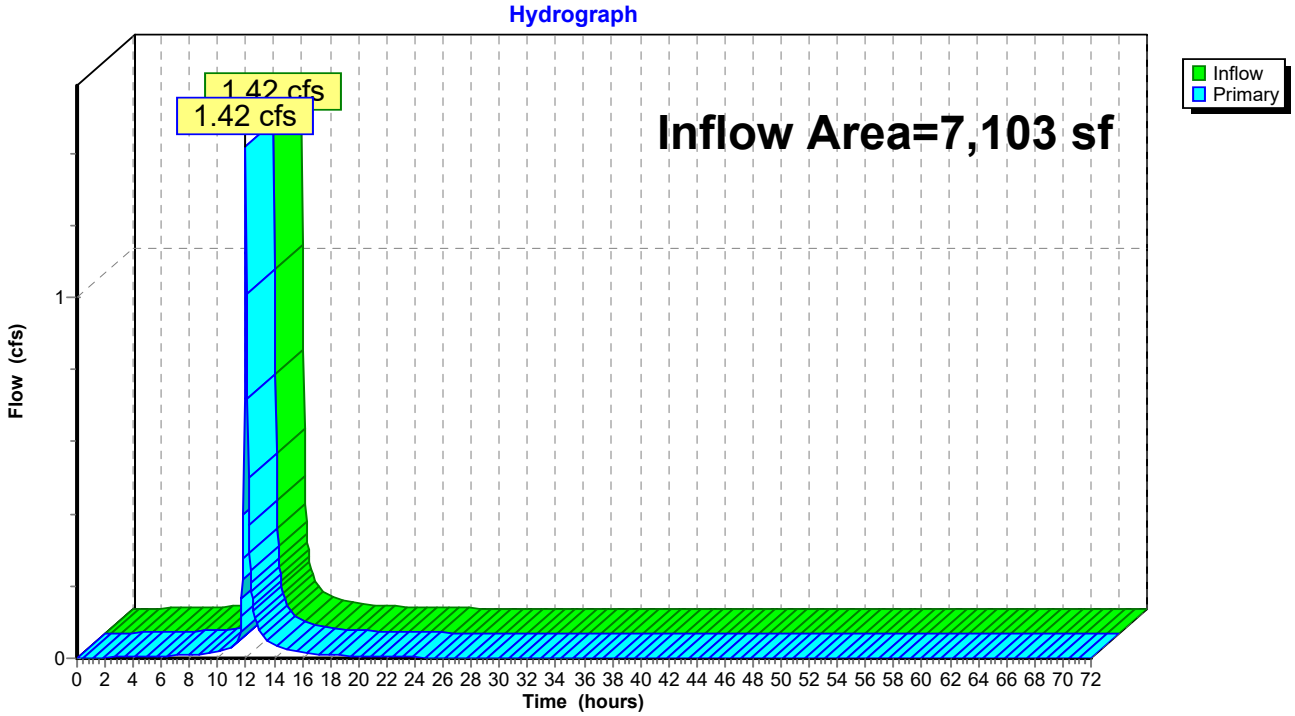


Summary for Pond 4P: DP1

Inflow Area = 7,103 sf, 89.96% Impervious, Inflow Depth = 4.46" for 50 YEAR event
Inflow = 1.42 cfs @ 12.00 hrs, Volume= 2,640 cf
Primary = 1.42 cfs @ 12.00 hrs, Volume= 2,640 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 4P: DP1



Summary for Pond 5P: buried Pond

Inflow Area = 4,409 sf, 86.71% Impervious, Inflow Depth = 6.58" for 50 YEAR event
Inflow = 1.00 cfs @ 11.96 hrs, Volume= 2,419 cf
Outflow = 0.87 cfs @ 12.01 hrs, Volume= 2,420 cf, Atten= 13%, Lag= 2.7 min
Discarded = 0.01 cfs @ 8.95 hrs, Volume= 1,312 cf
Primary = 0.85 cfs @ 12.01 hrs, Volume= 1,109 cf
Routed to Pond 4P : DP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 64.34' @ 12.01 hrs Surf.Area= 588 sf Storage= 735 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 178.2 min (933.8 - 755.6)

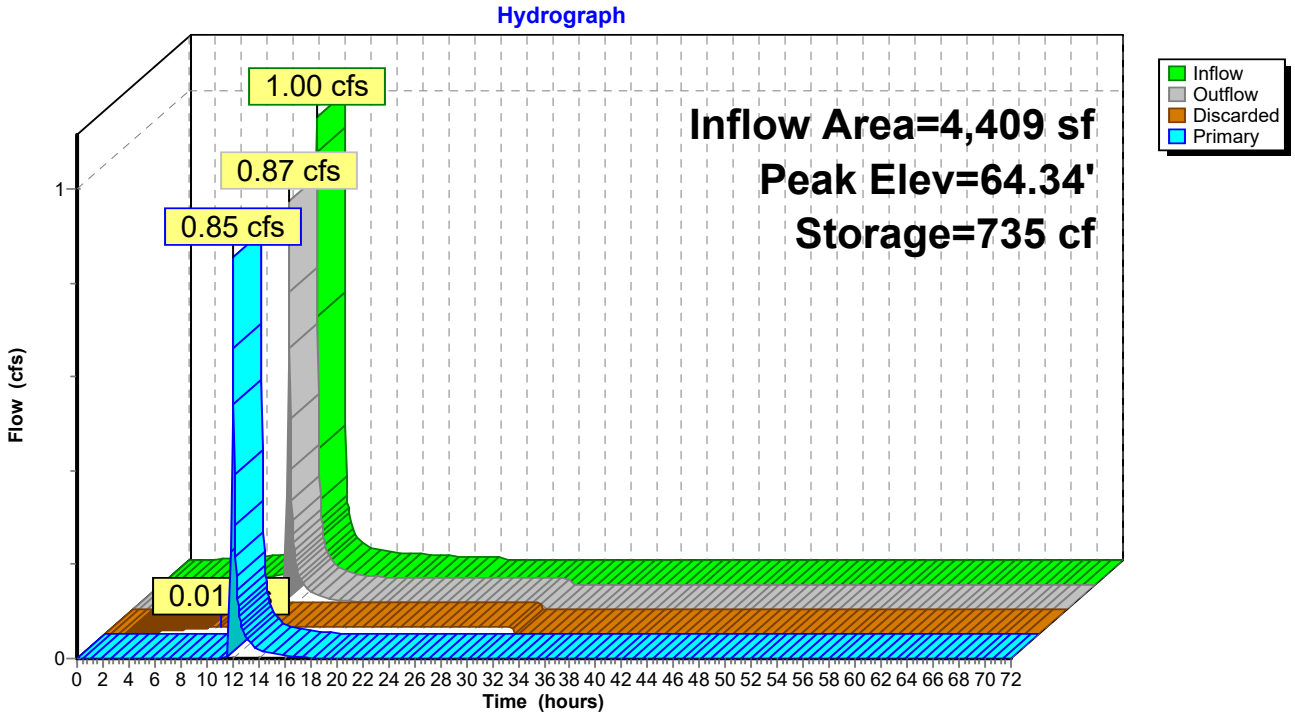
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	553 cf	**14.00'W x 42.00'L x 1.25'H Prismatoid** 735 cf Overall - 182 cf Embedded = 553 cf
#2	63.25'	182 cf	**8.0" Round Pipe Storage** x 13 Inside #1 L= 40.0'
		735 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.39' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	63.75'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	63.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 8.95 hrs HW=63.01' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.82 cfs @ 12.01 hrs HW=64.32' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.82 cfs of 1.78 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.82 cfs @ 2.58 fps)

Pond 5P: buried Pond

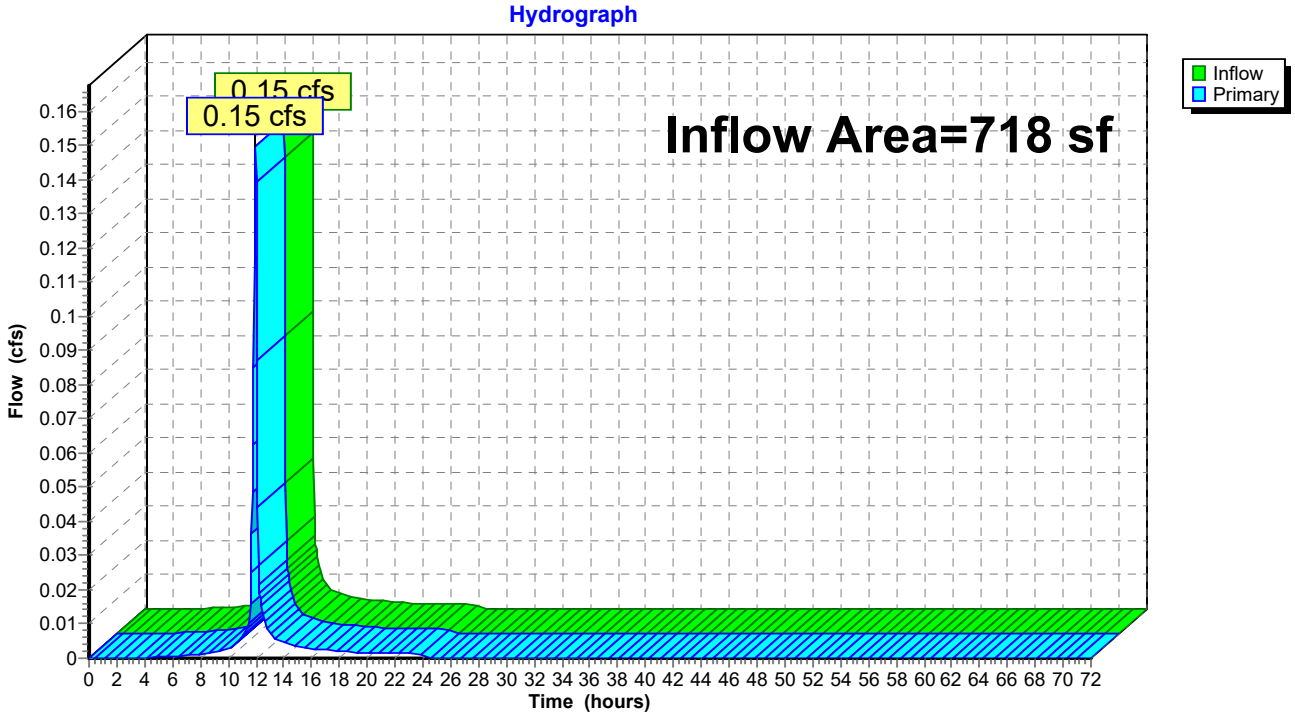


Summary for Pond 6P: DP2

Inflow Area = 718 sf, 41.50% Impervious, Inflow Depth = 5.65" for 50 YEAR event
Inflow = 0.15 cfs @ 11.96 hrs, Volume= 338 cf
Primary = 0.15 cfs @ 11.96 hrs, Volume= 338 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : OVERALL

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 6P: DP2



Stage-Area-Storage for Pond 5P: buried Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
63.00	**588**	0
63.02	588	12
63.04	588	24
63.06	588	35
63.08	588	47
63.10	588	59
63.12	588	71
63.14	588	82
63.16	588	94
63.18	588	106
63.20	588	118
63.22	588	129
63.24	588	141
63.26	588	153
63.28	588	165
63.30	588	176
63.32	588	188
63.34	588	200
63.36	588	212
63.38	588	223
63.40	588	235
63.42	588	247
63.44	588	259
63.46	588	270
63.48	588	282
63.50	588	294
63.52	588	306
63.54	588	318
63.56	588	329
63.58	588	341
63.60	588	353
63.62	588	365
63.64	588	376
63.66	588	388
63.68	588	400
63.70	588	412
63.72	588	423
63.74	588	435
63.76	588	447
63.78	588	459
63.80	588	470
63.82	588	482
63.84	588	494
63.86	588	506
63.88	588	517
63.90	588	529
63.92	588	541
63.94	588	553
63.96	588	564
63.98	588	576
64.00	588	588
64.02	588	600
64.04	588	612
64.06	588	623
64.08	588	635
64.10	588	647
64.12	588	659
64.14	588	670
64.16	588	682
64.18	588	694
64.20	588	706
64.22	588	717
64.24	588	**729**
64.26	588	**735**
64.28	588	735
64.30	588	735
64.32	588	735
64.34	588	735
64.36	588	735
64.38	588	735
64.40	588	735
64.42	588	735

Hydrograph for Pond 5P: buried Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	63.00	0.00	0.00	0.00
2.50	0.00	0	63.00	0.00	0.00	0.00
5.00	0.01	0	63.00	0.01	0.01	0.00
7.50	0.01	0	63.00	0.01	**0.01**	0.00
10.00	**0.03**	**39**	**63.07**	**0.01**	**0.01**	**0.00**
12.50	**0.08**	**541**	**63.92**	**0.11**	0.01	**0.10**
15.00	0.02	473	63.80	0.02	0.01	0.01
17.50	0.01	455	63.77	0.02	0.01	0.00
20.00	0.01	434	63.74	0.01	0.01	0.00
22.50	0.01	393	63.67	0.01	0.01	0.00
25.00	0.00	318	63.54	0.01	0.01	0.00
27.50	0.00	196	63.33	0.01	0.01	0.00
30.00	0.00	73	63.12	0.01	0.01	0.00
32.50	0.00	0	63.00	0.00	0.00	0.00
35.00	0.00	0	63.00	0.00	0.00	0.00
37.50	0.00	0	63.00	0.00	0.00	0.00
40.00	0.00	0	63.00	0.00	0.00	0.00
42.50	0.00	0	63.00	0.00	0.00	0.00
45.00	0.00	0	63.00	0.00	0.00	0.00
47.50	0.00	0	63.00	0.00	0.00	0.00
50.00	0.00	0	63.00	0.00	0.00	0.00
52.50	0.00	0	63.00	0.00	0.00	0.00
55.00	0.00	0	63.00	0.00	0.00	0.00
57.50	0.00	0	63.00	0.00	0.00	0.00
60.00	0.00	0	63.00	0.00	0.00	0.00
62.50	0.00	0	63.00	0.00	0.00	0.00
65.00	0.00	0	63.00	0.00	0.00	0.00
67.50	0.00	0	63.00	0.00	0.00	0.00
70.00	0.00	0	63.00	0.00	0.00	0.00

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.198 degrees North
Longitude	70.871 degrees West
Elevation	10 feet
Date/Time	Wed Feb 05 2025 13:41:52 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	2.00	2.60	2.87	**1yr**	2.31	2.7(
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.92	2.45	3.15	3.51	**2yr**	2.79	3.3{
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.39	3.08	3.98	4.50	**5yr**	3.53	4.3:
10yr	0.40	0.64	0.80	1.09	1.42	1.85	**10yr**	1.23	1.69	2.18	2.83	3.66	4.75	5.43	**10yr**	4.21	5.2:
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.70	3.53	4.61	6.01	6.96	**25yr**	5.32	6.7(
50yr	0.52	0.83	1.06	1.49	2.00	2.67	**50yr**	1.73	2.46	3.18	4.19	5.49	7.18	8.41	**50yr**	6.35	8.0{
100yr	0.58	0.94	1.21	1.71	2.33	3.13	**100yr**	2.01	2.89	3.75	4.96	6.53	8.58	10.16	**100yr**	7.59	9.7:
200yr	0.64	1.05	1.36	1.96	2.71	3.68	**200yr**	2.34	3.40	4.44	5.90	7.80	10.26	12.28	**200yr**	9.08	11.8
500yr	0.76	1.25	1.63	2.36	3.31	4.55	**500yr**	2.86	4.22	5.51	7.38	9.82	12.99	15.78	**500yr**	11.50	15.1

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.92	1.26	1.58	2.14	2.45	**1yr**	1.90	2.3(

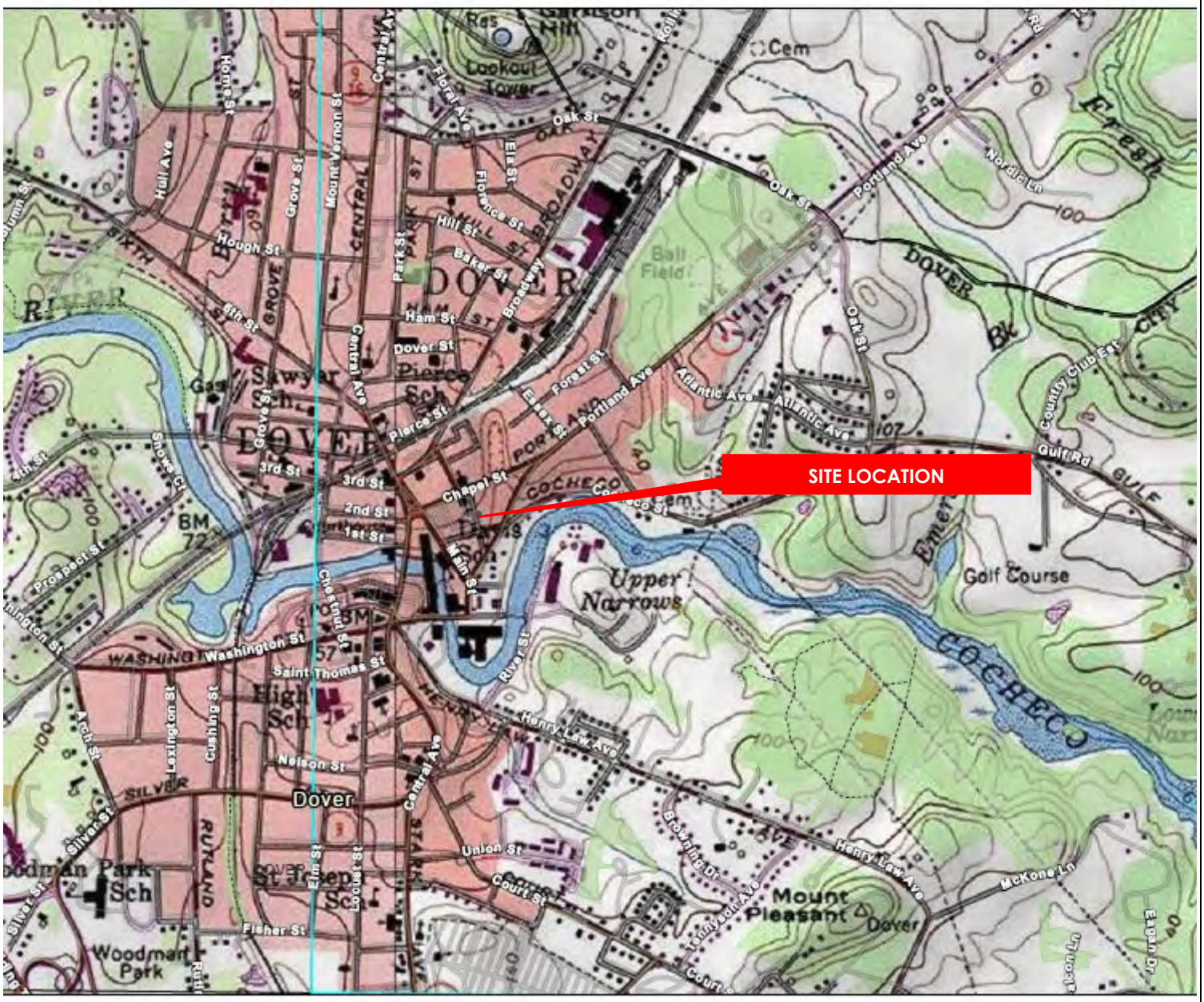
Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Suffield	536	0.6	2.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	mesic	silty over clayey	no	deep to clay C
Sunapee	168	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	
Sunapee var	269	0.6	2.0	0.60	6.0	B	3	Loose till, loamy textures	frigid	loamy	yes	frigid dystrudept
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Suncook	402	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	frequent flooding
Sunday	102	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	occasionally flooded
Sunday	202	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	frigid	sandy	no	frequently flooded
Surplus	669	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	mwd, sandy loam in Cd
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Swanton	438	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	frigid	co. loamy over clayey	no	
Telos	123	0.6	2.0	0.02	0.2	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Timakwa	393			6.00	100.0	D	6	Organic Materials - Freshwater	mesic	sandy or sandy-skeletal	no	organic over sand
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Vassalboro	150					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Walpole	546	2.0	6.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Warwick	210	2.0	6.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	loamy-skeletal	no	loamy over slate gravel
Waskish	195					D	6	Organic Materials - Freshwater	frigid	peat	no	deep organic
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Westbrook	597			0.00	2.0	D	6	Tidal Flat	mesic	loamy	no	organic over loam
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Winooski	103	0.6	6.0	0.60	6.0	B	3	Flood Plain (Bottom Land)	mesic	silty	no	very fine sandy loam
Wonsqueak	995			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep

no longer recognized organic materials

MAPS

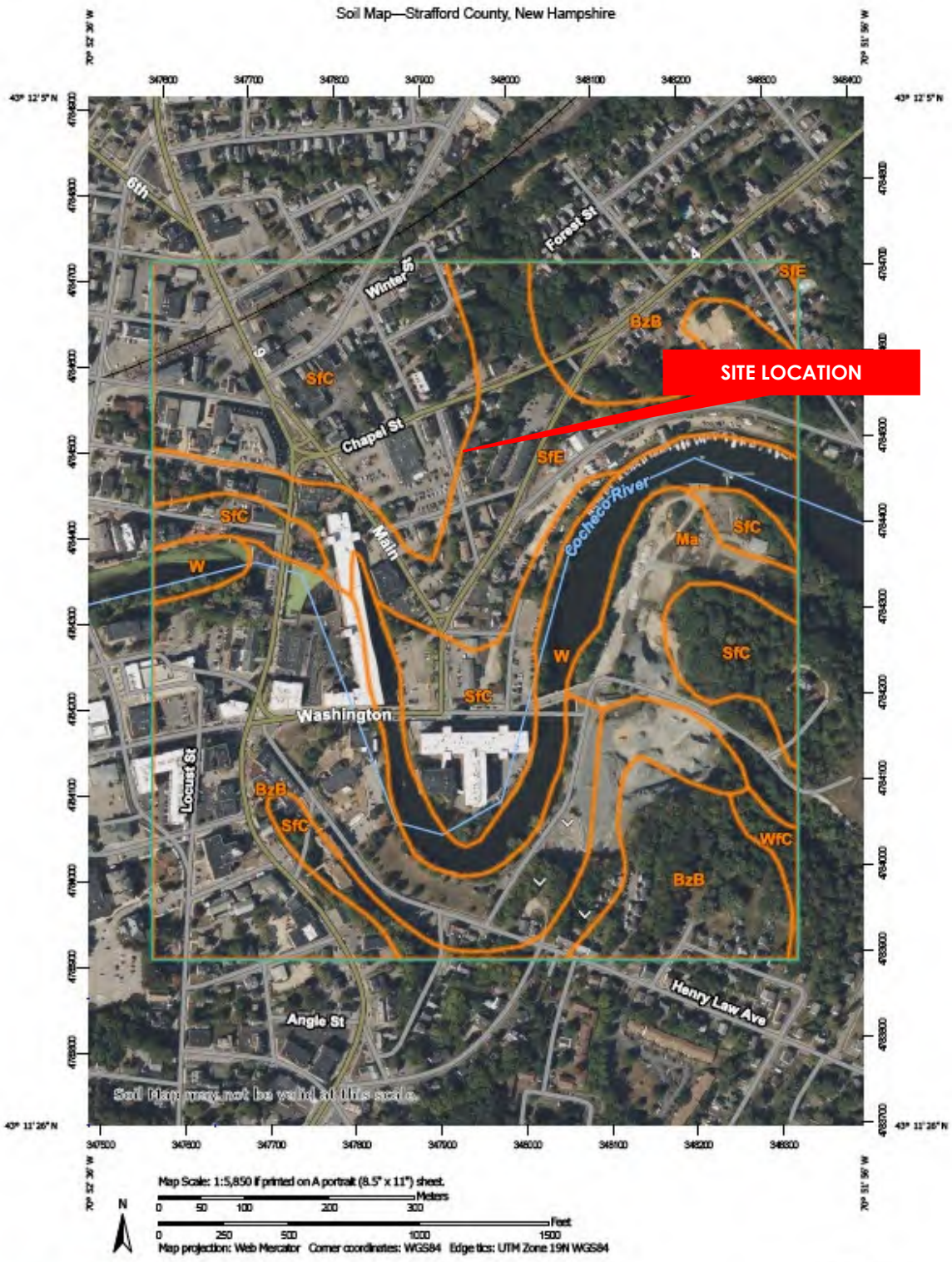
USGS LOCUS
SCS SOILS
FEMA
CS 9201 PRE-DEVELOPMENT DRAINAGE
CS 9301 POST DEVELOPMENT DRAINAGE

NH Topo Maps



Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs; USGS Topographic Quadrangle Images

USGS MAP
9-11 MECHANIC ST DOVER, NH
MAP 24 LOT 101



Source: USDA Natural Resources Conservation Service

SOILS MAP
9-11 Mechanic Street Dover, NH 03820
Map 24 Lot 101



Source: Official Website of the Department of Homeland Security FEMA

FEMA MAP
9-11 MECHANIC ST DOVER, NH
Map 24 Lot 101

PRE DEVELOPMENT IMPERVIOUS
AREA = 3,724 S.F.
(47.6% COVERAGE)

DP2

#11
2 STORY

DECK

FLOW PATH

E2

N/F
9-11 MECHANIC STREET
REALTY TRUST
MAP 24 LOT 101
BK 5095 PG 505
0.16 ACRES ±
7169 S.F.

PAVED

FLOW PATH

2 STORY

PORCH

E1

DP1

MECHANIC STREET

(PUBLIC - 33' WIDE)

NAD 83

NORTH

0 10' 20'

GRAPHIC SCALE 1" = 10'

PRE DEVELOPMENT

POST DEVELOPMENT IMPERVIOUS
AREA = 6,710 S.F.
(85.78% COVERAGE)

P3

DP2

FLOW PATH

N/F
9-11 MECHANIC STREET
REALTY TRUST
MAP 24 LOT 101
BK 5095 PG 505
0.16 ACRES ±
7169 S.F.

PAVED

P2

P3

PROPOSED 5 STORY BUILDING
F.F. ELEV = 66.0'
1830 SF/FLOOR
9150 SF

37' - 2 1/2"

31' - 7 3/4"

54'

P1

FLOW PATH

DP1

MECHANIC STREET

(PUBLIC - 33' WIDE)

POST DEVELOPMENT

POND AREAS	
ELEVATION	SQ.FT
65	234

DATE	NO.	REVISIONS	BY
01/29/26	4	NEW TRC COMMENTS	BCO
11/26/25	3	REMAINING TRC COMMENTS	BCO
10/21/25	2	TRC COMMENTS	BCO
09/02/25	1	TRC COMMENTS	BCO

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

PRE & POST DEVELOPMENT DRAINAGE PLAN
CS9201

Ranger Engineering Group, Inc.

130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 15 OF 15

9-11 Mechanic Street
Waiver List

WAIVER REQUEST #1:

§153-13A(12): Allow a waiver of this provision requiring a Landscape Architect to sign the Landscape Plan.

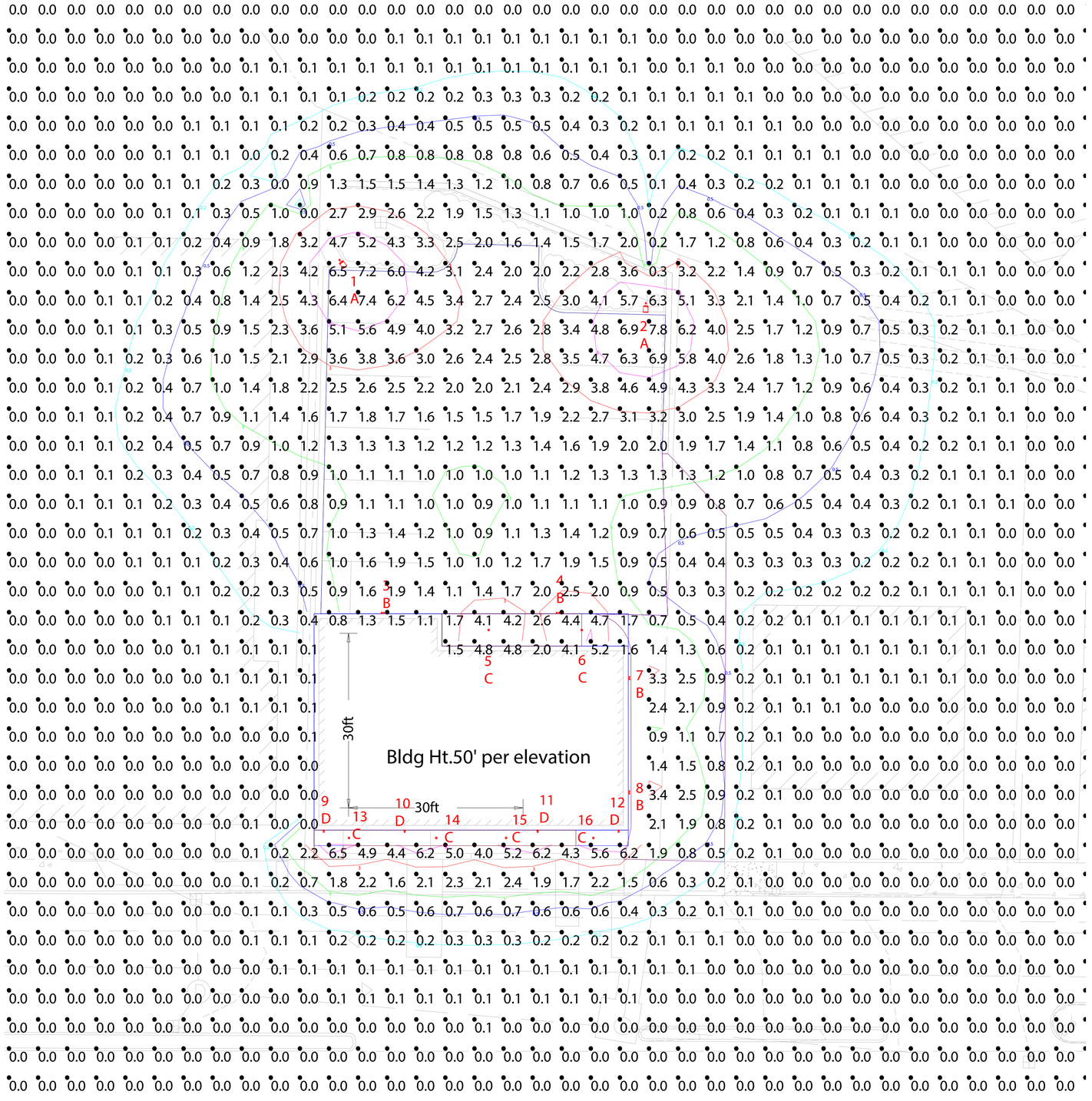
Justification: The landscape area is small and dominated by a bioretention facility. Plantings have been taken from plant species recommended in the Stormwater manual with the addition of some screening plants.

WAIVER REQUEST #2:

§153-14D(6)(b): relief needed from required two-way accessway under the minimum of 24 feet.

Justification: The project will generate very limited vehicular movement driven by the limited number of on-site parking spaces. The parking area was intentionally designed with thoughtful & safe vehicle movement in mind, and so as to avoid vehicles backing out onto Mechanic Street (as contemplated under Article IV, §153-14D(6)(b)).

PLOT TO 22"X34" PAGE



Scale: 1 inch= 10 Ft.

The Lighting Analysis, IZA.ayout, Energy Analysis and/or Visual Simulation ("Lighting Design") provided by RAB Lighting Inc. ("RAB") represents an anticipated performance of the lighting system performance based upon design parameters and information supplied by others. The Lighting Design is created using photometric data provided by RAB and therefore actual measured results may vary from the actual performance due to many factors beyond RAB's control including but not limited to differences in actual installed conditions. RAB recommends that design parameters and other information be field verified to reduce variation.

RAB does not warranty, either implied or stated, actual measured light levels or energy consumption levels as compared to those illustrated by the Lighting Design.

RAB does not warranty, either implied or stated, nor represents the appropriateness, completeness or suitability of the Lighting Design as compliant with any regulation, code or ordinance. It is the responsibility of the user to determine the suitability of the Lighting Design with regulation code requirements with the exception of those expressly stated on drawings created and submitted by RAB. The Lighting Design is issued, in whole or in part, as a advisory documents for informational and convenience purposes only, is not intended for construction nor as a part of a project's construction documentation package and therefore RAB recommends that design parameters and other information be field verified to reduce variation.

The Lighting Design provided by RAB may not be used in the Lighting Design, the reflecting paint must verify that the lumen output of the fixtures being specified is identical to the lumen output shown in the Lighting Design. Occasionally, Lighting Designs previously provided use fixtures that are then updated prior to an order and such updates could change the lumen output of the fixture. This in turn, could impact the installed lighting performance that differs from the Lighting Design.

Scale: as noted
Date:11/19/2025
PROJECT # 321273
CASE # 01805576
Filename: 9-11 Mechanic Street 01805576A.AGI
Drawn By: M. Glover

Job Name:
9-11 Mechanic Street
Dover, NH

Lighting Layout
Version A

Prepared For:
Holbrook Associated
35 Reservoir Park Drive
Rockland, MA 02370
Tel: 781-871-0011

Filename: C:\Users\mneredyth.glover\OneDrive - RAB Lighting\Desktop\Jobs\9-11 Mechanic Street\01805576A.AGI

RAB
408 W 14th Street, New York, NY 10014
888 722-1000 • rablighting.com

01805576A.AGI

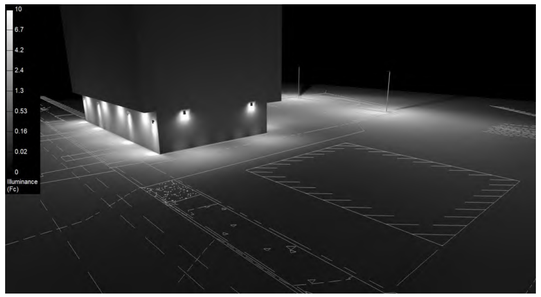
PLOT TO 22"X34" PAGE

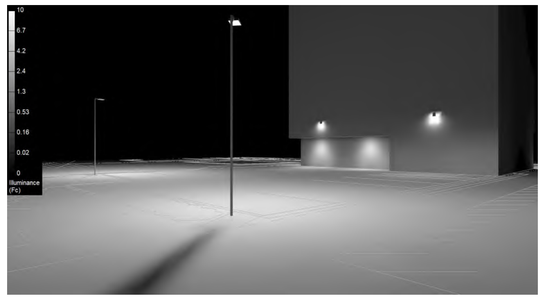
Calculation Summary												
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**	**Description**	**PtSpcLr**	**PtSpcTb**	**Calc Ht**	**Meter Type**
Site	Illuminance	Fc	0.52	7.8	0.0	N.A.	N.A.	Readings taken at 0'-0" AFG	5	5	0	Horizontal
Entry Drive	Illuminance	Fc	1.23	3.4	0.3	4.10	11.33	Statistical Area				
Front Entrance	Illuminance	Fc	5.19	6.5	4.0	1.30	1.63	Statistical Area				
Parking Lot	Illuminance	Fc	2.23	7.8	0.5	4.46	15.60	Statistical Area				
Rear Entrance	Illuminance	Fc	3.44	4.8	1.5	2.29	3.20	Statistical Area				

Luminaire Schedule			All quotes/orders generated from this layout must be forwarded to the Local Rep Agency										
Symbol	**Qty**	**Tag**	**Label**	**Arrangement**	**Lum. Lumens**	**Arr. Lum. Lumens**	**LLF**	**Description**	**Lum. Watts**	**Arr. Watts**	**Total Watts**	**BUG Rating**	**Mounting Height**
	2	A	A22-4T70 @ 50W-4K	Single	7713	7713	1.000	Universal pole mounted	47.4	47.4	94.8	B2-U0-G2	15
	4	B	SLIMXXS-7W-4K-20°	Single	767	767	1.000	Wall mounted	6.6	6.6	26.4	B0-U0-G0	9, 13
	6	C	CR4-6W-4K	Single	682	682	1.000	Recessed ceiling mount	5.73	5.73	34.38	N.A.	8.417, 9.5
	4	D	CD34-3WZ @ 6W-4K-25°	Single	320	320	1.000	Wall mounted- direct	3.05031	3.05	12.201	B1-U0-G0	7.5

Expanded Luminaire Location Summary						
LumNo	**Tag**	**X**	**Y**	**MTG HT**	**Orient**	**Tilt**
1	A	93.274	163.19	15	307.982	0
2	A	145.987	155.77	15	268.635	0
3	B	100.755	102.286	13	90	0
4	B	130.885	102.285	13	90	0
5	C	118.965	99.507	8.417	0	0
6	C	134.965	99.507	8.417	0	0
7	B	142.966	91.228	9	0	0
8	B	142.966	71.592	9	0	0
9	D	90.627	65.092	7.5	270	0
10	D	104.544	65.092	7.5	270	0
11	D	127.384	65.092	7.5	270	0
12	D	141.301	65.092	7.5	270	0
13	C	94.962	63.759	9.5	0	0
14	C	109.963	63.759	9.5	0	0
15	C	121.963	63.759	9.5	0	0
16	C	136.964	63.759	9.5	0	0
Total Quantity: 16						

Luminaire Tag Summary	
Tag	**Qty**
A	2
B	4
C	6
D	4





NOTES:
* The light loss factor (LLF) is a product of many variables. RAB's standard is to use the initial 1.0 LLF in accordance with most municipal lighting ordinance light trespass requirements, unless otherwise noted.

* Illumination values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.

* The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the anticipated performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.

* Mounting height determination is job site specific, our lighting simulations assume a mounting height (insertion point of the luminaire symbol) to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.

* RAB disclaims all responsibility for the suitability of existing or proposed poles and bases to support proposed fixtures. This is the owner's, installer's and/or end-user's responsibility based on the weight and effective projected area ("EPA") of the proposed fixtures and the owner's site and soil conditions, wind zone, and many other factors. A professional engineer licensed to practice in the state the site is located should be engaged to assist in this determination.

* The landscape material shown hereon is conceptual and is not intended to be an accurate representation of any particular plant, shrub, bush, or tree, as these materials are living objects, and subject to constant change. The conceptual objects shown are for illustrative purposes only. The actual illumination values measured in the field will vary.

* Photometric model elements such as buildings, rooms, plants, furnishings or any architectural details which impact the dispersion of light must be detailed by the customer documents for inclusion in the RAB Lighting Design. The owner/contractor/customer/end-user must provide accurate and complete construction drawings that reflect what will be the final construction RAB is not responsible for any inaccuracies caused by incomplete, inaccurate, or outdated information provided by the owner/contractor/customer/end-user.

* RAB Lighting Inc. luminaire and product designs are protected under U.S. and International intellectual property laws. Patents issued or pending may apply. Please see www.rablighting.com/ip.

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RAB
408 W 14th Street, New York, NY 10014
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PS4-11-15D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze

Weight: 105.8 lbs

Project:	Type:
Prepared By:	Date:

Technical Specifications

Compliance

CSA Listed:
Suitable for wet locations

Construction

Shaft:
46,000 p.s.i. minimum yield.

Hand Holes:
Reinforced with grounding lug and removable cover

Base Plates:
Slotted base plates 36,000 p.s.i.

Shipping Protection:
All poles are shipped in individual corrugated cartons to prevent finish damage

Color:
Bronze powder coating

Height:
15 ft

Weight:
106 lbs

Gauge:
11

Wall Thickness:
1/8"

Shaft Size:
4"

Hand Hole Dimensions:
3" x 5"

Bolt Circle:
8 1/2"

Base Dimension:
8"

Anchor Bolt:
Anchor bolt kits are sold separately. Order ABK4-11-BCK-S4 for anchor bolt kits.

Anchor Bolt Templates:
WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available online.

Max EPA's/Max Weights:
70MPH 17.4 ft/450 lb.
80MPH 12.5 ft/440 lb.
90MPH 9.0 ft/440 lb.
100MPH 6.6 ft/440 lb.
110MPH 4.8 ft/435 lb.
120MPH 3.4 ft/435lb.
130MPH 2.3 ft/435 lb.
140MPH 1.4 ft/430 lb.
150MPH 0.8 ft/420 lb

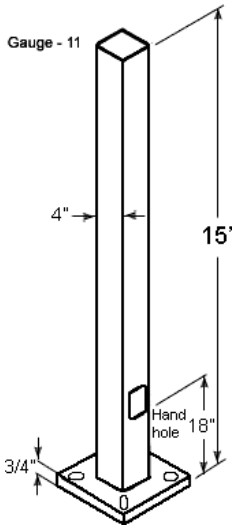
Other

Terms of Sale:
Pole Terms of Sale is available online.

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PS4-11-15D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Pole caps, base covers & bolts are sold separately
- Custom manufactured for each application

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A22-4T70



Color: Bronze

Weight: 11.2 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant
120V	0.58A/0.50A/0.41A
208V	0.33A/0.29A/0.24A
240V	0.29A/0.25A/0.21A
277V	0.25A/0.22A/0.18A
Input Watts	47.4-72.6W

LED Info

Watts	70/60/50W
Color Temp	3000/4000/5000K
Color Accuracy	81-84 CRI
L70 Lifespan	100,000 Hours
Lumens	7,182-10,708 lm
Efficacy	136.1-162.7 lm/W

Technical Specifications

Field Adjustability

Field Adjustable:
Field Adjustable Light Output:
70W/60W/50W (factory default: 70W)
Color Temperature Selectable:
3000K, 4000K and 5000K (factory default:4000K)

Compliance

UL Listed:
Suitable for wet locations. Suitable for mounting within 4 ft (1.2m) of the ground.

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

IP Rating:
Ingress protection rating of IP66 for dust and water

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

DLC Listed:
This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities. Designed to meet DLC 5.1 requirements.
DLC Product Code: S-M7F5C6

Performance

Lifespan:
100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

Wattage Equivalency:
70W: Replaces up to 350W Metal Halide (MH) or 200W High Pressure Sodium (HPS)
60W: Replaces up to 250W Metal Halide (MH) or 200W High Pressure Sodium (HPS)
50W: Replaces up to 200W Metal Halide (MH) or 150W High Pressure Sodium (HPS)

Electrical

Driver:
Constant Current, Class 1, 120-277V, 50/60 Hz:
70W: 120V: 0.58A, 208V: 0.33A, 240V: 0.29, 277V: 0.25A
60W: 120V: 0.50A, 208V: 0.29A, 240V: 0.25, 277V: 0.22A
50W: 120V: 0.41A, 208V: 0.24A, 240V: 0.21A, 277V: 0.18A

Dimming Driver:
Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

THD:
4.21% at 120V, 7.76% at 277V

Power Factor:
99.7% at 120V, 94.6% at 277V

7-Pin Receptacle with Shorting Cap:
ANSI C136.41 7-pin receptacle, compatible with wireless control systems

Surge Protection:
6 kV

Construction

IES Classification:
The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semicircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

Cold Weather Starting:
The minimum starting temperature is -40°F (-40°C)

Maximum Ambient Temperature:
Suitable for use in up to 104°F (40°C)

Lens:
Polycarbonate lens

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Technical Specifications (continued)

Housing:
Die-cast aluminum

Effective Projected Area:
1 Fixture: 0.3
2 Fixtures: 0.7
3 Fixtures: 1.2
4 Fixtures: 1.2

Finish:
Formulated for high durability and long-lasting color

Gaskets:
High-temperature silicone gaskets

Green Technology:
Mercury and UV free. RoHS-compliant components.

LED Characteristics

LEDs:
Long-life, high-efficacy, surface-mount LEDs

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Optical

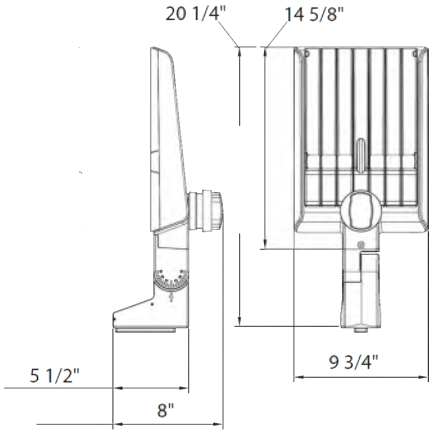
BUG Rating:
Type 4
70W: B2 U0 G2
60W: B2 U0 G2
50W: B2 U0 G2

Other

5-Year Limited Warranty:
The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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Dimensions



Features

- DLC Premium listed
- Adjustable Universal Pole Mount
- 7-Pin Receptacle with Shorting Cap
- IP66 Rated
- 100,000-Hour LED lifespan
- 5-Year, limited warranty

Ordering Matrix

Family		Optics	Wattage	Mounting	Color Temp	Finish	Driver	Options
A22	–	4T	70					
		2T = Type II **4T =** Type IV **5T =** Type V **Blank =** Type III	**70 =** 70/60/50W **100 =** 100/80/60W **150 =** 150/120/100W **200 =** 200/180/160W **320 =** 320/280/250W	**Blank =** Universal Adjustable Pole Mount **Blank =** Universal Non-Adjustable Pole Mount	**Blank =** 3000/4000/5000K CCT Adjustable **Y =** 3000K	**Blank =** Bronze **W =** White **B =** Black	**Blank =** 120-277V, 0-10V Dimming **/480 =** 480V, 0-10V Dimming	**Blank =** 7-Pin Receptacle with Shorting Cap **/MVS =** 7-Pin Receptacle with Shorting Cap and Microwave Motion Sensor **/LCBS =** Lightcloud Blue w/PIR Sensor **/LCBS/MVS =** Lightcloud Blue w/MVS Sensor

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CD34-3WZ



Color: Bronze

Weight: 2.7 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current
120V	0.09A
208V	0.05A
240V	0.04A
277V	0.04A
Input Watts	10/8/06W

LED Info

Watts	10/8/06W
Color Temp	3000/4000/5000K
Color Accuracy	90 CRI
L70 Lifespan	50,000 Hours
Lumens	1000/800/600 lm
Efficacy	100

Technical Specifications

Performance

Product Type:
Cylinder Wall Mount

Description:
Economical cylinders with field-adjustable color temperature, power, and light distribution, along with field-swappable optics to fit any indoor or outdoor application.

Wattage Equivalency:
75W/60W/45W

Input Wattage:
10/8/6W

Nominal Lumens:
1000/800/600lm

Efficacy (±10%):
100lm/W

L70 Lifespan:
50,000-Hour LED lifespan based on IES LM-70 results

Electrical

Driver:
Constant Current, 50-60 Hz, 120V-277V

THD:
≤20%

Power Factor:
≥0.9

Dimmable:
Yes, dimmable down to 5% on compatible 0-10V dimming systems. See Dimmer Compatibility List. Requires separate 0-10V DC dimming circuit.

Input Voltage:
120-277V

Operating Frequency:
50/60Hz

Input Current @ 120V (mA):
85mA

Input Current @ 208V (mA):
50mA

Input Current @ 240V (mA):
42mA

Input Current @ 277V (mA):
38mA

Operating Temperature:
-40°F to 120°F (-40°C to 45°C)

Flicker:
≤1%

Photocell:
Integrated photocell included with on/off switch

LED Characteristics

Beam Angle:
25° (installed)
Field swappable optics sold separately for 25°/40°/60° beam angle_

Light Distribution:
Selectable dip switch for up, down, or up/down light

Color Temperature:
3000/4000/5000K

Color Accuracy (CRI):
90 CRI

R9 Value:
High color performance with R9 greater than 0

Color Consistency:
<6-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

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Technical Specifications (continued)

Color Stability:
LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Installation

Mounting:
Wall mount

Construction

Size:
3"

Shape:
Cylinder

Finish:
Bronze

Enclosure Material:
Die-cast aluminum and polycarbonate

Lens Finish:
Clear (installed)
Frosted lens accessory sold separately

Compliance

Listings:
UL Listed

Environment:
Suitable for use indoors and outdoors in dry, damp, or wet environments.

Fixture Rating:
Suitable for use in open fixtures

IP Rating:
IP65

Certification Model Number:
CD2009(CD34-3WZ)

California Title 20 Compliant:
No

California Title 24 JA8 Compliant:
No

California Energy Commission (CEC) Status:
Lawful for Sales in California

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

RoHS:
Mercury and UV free. RoHS-compliant components.

FCC:
Complies with Part 15 of the FCC Rules

Other

Compatible Accessories:
CD34REF-325D
25° reflector

CD34REF-340D
40° reflector

CD34REF-360D
60° reflector

CD34LENS-3FRW
3" frosted lens white

CD34LENS-3FRK
3" frosted lens black

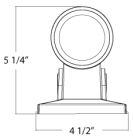
CD34LENS-3FRZ
3" frosted lens bronze

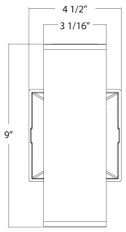
5-Year Limited Warranty:
The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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CD34-3WZ

Dimensions





Features

- Aluminum extrusion housing and die-cast covers available in black, bronze, or white
- Field interchangeable optics sold separately for 25°/40°/60° beam angle
- Field-adjustable color temperature 3000/4000/5000K (indoor); 2700/3000/3500/4000/5000K (outdoor).
- Dimmable on 0-10V systems (indoor); integrated photocell (outdoor)

Ordering Matrix

Family	Size/Wattage	Mounting	Light Direction	CRI/Color Temp	Driver	Finish	RGB Color Tuning
CD34	3	W				Z	
	3 = 3", 10/8/6W **4 =** 4", 20/16/12W **6 =** 6", 36/28/22W	**W =** Wall	**Blank =** Selectable-Down, Up or Both	**Blank =** 90 CRI, 3000/4000/5000K	**Blank =** 120-277V, 0-10V Dimming	**Z =** Bronze **K =** Black **W =** White	**Blank =** None **/RGB =** Color Tuning 16+ million colors; Tunable White 2200-6500K

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CR4



Color: White

Weight: 0.9 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current, Class A
120V	0.11A
208V	N/A
240V	N/A
277V	0.04A
Input Watts	10/8/06W

LED Info

Watts	10/8/06W
Color Temp	2700/3000/3500/4000/5000K
Color Accuracy	90 CRI
L70 Lifespan	50,000 Hours
Lumens	1,000/800/600 lm
Efficacy	109.83/112.09/112.64 lm/W

Technical Specifications

Performance

Product Type:
Commercial Downlight

Description:
The CR commercial downlight offers best-in-class flexibility by adding universal dimming, which allows for both TRIAC & 0-10V dimming, making it a great choice for residential & commercial installations.

Wattage Equivalency:
23W CFL

Input Wattage:
10/8/6W

Lumens:
6W
637lm @ 2700K; 653lm @ 3000K; 669lm @ 3500K; 680lm @ 4000K; 693lm @ 5000K

8W
835lm @ 2700K; 859lm @ 3000K; 883lm @ 3500K; 899lm @ 4000K; 909lm @ 5000K

10W
1,048lm @ 2700K; 1,082lm @ 3000K; 1,116lm @ 3500K; 1,138lm @ 4000K; 1,143lm @ 5000K

Efficacy:
6W
109lm/W @ 2700K; 113lm/W @ 3000K; 117lm/W @ 3500K; 119lm/W @ 4000K; 119lm/W @ 5000K

8W
108lm/W @ 2700K; 111lm/W @ 3000K; 116lm/W @ 3500K; 118lm/W @ 4000K; 117lm/W @ 5000K

10W
105lm/W @ 2700K; 110lm/W @ 3000K; 115lm/W @ 3500K; 117lm/W @ 4000K; 115lm/W @ 5000K

L70 Lifespan:
50,000-Hour LED lifespan based on IES LM-70 results

Electrical

Driver:
Constant Current, Class A, 50/60 Hz, 120V-277V, 120V: 0.11A, 277V: 0.04A

THD:
≤20%

Power Factor:
≥0.9

Dimmable:
Yes, dimmable down to 10% on compatible TRIAC/ELV and 0-10V dimming systems. See Dimmer Compatibility List.

Input Voltage:
120-277V

Operating Frequency:
50/60Hz

Input Current @ 120V (mA):
110mA

Input Current @ 277V (mA):
37mA

Operating Temperature:
-4°F to 104°F (-20°C to 40°C)

Flicker:
≤30%

LED Characteristics

Beam Angle:
85°±10°

Color Temperature:
Field adjustable via dip switch
2700/3000/3500/4000/5000K

Color Accuracy (CRI):
90 CRI

R9 Value:
High color performance with R9 greater than 50

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Technical Specifications (continued)

Color Consistency:
<4-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:
LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Installation

Mounting:
Recessed

Construction

Size:
4"

Shape:
Round

Finish:
White

Enclosure Material:
Metal

Trim Style:
Smooth

Lens Finish:
Frosted

Lens:
Polycarbonate light diffuser distributes light evenly and smoothly for general lighting applications

Compliance

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

Listings:
UL Listed, UL Classified

Environment:
Suitable for use indoors and outdoors in dry, damp, or wet environments.

IC Rated:
Suitable for direct contact with insulation.
Type IC inherently protected, suitable for direct contact to air permeable insulation and cULus listed for damp locations. Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013.

Air Tight:
Housing certified Air Tight as per ASTM-E283

Energy Star Approved:
This product is ENERGY STAR® Version 1.0 Certified.

Energy Star ID:
3554272

DLC Listed:
No

Certification Model Number:
DLC1006(CR4)

California Title 20 Compliant:
No

California Title 24 JA8 Compliant:
Can be used to conform with the requirements of California Title 24 Part 6

California Energy Commission (CEC) Status:
Lawful for Sales in California

NEC Compliant:
Suitable for use in closets. Compliant with NEC Sec. 410.16 (A)(1) and 410.16 (C3).

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

RoHS:
Mercury and UV free. RoHS-compliant components.

FCC:
Complies with Part 15 of the FCC Rules

Other

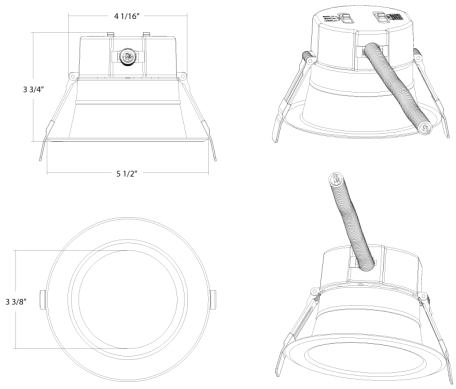
Compatible Products:
DLPLATE/WFR4/NB/CL
4" Mounting plate with nailer bar and drywall collar

DRI-21-EMGR-DC-D10
Emergency driver T20

5-Year, No-Compromise Warranty:
RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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Dimensions



Features

- Universal dimming technology allows for both 120V TRIAC/ELV dimming and 0-10V dimming in 1 SKU for incredible design flexibility
- 3 selectable brightness levels & 5 selectable CCTs (2700/3000/3500/4000/5000K)
- Suitable for new construction & remodel installations
- Deep regress lens for optimal glare control
- Multiple accessories available, including color trims and new construction mounting plates

Ordering Matrix

Family	Size/Wattage	Shape	CRI/Color Temp	Driver	Finish	Trim
CR	4					
	4 = 4", 10/8/6W **6 =** 6", 21/17/10W **8 =** 8", 30/24/16W **10 =** 10", 37/30/24W	**Blank =** Round	**Blank =** 90 CRI, 2700/3000/3500/4000/5000K CCT Adjustable	**Blank =** 120-277V, 0-10V + TRIAC/ELV	**Blank =** White	**Blank =** Smooth

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SLIMXXS



Color: Bronze

Weight: 0.0 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current
120V	0.02A/0.03A/0.05A
208V	0.02A/0.03A/0.04A
240V	0.02A/0.03A
277V	0.02A/0.03A
Input Watts	3.5-6.7W

LED Info

Watts	3.5/5/7W
Color Temp	3000/4000/5000K
Color Accuracy	80-83 CRI
L70 Lifespan	100,000 Hours
Lumens	301-873 lm
Efficacy	83.6-130.3 lm/W

Technical Specifications

Field Adjustability

Field Adjustable:
Field Adjustable Light Output:
7/5/3.5W (factory default 5W)
Color temperature selectable 3000K, 4000K and 5000K (factory default 4000K)
Field-adjustable optics: -20° to +20°
On/Off Photocell (factory default "Off")

Performance

Lifespan:
100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

LED Characteristics

LEDs:
Long-life, high-efficiency, surface-mount LEDs

Electrical

Driver:
7W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.05A, 208V: 0.04A, 240V: 0.03A, 277V: 0.03A
5W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.03A, 208V: 0.03A, 240V: 0.03A, 277V: 0.02A
3.5W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.02A, 208V: 0.02A, 240V: 0.02A, 277V: 0.02A

Dimming Driver:
Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

Photocell:
120-277V selectable photocell that can be turned on and off.

Aux Power Supply:
Yes

Dim to Off:
Yes

Construction

Cold Weather Starting:
The minimum starting temperature is -40°F (-40°C)

Maximum Ambient Temperature:
Suitable for use in up to 104°F (40°C)

Housing:
Die-cast aluminum

Lens:
Tempered glass

Gaskets:
High-temperature silicone

Finish:
Formulated for high durability and long-lasting color

Green Technology:
Mercury and UV free. RoHS-compliant components.

Compliance

UL Listed:
Suitable for wet locations

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

ADA Compliant:
Meets ADA Requirements for wall-mounted luminaires.

IP Rating:
Ingress protection rating of IP65 for dust and water

Dark Sky Approved:
Conforms to the requirements listed by the International Dark-Sky Association for "Dark Sky" approval. The Fixture Seal of Approval provides objective, third-party certification for luminaries that minimize glare, reduce light trespass, and don't pollute the night sky.

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Technical Specifications (continued)

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

DLC Listed:
This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities. Designed to meet DLC 5.1 requirements.
DLC Product Code: S-37D7SM

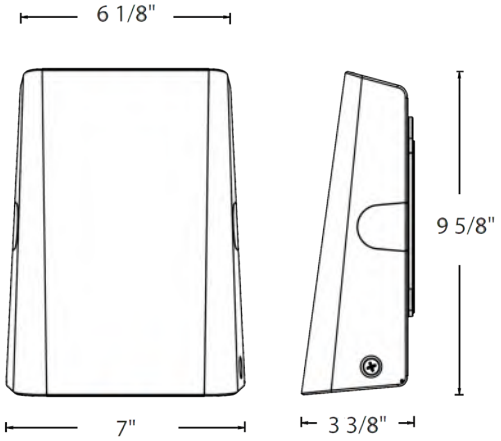
Installation

Mounting:
Heavy-duty mounting bracket with spring-hinged housing and "kick stand" allow for easy installations. Conduit entries on back and both sides.

Other

5-Year, No-Compromise Warranty:
RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Dimensions



Features

- 100,000-Hour LED lifespan
- 0-10V dimming standard
- 5-Year, no-compromise warranty

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Ordering Matrix

Family	Wattage	Color Temp	Finish	Driver	Options
SLIM	XXS				
	XXS = 7/5/3.5W **XS =** 25/18/12W **S =** 38/28/18W **M =** 55/41/27W **L =** 60/45/29W	**Blank =** 3000/4000/5000K CCT Adjustable **Y =** 3000K Static	**Blank =** Bronze **W =** White	**Blank =** 120-277V, 0-10V Dimming	**Blank =** No Option **/LC =** Lightcloud **/LCB =** Lightcloud Blue

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Mechanic Street Landing

New Construction

9-11 Mechanic Street Dover, NH 03820

Project Status: REVISED PLANNING BOARD FILING

March 09, 2026

NUMBER	SHEET NAME	TECH REVIEW COMMITTEE FILING 08/28/2025	TECH REVIEW COMMITTE FILING 12/9/2025	PLANNING BOARD FILING 01/29/2026	PLANNING BOARD FILING 03/09/2026
G100	COVER	•	•	•	•
ARCHITECTURAL					
A010	EGRESS PLANS	•	•	•	•
A100	SITE PLAN	•	•	•	•
A101	FLOOR PLANS	•	•	•	•
A102	FLOOR PLANS	•	•	•	•
A201	EXTERIOR ELEVATIONS	•	•	•	•
A202	EXTERIOR ELEVATIONS	•	•	•	•
A203	RENDERED EXTERIOR ELEVATIONS	•	•	•	•
A204	RENDERED EXTERIOR ELEVATIONS	•	•	•	•
A205	STREET VIEW PERSPECTIVE	•	•	•	•



PROJECT TEAM:

MECHANIC STREET REALTY TRUST
DEVELOPER
23A Middle Street
Newburyport, MA 01950

SV DESIGN LLC
ARCHITECT
126 Dodge Street
Beverly, MA 01915
978.927.3745

RANGER ENGINEERING GROUP, INC.
CIVIL ENGINEER
130 Main St
Unit 202
Salem, NH 03079

LIBERTY LAW
ATTORNEY/OWNERS REPRESENTATIVE
11A Liberty Street
Newburyport, MA 01950

Revisions
Issue Date: Description
REVISED PLANNING BOARD FILING March 09, 2026 Checked By

COVER
Scale: 3/32" = 1'-0"
Drawn By: Author
Checked By: Checker
Date: March 09, 2026
Project #: 11.6122.007

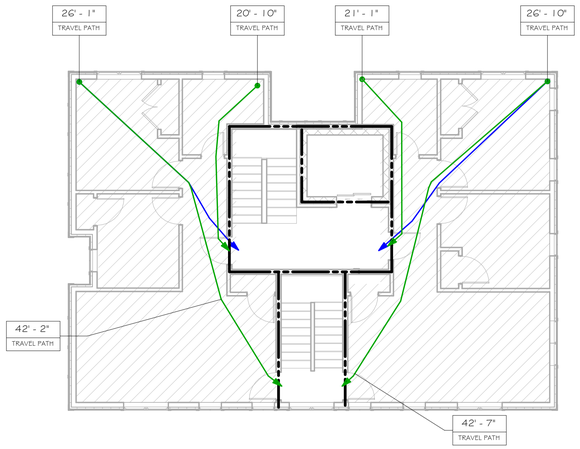
Mechanic Street Landing
9-11 Mechanic Street Dover, NH 03820

SV DESIGN
126 Dodge Street Beverly, Massachusetts 01915
t 978.927.3745 www.svdesign.com

REGISTERED ARCHITECT STEFANO J BASSO No. 30951 BEVERLY MA COMMONWEALTH OF MASSACHUSETTS
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COVER

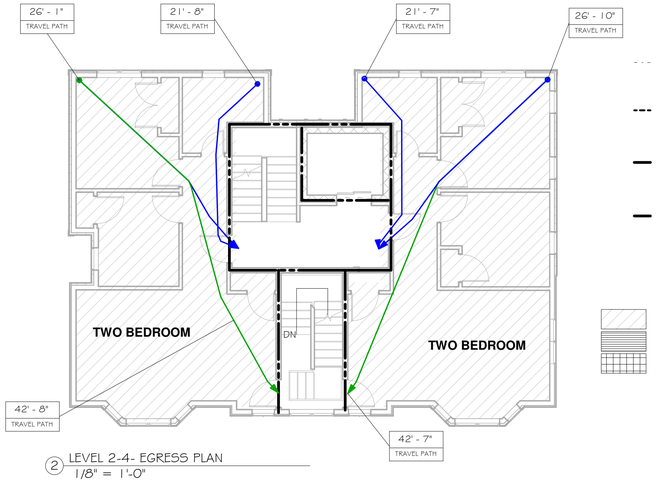
G100



3 LEVEL 5- EGRESS PLAN
1/8" = 1'-0"

FIRST FLOOR OCCUPANT COUNT

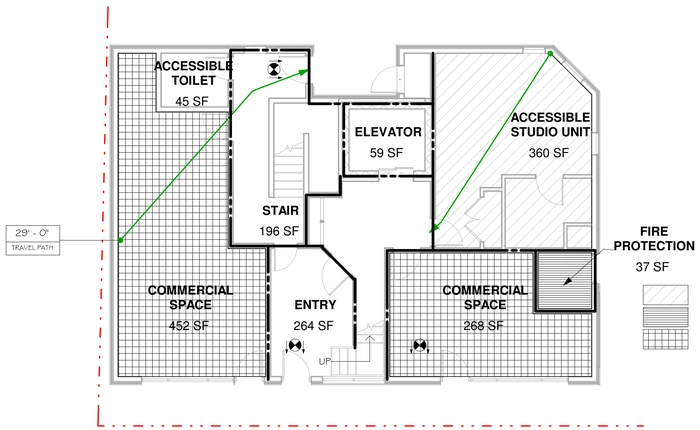
RESIDENTIAL OCCUPANT LOAD:	10 PP
MECHANICAL OCCUPANT LOAD:	0 PP
BUSINESS OCCUPANT LOAD	0 PP
TOTAL OCCUPANT LOAD:	10 PP
TOTAL FLOOR AREA:	1940 GSF



2 LEVEL 2-4- EGRESS PLAN
1/8" = 1'-0"

FIRST FLOOR OCCUPANT COUNT

RESIDENTIAL OCCUPANT LOAD:	10PP
MECHANICAL OCCUPANT LOAD:	0PP
BUSINESS OCCUPANT LOAD:	0 PP
TOTAL OCCUPANT LOAD:	10 PP
TOTAL FLOOR AREA:	1987 GSF



1 LEVEL 1 - EGRESS PLAN
1/8" = 1'-0"

FIRST FLOOR OCCUPANT COUNT

RESIDENTIAL OCCUPANT LOAD:	2 PEOPLE
UTILITY SPACE/STORAGE OCCUPANT LOAD:	1 PERSON
BUSINESS OCCUPANT LOAD :	6 PEOPLE
TOTAL OCCUPANT LOAD:	9 PP
TOTAL FLOOR AREA:	1940 GSF

EGRESS PLAN LEGEND

	EGRESS PATH
	30 MINUTE FIRE PARTITION
	1 HOUR FIRE PARTITION
	1 HOUR FIRE BARRIER
	2 HOUR FIRE BARRIER
	EXIT SIGN
FEC	RECESSED WHITE FIRE EXTINGUISHER CABINET

EGRESS COMPONENT	CALCULATION	REQ'D PER IBC	PROVIDED
STAIRS	<50 OCC	36" (1011.2)	36"
DOORWAY	<50 OCC	36" (1010.1)	36"

UNIT TYPE TOTALS

UNIT MATRIX

	STUDIO	2 BED	TOTAL
FIRST FLOOR	1	0	1
SECOND FLOOR	0	2	3
THIRD FLOOR	0	2	3
TOTAL	0	2	8
TOTAL	0	2	8
TOTAL	1	8	9

Revisions
Issue Date: | Description | Checked By
March 09, 2026 | REVISED PLANNING BOARD FILING

EGRESS PLANS

Scale: As indicated
Drawn By: Author
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Project #: 11.6122.007

Mechanic Street Landing
9-11 Mechanic Street Dover, NH 03820
SV DESIGN 126 Dodge Street Beverly, Massachusetts 01915
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EGRESS PLANS

A010

Color Legend

- CIRCULATION
- COMMERCIAL SPACE
- COMMON SPACES
- MAINTENANCE
- STUDIO



1 SITE PLAN
1/4" = 1'-0"

Autodesk Docs://Mechanic Street Realty Trust_Dover/Mechanic Street Realty Trust_Dover.rvt 3/10/2026 2:45:09 PM

Revisions

Issue Date:	Description	Checked By
△	REVISED PLANNING BOARD FILING	March 09, 2026

SITE PLAN

Scale: 1/4" = 1'-0"
Drawn By: Author
Date: March 08, 2026
Checked By: Checker
Project #: 11.6122.007

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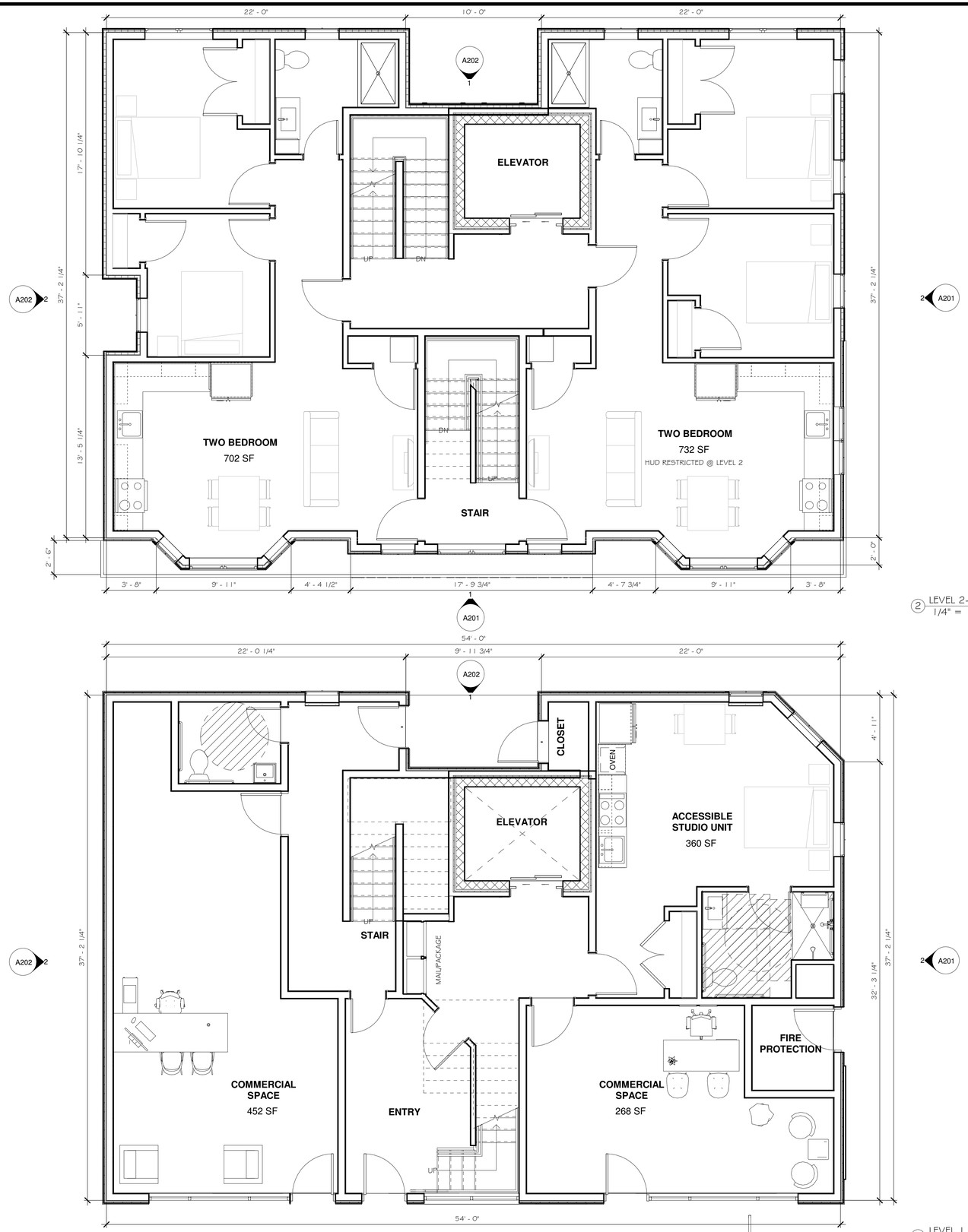
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SITE PLAN

A100



2 LEVEL 2-4 FLOOR PLAN
1/4" = 1'-0"

1 LEVEL 1 FLOOR PLAN
1/4" = 1'-0"

Revisions

Issue Date:	Description	Checked By
	REVISED PLANNING BOARD FILING	March 09, 2026

FLOOR PLANS

Scale: 1/4" = 1'-0"
Drawn By: Author
Date: March 08, 2026
Checked By: Checker
Project #: 11.6122.007

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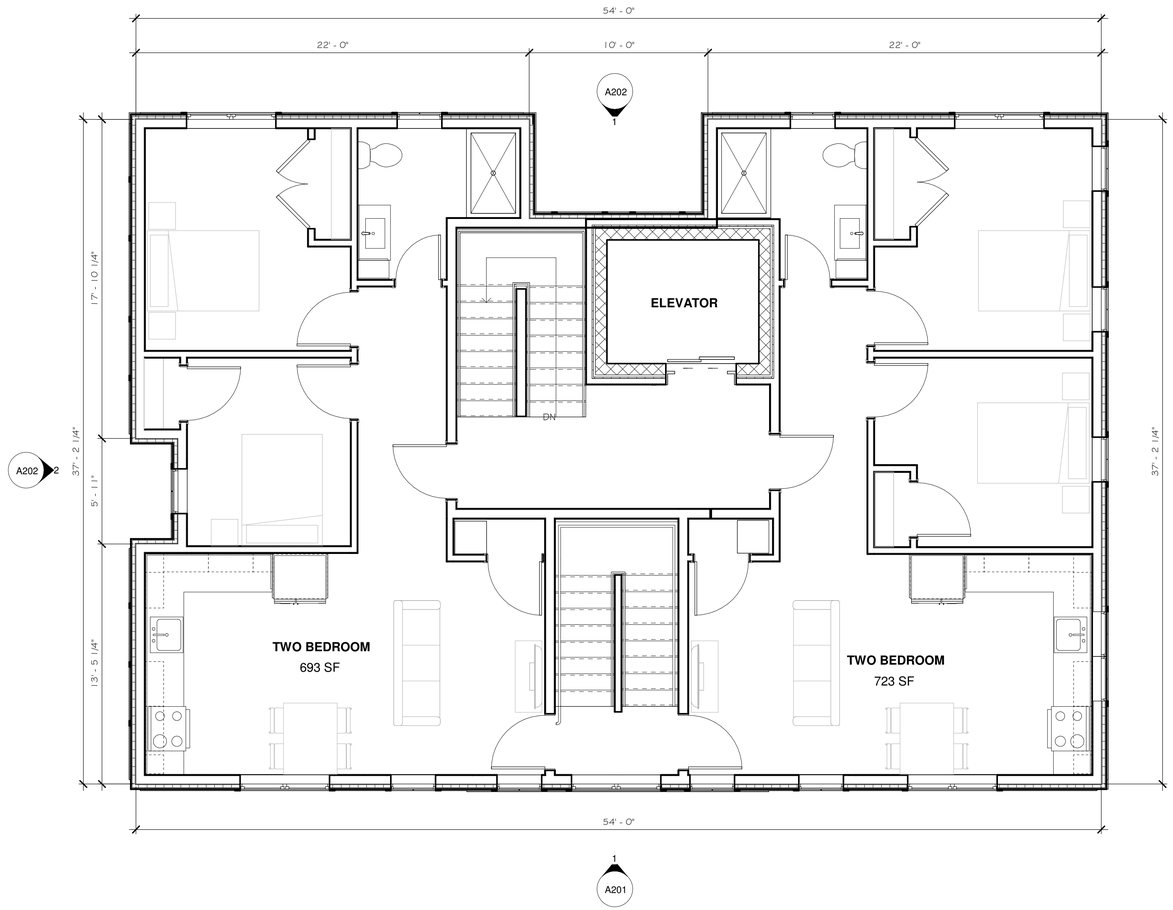
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FLOOR PLANS

A101



1 LEVEL 5 - FLOOR PLAN
1/4" = 1'-0"

Revisions		
	Issue Date:	Description
		REVISED PLANNING BOARD FILING

March 09, 2026
Checked By

FLOOR PLANS

Scale: 1/4" = 1'-0"
Drawn By: Author
Date: March 09, 2026
Checked By: Checker
Project #: 11.6122.007

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9-11 Mechanic Street Dover, NH 03820

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STEFANO J BASSI
No. 6395
BEVERLY
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FLOOR PLANS

A102

EXTERIOR KEYNOTES

Keynote Number	Description
1	BRICK, COLOR: TBD
2	BRICK SOLIDER COURSE
3	STONE VENEER, COLOR: TBD
4	CEMENTITIOUS CLAPBOARD SIDING, COLOR: LIGHT GREY MIST
5	SMOOTH PANEL WITH TRIM, COLOR: WHITE
6	INSULATED METAL UTILITY DOOR
7	HALF LITE GLASS DOOR, COLOR: TBD
8	WINDOW WITH SIMULATED DIVIDED LITE, SASH COLOR: BLACK
9	FULL LITE GLASS DOOR
10	1X8 CORNERBOARD, COLOR:WHITE
11	SIGN BAND, COLOR: BLACK
12	ALUMINUM STOREFRONT SYSTEM, BLACK ANODIZED
13	1X10 CORNICE, COLOR: WHITE



1 FRONT ELEVATION
1/4" = 1'-0"



2 RIGHT ELEVATION
1/4" = 1'-0"

Revisions

Issue Date:	Description	Checked By
△	REVISED PLANNING BOARD FILING	March 09, 2026

EXTERIOR ELEVATIONS

Scale: 1/4" = 1'-0"
Drawn By: Author
Date: March 09, 2026
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Project #: 11.6122.007

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BEVERLY
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EXTERIOR ELEVATIONS

A201

EXTERIOR KEYNOTES

Keynote Number	Description
1	BRICK, COLOR: TBD
2	BRICK SOLIDER COURSE
3	STONE VENEER, COLOR: TBD
4	CEMENTITIOUS CLAPBOARD SIDING, COLOR: LIGHT GREY MIST
5	SMOOTH PANEL WITH TRIM, COLOR: WHITE
6	INSULATED METAL UTILITY DOOR
7	HALF LITE GLASS DOOR, COLOR: TBD
8	WINDOW WITH SIMULATED DIVIDED LITE, SASH COLOR: BLACK
9	FULL LITE GLASS DOOR
10	1X8 CORNERBOARD, COLOR:WHITE
11	SIGN BAND, COLOR: BLACK
12	ALUMINUM STOREFRONT SYSTEM, BLACK ANODIZED
13	1X10 CORNICE, COLOR: WHITE



1 REAR ELEVATION
1/4" = 1'-0"



2 LEFT ELEVATION
1/4" = 1'-0"

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Revisions
Issue Date: Description
March 09, 2026 REVISED PLANNING BOARD FILING Checked By

EXTERIOR ELEVATIONS

Scale: 1/4" = 1'-0"
Drawn By: Author
Date: March 09, 2026
Checked By: Checker
Project #: 11.6122.007

Mechanic Street Landing
9-11 Mechanic Street Dover, NH 03820

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COMMONWEALTH OF MASSACHUSETTS
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BEVERLY
MA

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EXTERIOR ELEVATIONS

A202



1 FRONT ELEVATION
1/4" = 1'-0"



2 RIGHT ELEVATION
1/4" = 1'-0"

RENDERED EXTERIOR
ELEVATIONS

Scale:
Drawn By: Author
Date: March 09, 2026
Checked By: Checker
Project # 11.6122.007

Revisions
Issue Date: Description
REVISED PLANNING BOARD FILING
March 09, 2026
Checked By

Mechanic Street Landing
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RENDERED EXTERIOR
ELEVATIONS

A203



1 REAR ELEVATION
1/4" = 1'-0"



2 LEFT ELEVATION
1/4" = 1'-0"

Revisions

	Issue Date:	Description	Checked By
1	March 09, 2026	REVISED PLANNING BOARD FILING	

RENDERED EXTERIOR ELEVATIONS

Scale:
Drawn By: Author
Date: March 09, 2026
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Project # 11.6122.007

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RENDERED EXTERIOR ELEVATIONS

A204



STREET VIEW PERSPECTIVE

Scale: 3/32" = 1'-0"
Drawn By: Author
Checked By: Checker
Date: March 08, 2026
Project #: 11.6122.007

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Revisions

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△	REVISED PLANNING BOARD FILING	March 09, 2026

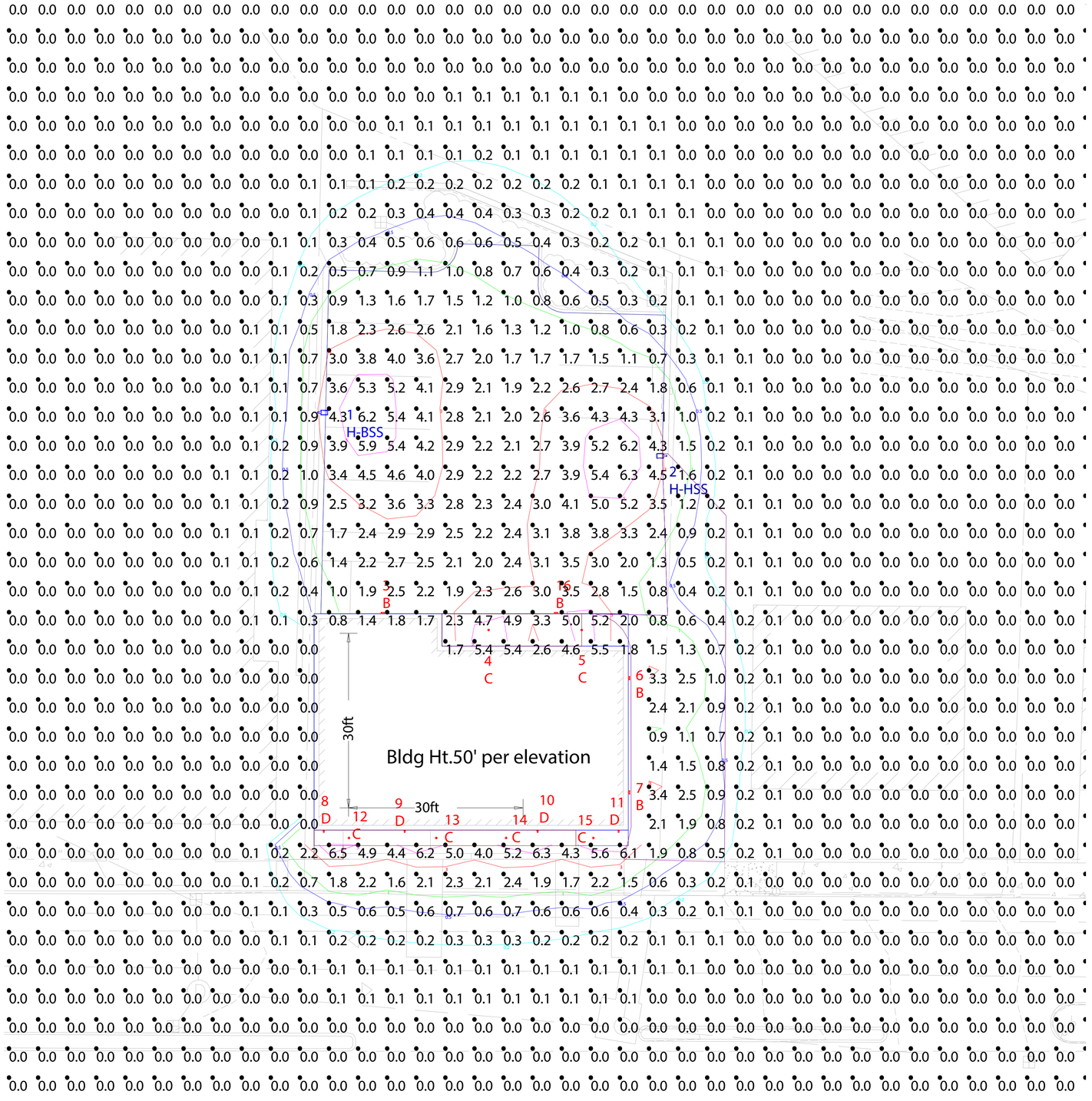
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STREET VIEW PERSPECTIVE

A205



Scale: 1 inch= 10 Ft.

PLOT TO 22"X34" PAGE

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RAB does not warranty, either implied or stated, actual measured light levels or energy consumption levels as compared to those illustrated by the Lighting Design.

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Scale: as noted
Date:2/18/2026

PROJECT # 4374736459

Filename: 9-11 Mechanic Street 4374736459B.AGI

Drawn By: M. Glover

Job Name:
9-11 Mechanic Street
Dover, NH

Lighting Layout
Version B

Prepared For:
Holbrook Associated
35 Reservoir Park Drive
Rockland, MA 02370
Tel: 781-871-0011

Filename: C:\Users\mmeredyth.glover\OneDrive - RAB Lighting\Desktop\Jobs\9-11 Mechanic Street 4374736459\9-11 Mechanic Street 4374736459B.AGI

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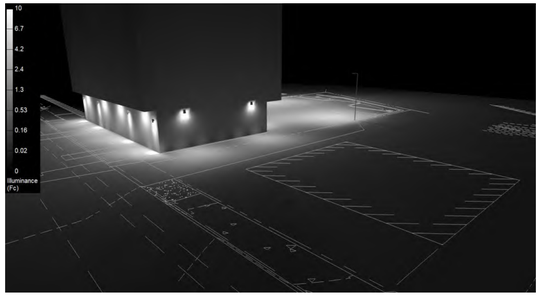
PLOT TO 22"X34" PAGE

Calculation Summary												
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**	**Description**	**PtSpcLr**	**PtSpcTb**	**Calc Ht**	**Meter Type**
Site	Illuminance	Fc	0.38	6.5	0.0	N.A.	N.A.	Readings taken at 0'-0" AFG	5	5	0	Horizontal
Entry Drive	Illuminance	Fc	1.24	3.4	0.2	6.20	17.00	Statistical Area				
Front Entrance	Illuminance	Fc	5.20	6.5	4.0	1.30	1.63	Statistical Area				
Parking Lot	Illuminance	Fc	2.78	6.3	0.3	9.27	21.00	Statistical Area				
Rear Entrance	Illuminance	Fc	3.94	5.4	1.7	2.32	3.18	Statistical Area				

Luminaire Schedule			All quotes/orders generated from this layout must be forwarded to the Local Rep Agency										
Symbol	**Qty**	**Tag**	**Label**	**Arrangement**	**Lum. Lumens**	**Arr. Lum. Lumens**	**LLF**	**Description**	**Lum. Watts**	**Arr. Watts**	**Total Watts**	**BUG Rating**	**Mounting Height**
	4	B	SLIMXXS-7W-4K-20°	Single	767	767	1.000	Wall mounted	6.6	6.6	26.4	B0-U0-G0	9, 13
	6	C	CR4-6W-4K	Single	682	682	1.000	Recessed ceiling mount	5.73	5.73	34.38	N.A.	8.417, 9.5
	4	D	CD34-3WZ @ 6W-4K-25°	Single	320	320	1.000	Wall mounted- direct	3.05031	3.05	12.201	B1-U0-G0	7.5
	1	H-BSS	ALEDS4TN + ALEDSHS Back-side	Single	5393	5393	1.000	Universal pole mount	40.6	40.6	40.6	B1-U0-G2	15
	1	H-HSS	ALEDS4TN + ALEDSHS House-side	Single	4282	4282	1.000	Universal pole mount	40.8	40.8	40.8	B1-U0-G1	15

Expanded Luminaire Location Summary						
LumNo	**Tag**	**X**	**Y**	**MTG HT**	**Orient**	**Tilt**
1	H-BSS	89.584	136.903	15	358.645	0
2	H-HSS	149.573	129.43	15	180.386	0
3	B	100.755	102.286	13	90	0
4	C	118.965	99.507	8.417	0	0
5	C	134.965	99.507	8.417	0	0
6	B	142.966	91.228	9	0	0
7	B	142.966	71.592	9	0	0
8	D	90.627	65.092	7.5	270	0
9	D	104.544	65.092	7.5	270	0
10	D	127.384	65.092	7.5	270	0
11	D	141.301	65.092	7.5	270	0
12	C	94.962	63.759	9.5	0	0
13	C	109.963	63.759	9.5	0	0
14	C	121.963	63.759	9.5	0	0
15	C	136.964	63.759	9.5	0	0
16	B	130.542	102.286	13	90	0
Total Quantity: 16						

Luminaire Tag Summary	
Tag	**Qty**
B	4
C	6
D	4
H-BSS	1
H-HSS	1





NOTES:
* The light loss factor (LLF) is a product of many variables. RAB's standard is to use the initial 1.0 LLF in accordance with most municipal lighting ordinance light trespass requirements, unless otherwise noted.

* Illumination values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.

* The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the anticipated performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.

* Mounting height determination is job site specific, our lighting simulations assume a mounting height (insertion point of the luminaire symbol) to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.

* RAB disclaims all responsibility for the suitability of existing or proposed poles and bases to support proposed fixtures. This is the owner's, installer's and/or end-user's responsibility based on the weight and effective projected area ("EPA") of the proposed fixtures and the owner's site and soil conditions, wind zone, and many other factors. A professional engineer licensed to practice in the state the site is located should be engaged to assist in this determination.

* The landscape material shown hereon is conceptual and is not intended to be an accurate representation of any particular plant, shrub, bush, or tree, as these materials are living objects, and subject to constant change. The conceptual objects shown are for illustrative purposes only. The actual illumination values measured in the field will vary.

* Photometric model elements such as buildings, rooms, plants, furnishings or any architectural details which impact the dispersion of light must be detailed by the customer documents for inclusion in the RAB Lighting Design. The owner/contractor/customer/end-user must provide accurate and complete construction drawings that reflect what will be the final construction RAB is not responsible for any inaccuracies caused by incomplete, inaccurate, or outdated information provided by the owner/contractor/customer/end-user.

* RAB Lighting Inc. luminaire and product designs are protected under U.S. and International intellectual property laws. Patents issued or pending may apply. Please see www.rablighting.com/ip.

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* Immediately prior to any party ordering RAB products used in the Lighting Design, the ordering party must verify that the lumen output of the fixtures being ordered (as shown on RAB's website) match the lumen output shown in the Lighting Design. Occasionally, Lighting Designs previously provided use fixtures that are then updated prior to an order and such updates could change the lumen output of the fixture. This in turn, could impact the installed lighting performance that differs from the Lighting Design.

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Scale: as noted

PROJECT # 4374736459

Date:2/18/2026

Filename: 9-11 Mechanic Street 4374736459B.AGI

Drawn By: M. Glover

Job Name:
9-11 Mechanic Street
Dover, NH

Lighting Layout
Version B

Prepared For:
Holbrook Associated
35 Reservoir Park Drive
Rockland, MA 02370
Tel: 781-871-0011

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ALEDS4TN



Color: Bronze

Weight: 13.2 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type	Constant Current
120V	0.67A
208V	0.40A
240V	0.34A
277V	0.30A
Input Watts	40.9/58.1/82.0W

LED Info

Watts	80W
Color Temp	4000K (Neutral)
Color Accuracy	82/82/83 CRI
L70 Lifespan	100,000 Hours
Lumens	5735/7895/10616 lm
Efficacy	140.2/135.9/129.5 lm/W

Technical Specifications

Field Adjustability

Field Adjustable (Wattage):
Field adjustable light output in 3 discrete steps:
Small Housing: 80W/60W/40W (factory default 80W)

Compliance

UL Listed:
Suitable for wet locations

IP Rating:
Ingress protection rating of IP66 for dust and water

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNAlm-79 andlm-80.

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

DLC Listed:
This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities. Designed to meet DLC 5.1 requirements.
DLC Product Code: S-YQSW2A

LED Characteristics

LEDs:
Long-life, high-efficacy, discrete, surface-mount LEDs

Color Consistency:
7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:
LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for (SSL) Products, ANSI C78.377-2017.

Electrical

Driver:
40W: Constant Current, Class 2, 120-277V, 50/60 Hz, 120V: 0.34A, 208V: 0.20A, 240V: 0.17A, 277V: 0.15A

60W: Constant Current, Class 2, 120-277V, 50/60 Hz, 120V: 0.50A, 208V: 0.30A, 240V: 0.25A, 277V: 0.22A

80W: Constant Current, Class 2, 120-277V, 50/60 Hz, 120V: 0.67A, 208V: 0.40A, 240V: 0.34A, 277V: 0.30A

Dimming Driver:
Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

THD:
2.22% at 120V, 7.07% at 277V

Power Factor:
99.9% at 120V, 96.6% at 277V

Surge Protection:
Line to Line: 10 kV
Line to Ground: 6 kV

Performance

Lifespan:
100,000-Hour LED lifespan based on IESlm-80 results and TM-21 calculations

Wattage Equivalency:
Equivalent to 250W Metal Halide

Construction

IES Classification:
The Type IV distribution is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semicircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

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Technical Specifications (continued)

Cold Weather Starting:
The minimum starting temperature is -40°F (-40°C)

Ambient Temperature :
Max Power Temp Rating: 104°F (40°C)
Middle Power Temp Rating: 52°C (125°F)
Low Power Temp Rating: 58°C (137°F)

Housing:
Die-cast aluminum

Reflector:
Aluminum reflector with white polycarbonate

Vibration Rating:
3G vibration rating per ANSI C136.31

Effective Projected Area:
1 Fixture: 0.35
2 Fixtures at 90°: 0.54
2 Fixtures at 180°: 0.7
3 Fixtures at 90°: 0.9
4 Fixtures at 90°: 0.9

Gaskets:
High-temperature silicone gaskets

Finish:
Formulated for high durability and long-lasting color

Green Technology:
Mercury and UV free. RoHS-compliant components.

Installation

Mounting:
Universal mounting arm compatible for hole spacing patterns from 1" to 3" center to center. Round Pole adapter plate included as a standard. Easy slide and lock to mount fixture with ease.

Optical

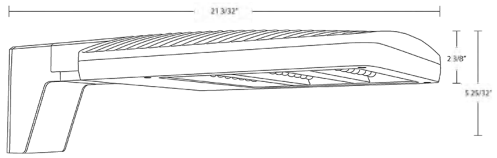
Bug Rating:
80W: B1 U0 G2
60W: B1 U0 G2
40W: B1 U0 G2

Other

10-Year, No-Compromise Warranty:
RAB warrants that our LED products will be free from defects in materials and workmanship for a period of ten (10) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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Dimensions



Features

- 0-10V dimmable standard
- IP66 Rated
- 100,000-Hour LED lifespan
- 10-Year, No-Compromise Warranty

Ordering Matrix

Family	Housing Size	Distribution	Mounting	Color Temp	Finish	Driver	Options
ALED	S	4T		N			
	M = Medium (150W/90W/78W) **L =** Large (260W/220W/170W) **XL =** Extra Large (385W/345W/300W) **S =** Small (80W/60W/40W)	**2T =** Type II **3T =** Type III **4T =** Type IV **5T =** Type V **AT =** Auto Dealership Optic	**Blank =** Universal Pole Mount **SF =** Slipfitter **WM =** Wall Mount	**Blank =** 5000K Cool **Y =** 3000K Warm [1] **N =** 4000K Neutral	**Blank =** Bronze **W =** White **B =** Black	**Blank =** 120-277V, 0-10V Dimming **/480 =** 480V, 0-10V Dimming	**Blank =** No Option **/7PR =** 7 Pin Twistlock Receptacle **/WS2 =** Wattstopper, 20ft lens **/WS4 =** Wattstopper, 40ft lens [3]

[1] *Dark sky approved in 3000K, available only on Small and Medium fixtures*
[2] *480V available only on Medium, Large & Extra Large fixtures*
[3] *Wattstopper option available only 0n Large & Extra Large fixtures*

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CD34-3WZ



Color: Bronze

Weight: 2.7 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current
120V	0.09A
208V	0.05A
240V	0.04A
277V	0.04A
Input Watts	10/8/06W

LED Info

Watts	10/8/06W
Color Temp	3000/4000/5000K
Color Accuracy	90 CRI
L70 Lifespan	50,000 Hours
Lumens	1000/800/600 lm
Efficacy	100

Technical Specifications

Performance

Product Type:
Cylinder Wall Mount

Description:
Economical cylinders with field-adjustable color temperature, power, and light distribution, along with field-swappable optics to fit any indoor or outdoor application.

Wattage Equivalency:
75W/60W/45W

Input Wattage:
10/8/6W

Nominal Lumens:
1000/800/600lm

Efficacy (±10%):
100lm/W

L70 Lifespan:
50,000-Hour LED lifespan based on IES LM-70 results

Electrical

Driver:
Constant Current, 50-60 Hz, 120V-277V

THD:
≤20%

Power Factor:
≥0.9

Dimmable:
Yes, dimmable down to 5% on compatible 0-10V dimming systems. See Dimmer Compatibility List. Requires separate 0-10V DC dimming circuit.

Input Voltage:
120-277V

Operating Frequency:
50/60Hz

Input Current @ 120V (mA):
85mA

Input Current @ 208V (mA):
50mA

Input Current @ 240V (mA):
42mA

Input Current @ 277V (mA):
38mA

Operating Temperature:
-40°F to 120°F (-40°C to 45°C)

Flicker:
≤1%

Photocell:
Integrated photocell included with on/off switch

LED Characteristics

Beam Angle:
25° (installed)
Field swappable optics sold separately for 25°/40°/60° beam angle_

Light Distribution:
Selectable dip switch for up, down, or up/down light

Color Temperature:
3000/4000/5000K

Color Accuracy (CRI):
90 CRI

R9 Value:
High color performance with R9 greater than 0

Color Consistency:
<6-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

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Technical Specifications (continued)

Color Stability:
LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Installation

Mounting:
Wall mount

Construction

Size:
3"

Shape:
Cylinder

Finish:
Bronze

Enclosure Material:
Die-cast aluminum and polycarbonate

Lens Finish:
Clear (installed)
Frosted lens accessory sold separately

Compliance

Listings:
UL Listed

Environment:
Suitable for use indoors and outdoors in dry, damp, or wet environments.

Fixture Rating:
Suitable for use in open fixtures

IP Rating:
IP65

Certification Model Number:
CD2009(CD34-3WZ)

California Title 20 Compliant:
No

California Title 24 JA8 Compliant:
No

California Energy Commission (CEC) Status:
Lawful for Sales in California

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

RoHS:
Mercury and UV free. RoHS-compliant components.

FCC:
Complies with Part 15 of the FCC Rules

Other

Compatible Accessories:
CD34REF-325D
25° reflector

CD34REF-340D
40° reflector

CD34REF-360D
60° reflector

CD34LENS-3FRW
3" frosted lens white

CD34LENS-3FRK
3" frosted lens black

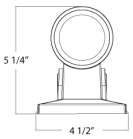
CD34LENS-3FRZ
3" frosted lens bronze

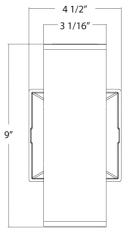
5-Year Limited Warranty:
The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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CD34-3WZ

Dimensions





Features

- Aluminum extrusion housing and die-cast covers available in black, bronze, or white
- Field interchangeable optics sold separately for 25°/40°/60° beam angle
- Field-adjustable color temperature 3000/4000/5000K (indoor); 2700/3000/3500/4000/5000K (outdoor).
- Dimmable on 0-10V systems (indoor); integrated photocell (outdoor)

Ordering Matrix

Family	Size/Wattage	Mounting	Light Direction	CRI/Color Temp	Driver	Finish	RGB Color Tuning
CD34	3	W				Z	
	3 = 3", 10/8/6W **4 =** 4", 20/16/12W **6 =** 6", 36/28/22W	**W =** Wall	**Blank =** Selectable-Down, Up or Both	**Blank =** 90 CRI, 3000/4000/5000K	**Blank =** 120-277V, 0-10V Dimming	**Z =** Bronze **K =** Black **W =** White	**Blank =** None **/RGB =** Color Tuning 16+ million colors; Tunable White 2200-6500K

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CR4



Color: White

Weight: 0.9 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current, Class A
120V	0.11A
208V	N/A
240V	N/A
277V	0.04A
Input Watts	10/8/06W

LED Info

Watts	10/8/06W
Color Temp	2700/3000/3500/4000/5000K
Color Accuracy	90 CRI
L70 Lifespan	50,000 Hours
Lumens	1,000/800/600 lm
Efficacy	109.83/112.09/112.64 lm/W

Technical Specifications

Performance

Product Type:
Commercial Downlight

Description:
The CR commercial downlight offers best-in-class flexibility by adding universal dimming, which allows for both TRIAC & 0-10V dimming, making it a great choice for residential & commercial installations.

Wattage Equivalency:
23W CFL

Input Wattage:
10/8/6W

Lumens:
6W
637lm @ 2700K; 653lm @ 3000K; 669lm @ 3500K; 680lm @ 4000K; 693lm @ 5000K

8W
835lm @ 2700K; 859lm @ 3000K; 883lm @ 3500K; 899lm @ 4000K; 909lm @ 5000K

10W
1,048lm @ 2700K; 1,082lm @ 3000K; 1,116lm @ 3500K; 1,138lm @ 4000K; 1,143lm @ 5000K

Efficacy:
6W
109lm/W @ 2700K; 113lm/W @ 3000K; 117lm/W @ 3500K; 119lm/W @ 4000K; 119lm/W @ 5000K

8W
108lm/W @ 2700K; 111lm/W @ 3000K; 116lm/W @ 3500K; 118lm/W @ 4000K; 117lm/W @ 5000K

10W
105lm/W @ 2700K; 110lm/W @ 3000K; 115lm/W @ 3500K; 117lm/W @ 4000K; 115lm/W @ 5000K

L70 Lifespan:
50,000-Hour LED lifespan based on IES LM-70 results

Electrical

Driver:
Constant Current, Class A, 50/60 Hz, 120V-277V, 120V: 0.11A, 277V: 0.04A

THD:
≤20%

Power Factor:
≥0.9

Dimmable:
Yes, dimmable down to 10% on compatible TRIAC/ELV and 0-10V dimming systems. See Dimmer Compatibility List.

Input Voltage:
120-277V

Operating Frequency:
50/60Hz

Input Current @ 120V (mA):
110mA

Input Current @ 277V (mA):
37mA

Operating Temperature:
-4°F to 104°F (-20°C to 40°C)

Flicker:
≤30%

LED Characteristics

Beam Angle:
85°±10°

Color Temperature:
Field adjustable via dip switch
2700/3000/3500/4000/5000K

Color Accuracy (CRI):
90 CRI

R9 Value:
High color performance with R9 greater than 50

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Technical Specifications (continued)

Color Consistency:
<4-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:
LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:
RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Installation

Mounting:
Recessed

Construction

Size:
4"

Shape:
Round

Finish:
White

Enclosure Material:
Metal

Trim Style:
Smooth

Lens Finish:
Frosted

Lens:
Polycarbonate light diffuser distributes light evenly and smoothly for general lighting applications

Compliance

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

Listings:
UL Listed, UL Classified

Environment:
Suitable for use indoors and outdoors in dry, damp, or wet environments.

IC Rated:
Suitable for direct contact with insulation.
Type IC inherently protected, suitable for direct contact to air permeable insulation and cULus listed for damp locations. Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013.

Air Tight:
Housing certified Air Tight as per ASTM-E283

Energy Star Approved:
This product is ENERGY STAR® Version 1.0 Certified.

Energy Star ID:
3554272

DLC Listed:
No

Certification Model Number:
DLC1006(CR4)

California Title 20 Compliant:
No

California Title 24 JA8 Compliant:
Can be used to conform with the requirements of California Title 24 Part 6

California Energy Commission (CEC) Status:
Lawful for Sales in California

NEC Compliant:
Suitable for use in closets. Compliant with NEC Sec. 410.16 (A)(1) and 410.16 (C3).

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

RoHS:
Mercury and UV free. RoHS-compliant components.

FCC:
Complies with Part 15 of the FCC Rules

Other

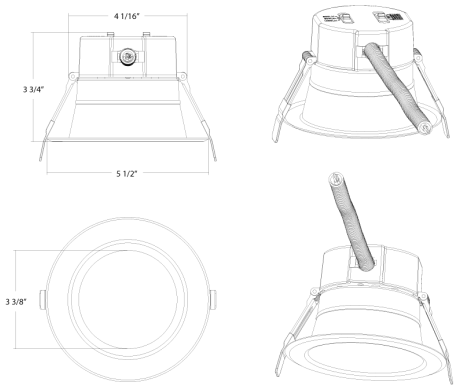
Compatible Products:
DLPLATE/WFR4/NB/CL
4" Mounting plate with nailer bar and drywall collar

DRI-21-EMGR-DC-D10
Emergency driver T20

5-Year, No-Compromise Warranty:
RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

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Dimensions



Features

- Universal dimming technology allows for both 120V TRIAC/ELV dimming and 0-10V dimming in 1 SKU for incredible design flexibility
- 3 selectable brightness levels & 5 selectable CCTs (2700/3000/3500/4000/5000K)
- Suitable for new construction & remodel installations
- Deep regress lens for optimal glare control
- Multiple accessories available, including color trims and new construction mounting plates

Ordering Matrix

Family	Size/Wattage	Shape	CRI/Color Temp	Driver	Finish	Trim
CR	4					
	4 = 4", 10/8/6W **6 =** 6", 21/17/10W **8 =** 8", 30/24/16W **10 =** 10", 37/30/24W	**Blank =** Round	**Blank =** 90 CRI, 2700/3000/3500/4000/5000K CCT Adjustable	**Blank =** 120-277V, 0-10V + TRIAC/ELV	**Blank =** White	**Blank =** Smooth

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PS4-11-15D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze

Weight: 105.8 lbs

Project:	Type:
Prepared By:	Date:

Technical Specifications

Compliance

CSA Listed:
Suitable for wet locations

Construction

Shaft:
46,000 p.s.i. minimum yield.

Hand Holes:
Reinforced with grounding lug and removable cover

Base Plates:
Slotted base plates 36,000 p.s.i.

Shipping Protection:
All poles are shipped in individual corrugated cartons to prevent finish damage

Color:
Bronze powder coating

Height:
15 ft

Weight:
106 lbs

Gauge:
11

Wall Thickness:
1/8"

Shaft Size:
4"

Hand Hole Dimensions:
3" x 5"

Bolt Circle:
8 1/2"

Base Dimension:
8"

Anchor Bolt:
Anchor bolt kits are sold separately. Order ABK4-11-BCK-S4 for anchor bolt kits.

Anchor Bolt Templates:
WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available online.

Max EPA's/Max Weights:
70MPH 17.4 ft/450 lb.
80MPH 12.5 ft/440 lb.
90MPH 9.0 ft/440 lb.
100MPH 6.6 ft/440 lb.
110MPH 4.8 ft/435 lb.
120MPH 3.4 ft/435lb.
130MPH 2.3 ft/435 lb.
140MPH 1.4 ft/430 lb.
150MPH 0.8 ft/420 lb

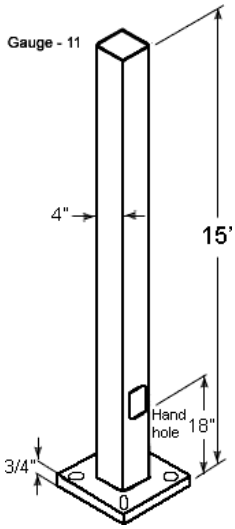
Other

Terms of Sale:
Pole Terms of Sale is available online.

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PS4-11-15D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Pole caps, base covers & bolts are sold separately
- Custom manufactured for each application

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SLIMXXS



Color: Bronze

Weight: 0.0 lbs

Project:	**Type:**
Prepared By:	**Date:**

Driver Info

Type	Constant Current
120V	0.02A/0.03A/0.05A
208V	0.02A/0.03A/0.04A
240V	0.02A/0.03A
277V	0.02A/0.03A
Input Watts	3.5-6.7W

LED Info

Watts	3.5/5/7W
Color Temp	3000/4000/5000K
Color Accuracy	80-83 CRI
L70 Lifespan	100,000 Hours
Lumens	301-873 lm
Efficacy	83.6-130.3 lm/W

Technical Specifications

Field Adjustability

Field Adjustable:
Field Adjustable Light Output:
7/5/3.5W (factory default 5W)
Color temperature selectable 3000K, 4000K and 5000K (factory default 4000K)
Field-adjustable optics: -20° to +20°
On/Off Photocell (factory default "Off")

Performance

Lifespan:
100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

LED Characteristics

LEDs:
Long-life, high-efficiency, surface-mount LEDs

Electrical

Driver:
7W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.05A, 208V: 0.04A, 240V: 0.03A, 277V: 0.03A
5W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.03A, 208V: 0.03A, 240V: 0.03A, 277V: 0.02A
3.5W: Constant Current, Class 1, 120-277V, 50/60 Hz, 120V: 0.02A, 208V: 0.02A, 240V: 0.02A, 277V: 0.02A

Dimming Driver:
Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims down to 10%.

Photocell:
120-277V selectable photocell that can be turned on and off.

Aux Power Supply:
Yes

Dim to Off:
Yes

Construction

Cold Weather Starting:
The minimum starting temperature is -40°F (-40°C)

Maximum Ambient Temperature:
Suitable for use in up to 104°F (40°C)

Housing:
Die-cast aluminum

Lens:
Tempered glass

Gaskets:
High-temperature silicone

Finish:
Formulated for high durability and long-lasting color

Green Technology:
Mercury and UV free. RoHS-compliant components.

Compliance

UL Listed:
Suitable for wet locations

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

ADA Compliant:
Meets ADA Requirements for wall-mounted luminaires.

IP Rating:
Ingress protection rating of IP65 for dust and water

Dark Sky Approved:
Conforms to the requirements listed by the International Dark-Sky Association for "Dark Sky" approval. The Fixture Seal of Approval provides objective, third-party certification for luminaries that minimize glare, reduce light trespass, and don't pollute the night sky.

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Technical Specifications (continued)

Trade Agreements Act Compliant:
This product is a product of Cambodia and a "designated country" end product that complies with the Trade Agreements Act

DLC Listed:
This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities. Designed to meet DLC 5.1 requirements.
DLC Product Code: S-37D7SM

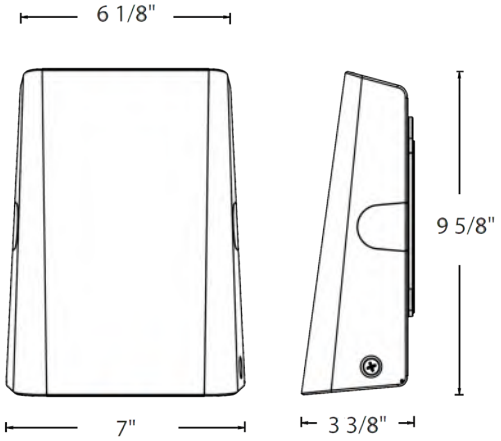
Installation

Mounting:
Heavy-duty mounting bracket with spring-hinged housing and "kick stand" allow for easy installations. Conduit entries on back and both sides.

Other

5-Year, No-Compromise Warranty:
RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Dimensions



Features

- 100,000-Hour LED lifespan
- 0-10V dimming standard
- 5-Year, no-compromise warranty

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Ordering Matrix

Family	Wattage	Color Temp	Finish	Driver	Options
SLIM	XXS				
	XXS = 7/5/3.5W **XS =** 25/18/12W **S =** 38/28/18W **M =** 55/41/27W **L =** 60/45/29W	**Blank =** 3000/4000/5000K CCT Adjustable **Y =** 3000K Static	**Blank =** Bronze **W =** White	**Blank =** 120-277V, 0-10V Dimming	**Blank =** No Option **/LC =** Lightcloud **/LCB =** Lightcloud Blue

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SITE PLAN

9-11 MECHANIC STREET

ASSESSOR'S MAP 24 LOT 101

DOVER, NH 03820

DATE: APRIL 3, 2025

REVISED DATE: MARCH 10, 2026

PREPARED FOR:

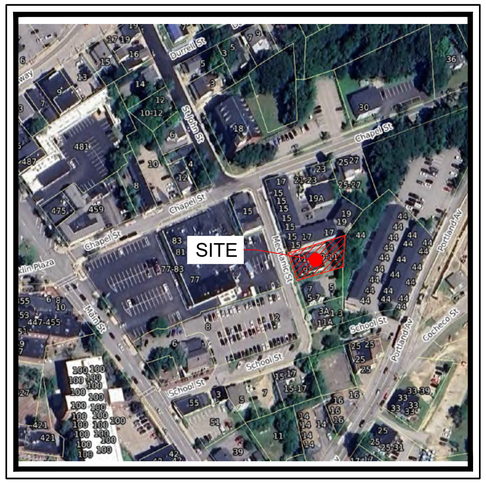
MECHANIC STREET REALTY TRUST

23A MIDDLE STREET

NEWBURYPORT, MA 01950

INDEX OF DRAWINGS

SHEET NO.	DWG NO.	DRAWING TITLE
1.	CS0001	COVER SHEET
2.	CS0201	EXISTING CONDITIONS PLAN
3.	CS0501	DEMOLITION PLAN
4.	CS1001	LAYOUT AND MATERIALS
5.	CS1501	GRADING & DRAINAGE PLAN
6.	CS1601	UTILITY PLAN
7.	CS1701	LANDSCAPE AND LIGHTING PLAN
8.	CS2701	TURNING PLAN
9.	CS3501	UTILITY PLAN AND PROFILES
10.	CS6001	SITE DETAILS
11.	CS6002	CONSTRUCTION STANDARD DETAILS
12.	CS6003	CONSTRUCTION STANDARD DETAILS
13.	CS6011	DRAINAGE DETAILS
14.	CS7001	EROSION CONTROL PLAN AND DETAILS
15.	CS9201	PRE & POST DEVELOPMENT DRAINAGE PLAN



LOCATION MAP
N.T.S.

PREPARED BY:

RANGER ENGINEERING GROUP, INC

Ranger Engineering Group, Inc.

130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

NOTE:

1. THE PLANNING BOARD FOUND THAT THE CRITERIA OF CHAPTER 153-21 HAVE BEEN MET AND THE BOARD APPROVED THE FOLLOWING WAIVERS:

   153-13A(12), REQUIRED LANDSCAPE PLAN SIGNED BY A LICENSED LANDSCAPE ARCHITECT.

   153-14.D.6(b), REQUIRED TWO-WAY ACCESS WAY WIDTH OF 24'.

STATE OF NEW HAMPSHIRE
BENJAMIN G. OSGOOD, JR
No. 12020
LICENSED
PROFESSIONAL ENGINEER
3/31/26

DATE	NO.	REVISIONS	BY
03/10/26	5	PLANNING BOARD COMMENTS	BCO
01/29/26	4	NEW TRC COMMENTS	BCO
11/26/25	3	REMAINING TRC COMMENTS	BCO
10/21/25	2	TRC COMMENTS	BCO
09/02/25	1	TRC COMMENTS	BCO

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,
ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

COVER SHEET
CS0001

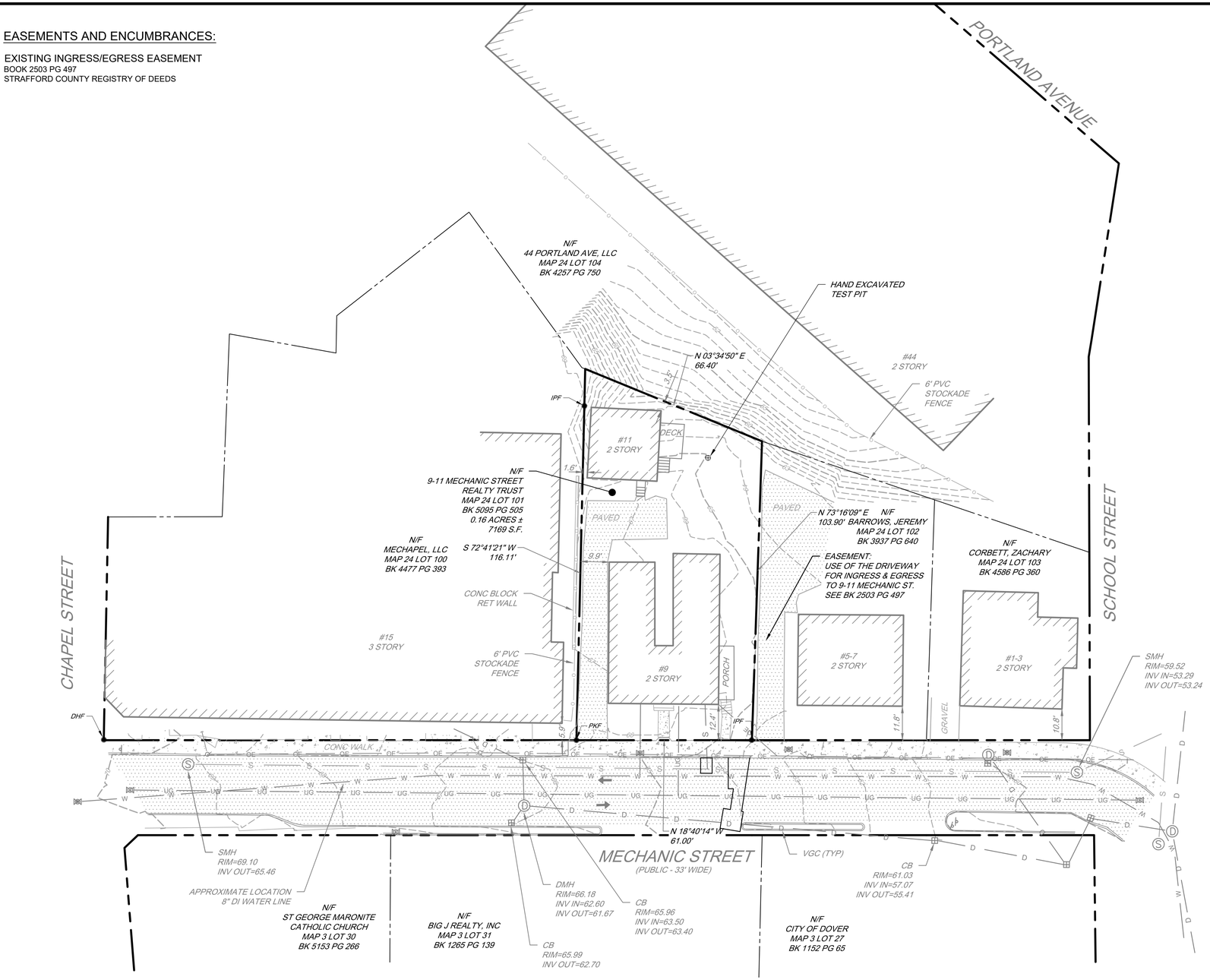
Ranger Engineering Group, Inc.

130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: | SHEET 1 OF 15

EASEMENTS AND ENCUMBRANCES:

EXISTING INGRESS/EGRESS EASEMENT
BOOK 2503 PG 497
STRAFFORD COUNTY REGISTRY OF DEEDS



NAD 83

NORTH

0 20' 40'

GRAPHIC SCALE 1" = 20'

LEGEND

EXISTING

- BUILDING
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- WOOD FENCE
- CONCRETE
- BIT. CONC. PAVEMENT
- SIGN
- 50 CONTOUR
- W W WATER LINE DOMESTIC
- S S SANITARY SEWER
- D D STORM SEWER
- OE OE OVERHEAD ELECTRIC
- UG UG UNDERGROUND GAS
- UTILITY POLE
- SANITARY MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE

NOTES:

1. THE INTENT OF THIS PLAN IS TO REDEVELOP THE LOT IN DOVER NH KNOWN AS 9-11 MECHANIC STREET
2. OWNERS OF RECORD ARE: 9-11 MECHANIC STREET
   REALTY TRUST , BEN LEGARE, TRUSTEE
   NEWBURYPORT, MA 01950

   AUTHORIZED SIGNATURE
3. THE PARCEL IS SHOWN AS LOT NO. 101, MAP 24 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS
4. THE SUBJECT PARCEL CONTAINS 0.16 ACRES OR 7169 SQ. FT. AREA OF LAND
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5095 PAGE NO. 505
6. REFERENCE PLANS: BOOK NO. 108 PAGE NO. 3 STRAFFORD COUNTY REGISTRY OF DEEDS

   "LAND OF JASON, JAMES III, & KEVIN WOOD & JOLEEN FERNALD FOR CHANGING PLACES, LLC. MECHANIC AND CHAPEL STREETS, DOVER NH. TAX MAP 24, LOTS 98, 99, 100."
   FILED AT THE DOVER NH ENGINEERING DEPARTMENT
7. THE USE OF DRIVEWAY EASEMENT IS REFERENCED IN A DEED AT BOOK 2503 PG 497.
8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS IN EFFECT ARE AS FOLLOWS:

	REQUIRED:	PROVIDED:
a.	ZONING DISTRICT CBD SUB-DISTRICT G	ZONING DISTRICT CBD SUB-DISTRICT G
b.	MINIMUM LOT SIZE: N/A	LOT SIZE: 0.16 ACRES
c.	MINIMUM LOT FRONTAGE: N/A	LOT FRONTAGE: 61.00'
d.	MINIMUM YARD SETBACKS/BUILD-TO-LINES:	
	FRONT: 10' +/- 5'	FRONT: 5'
	SIDE: 0' MIN - 24' MAX	SIDE: 0.8'
	REAR: 10' MIN	REAR: 66.75'
	ABUT-A-STREET: N/A	ABUT-A-STREET: N/A
e.	MINIMUM LOT COVERAGE: 75%	LOT COVERAGE:70%
f.	MAXIMUM BLDG. HEIGHT: 5 STORIES	BLDG. HEIGHT: 5 STORIES

9. VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD, INCLUDING CASE#, DATE, AND ANY CONDITIONS
10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY RANGER ENGINEERING GROUP, INC. ON 12/16-17/2024 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
11. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL #33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015).
12. THERE ARE NO WETLANDS LOCATED ON THIS PROPERTY.
13. TOPOGRAPHIC SURVEY PERFORMED BY RANGER ENGINEERING GROUP, INC. ON 12/16-17/2024.
14. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
15. AS-BUILT PLANS OF THE CONSTRUCTION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT.

TOP ELEV = 64.50 ESHGW = 60.00

TP1				
DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING
0"-10"	GRAVEL FILL	VARIES	VARIES	
10"-26"	FILL WITH DEBRIS	VARIES	VARIES	
26"-47"	B	F.S.	10 YR 4/6	
47"-54"	C	F.S.	2.5 Y 6/6	
NO REDOX				

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 682 TIMOTHY J. WININGS
9/3/2025

DATE	NO.	REVISIONS	BY
03/10/26	5	PLANNING BOARD COMMENTS	BCO
01/29/26	4	NEW TRC COMMENTS	BCO
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SITE PLAN

9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

EXISTING CONDITIONS PLAN
CS0201

BENJAMIN G. OSGOOD, JR. No. 12030 LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE
3/4/26

Ranger Engineering Group, Inc.

130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

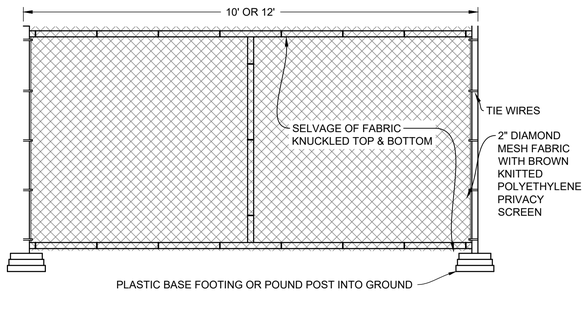
DATE:	SCALE:	SHEET		OF	
2025-10-21	1" = 20'	SHEET	2	OF	15

LEGEND

DEMOLITION AREA

DEMOLITION NOTES:

1. STRUCTURE SHALL BE INSPECTED TO DETERMINE IF THERE IS ASBESTOS OR ANY OTHER HAZARDOUS MATERIAL PRESENT IN THE STRUCTURES. ANY HAZARDOUS MATERIAL SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIAL CONTRACTOR AND DISPOSED OF AT A LICENSED DISPOSAL FACILITY.
2. STRUCTURES SHALL BE INSPECTED FOR THE PRESENCE OF RODENTS WHICH SHALL BE REMOVED PRIOR TO DEMOLITION ACTIVITIES.
3. UTILITIES SHALL BE TURNED OFF, DISCONNECTED OR CUT AND CAPPED PRIOR TO DEMOLITION.
4. TEMPORARY CHAIN LINK FENCE SHALL BE INSTALLED PRIOR TO DEMOLITION.
5. WASTE MATERIALS SHALL BE DEPOSITED IN COVERED CONTAINERS AND REMOVED TO BE DISPOSED OF AT A LICENSED DISPOSAL FACILITY.
6. ROADWAY MILLING TO BE DONE ONCE ALL UTILITY PATCHES, CURBING AND SIDEWALKS ARE INSTALLED.



NOTE:

1. GATES AND HARDWARE TO BE AS PER MANUFACTURER'S SPECIFICATION. SUBMIT MANUFACTURER'S LITERATURE FOR APPROVAL.

1 6' TEMPORARY CHAIN LINK FENCE
NOT TO SCALE

DATE	NO.	REVISIONS	BY
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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

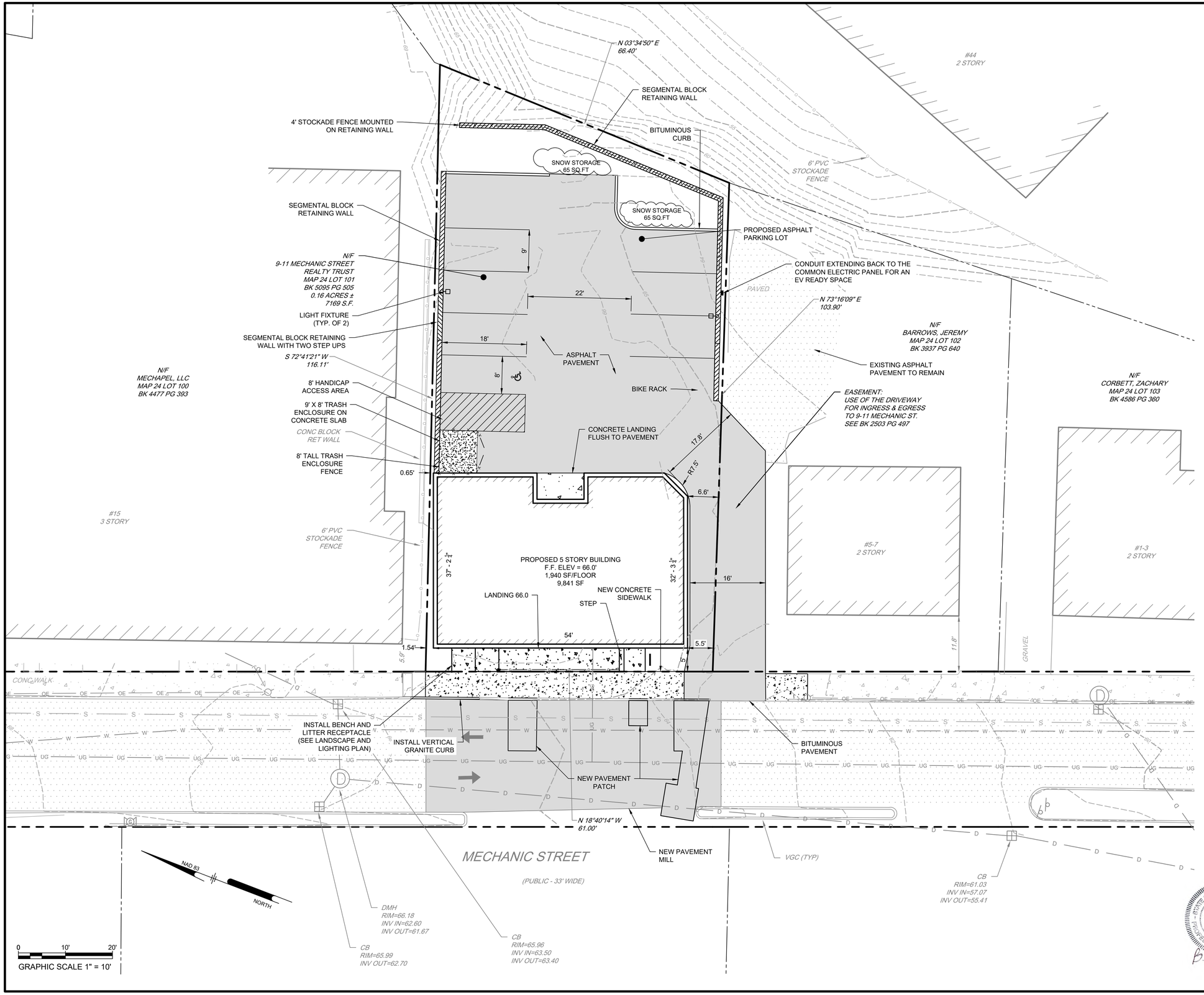
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

DEMOLITION PLAN
CS0501

Ranger Engineering Group, Inc.
130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 3 OF 15

STATE OF NEW HAMPSHIRE — BENJAMIN G. OSGOOD, JR. — No. 12230 — LICENSED PROFESSIONAL ENGINEER — 3/10/26



NOTES:

1. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
2. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
3. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
4. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES OF FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
5. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.
6. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
7. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURRING.
8. A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
9. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM - 6 PM AND NO WORK ON FEDERAL HOLIDAYS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
10. BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
11. THE PROPOSED USE FOR THE SITE IS 90% RESIDENTIAL, 10% COMMERCIAL.
12. NO FEDERAL/STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY AND NONE ARE REQUIRED.
13. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
14. ANY RETAINING WALL TALLER THAN FOUR FEET REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
15. ANY FENCE TALLER THAN SEVEN FEET REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
16. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
17. THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 & 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
18. MECHANIC STREET SHALL BE CONSIDERED THE FIRE DEPARTMENT ACCESS ROAD.
19. (9 UNITS X 1.25 PER UNIT) + (9 UNITS * 0.4 VISITOR SPACES PER UNIT) + 3 SPACES FOR 693 S.F. OF COMMERCIAL SPACE = 18 SPACES REQUIRED AND 8 SPACES PROVIDED.
20. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY. SEE RAB LIGHTING DESIGN PLAN
21. WHEN SNOW STORAGE AREAS ARE FULL EXCESS SNOW SHALL BE REMOVED FROM THE PROPERTY.
22. SEGMENTAL BLOCK RETAINING WALL MAY REQUIRE A STRUCTURAL DESIGN AND BUILDING PERMIT PRIOR TO CONSTRUCTION.

DATE	NO.	REVISIONS	BY
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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

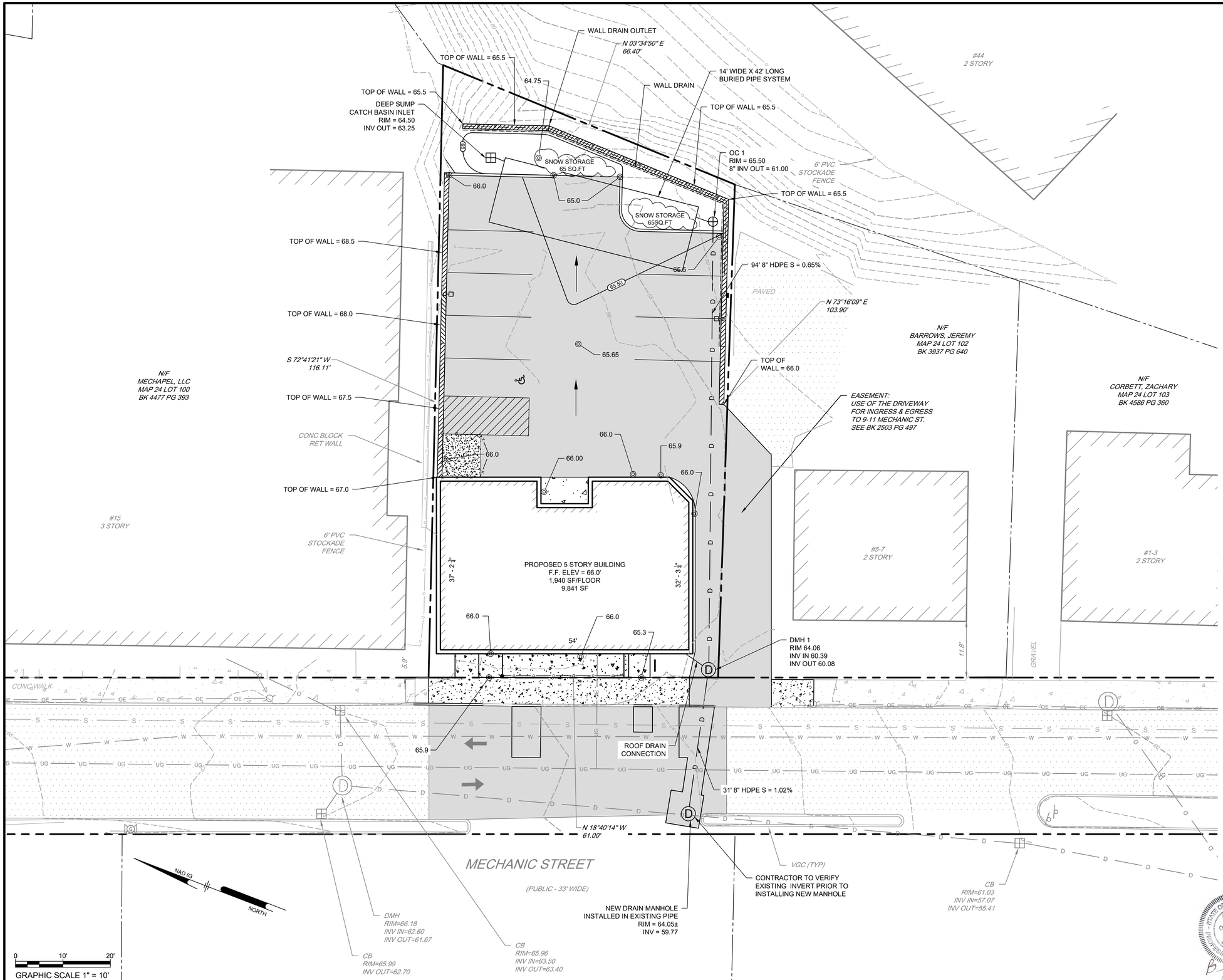
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

LAYOUT & MATERIALS
CS1001

Ranger Engineering Group, Inc.
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Tel: 978-208-1762
rangereng.com

BENJAMIN C. OSGOOD, JR. No. 12080 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 4 OF 15



LEGEND

EXISTING		PROPOSED
	BUILDING	
	PROPERTY LINE	
	RIGHT-OF-WAY LINE	
	ADJACENT PROPERTY LINE	
o o o	WOOD FENCE	
	CONCRETE	
	BIT. CONC. PAVEMENT	
o	SIGN	
50	CONTOUR	100
W W	WATER LINE DOMESTIC	W W
S S	SANITARY SEWER	
D D	STORM SEWER	D D
OE OE	ELECTRIC LINE	UE UE
UG UG	UNDERGROUND GAS	
	UTILITY POLE	
S	SANITARY MANHOLE	
D	STORM DRAIN MANHOLE	D
	STORM DRAIN INLET	
	STORM DRAIN CLEANOUT	
	FIRE HYDRANT	
	WATER VALVE	
	GAS VALVE	

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SITE PLAN

9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

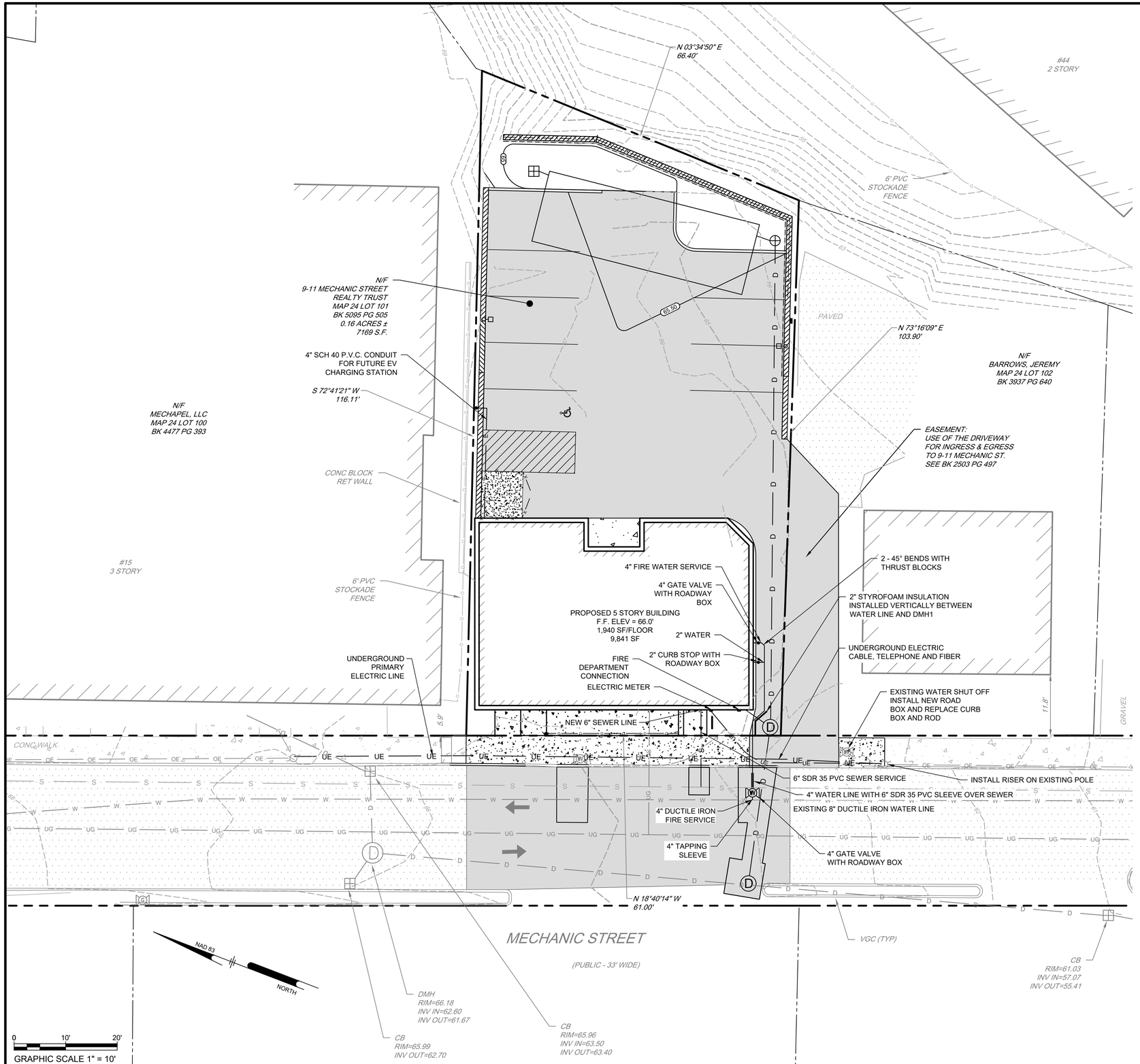
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

GRADING & DRAINAGE PLAN
CS1501

Ranger Engineering Group, Inc.
130 Main Street. Suite 202
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rangereng.com

BENJAMIN C. OSGOOD, JR. No. 12230 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
3/10/26

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 5 OF 15



NOTES:

1. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
2. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
3. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81 - 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
4. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION O F THE BACKFLOW DEVICE.
5. FIRE DEPARTMENT CONNECTION SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
6. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.
7. THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE OVERVIEW OF PUBLIC UTILITIES WITHIN THE SITE PLAN.
8. UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVE AND BELOW GROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITY CONFLICTS SHOULD BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.
9. THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
10. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED .TO MAINTAIN STABLE, DEWATERED SUBGRADES, TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE. PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING. STRUCTURAL FILL MEETING THE ENGINEERS SPECIFIC RECOMMENDED CRITERIA.
11. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER (NOT ALLOWED IN CITY R.O.W.), EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY OF OPERATION. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
12. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION. VOIDS BETWEEN STONES AND CLUMPS OF MATERIAL SHALL BE FILLED WITH FINE MATERIALS.
13. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES AND DOVER DPW.
14. CONTRACTOR TO CONTACT DOVER DPW A MINIMUM OF TWO WEEKS PRIOR TO ANY CONSTRUCTION TO COORDINATE ALL WORK CONCERNING THE INSTALLATION OF ANY PROPOSED WATER LINE IMPROVEMENTS.
15. ALL WATER MAIN AND SERVICE INSTALLATIONS SHALL CONFORM TO CITY OF DOVER STANDARDS. ALL HIGHWAY CONSTRUCTION WILL MEET THE CITY OF DOVER STANDARDS AS MODIFIED BY WAIVER REQUEST AT THE PLANNING BOARD.
16. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL INSTALLATIONS WITH EVERSOURCE AT (800) 662-7764.ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL. A 48 HOUR MINIMUM NOTICE IS REQUIRED.
17. ALL SEWER INSTALLATIONS SHALL CONFORM TD THE REQUIREMENTS OF NHDES & DOVER DPW SEWER DIVISION STANDARDS.
18. CONTRACTOR SHALL COORDINATE ALL TELECOMMUNICATIONS INSTALLATIONS WITH FAIRPOINT COMMUNICATIONS AT (603) 427-5525.
19. CONTRACTOR SHALL COORDINATE ALL CABLE INSTALLATIONS WITH COMCAST.
20. ALL SEWER MANHOLE RIMS & COVERS ARE TO BE HINGED.
21. ALL WATER SERVICES ARE TO BE WITNESSED WITH A 2"X4" PAINTED BLUE. ALL SEWER SERVICES ARE TO BE WITNESSED WITH A 2"X4" PAINTED GREEN, IF STUBBED PRIOR TO BUILDING CONSTRUCTION.
22. ALL WATER SHUT OFF VALVES LOCATED WITHIN PAVED AREAS ARE TO BE PLACED IN GATE BOXES.
23. GAS LINES AND METER LOCATIONS ARE TO BE COORDINATED 'MTH UNITIL AND THE CITY OF DOVER BUILDING DEPARTMENT.
24. ALL SEWER INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF NHDES & DOVER DPW SEWER DIVISION STANDARDS, ALL PVC SEWER PIPE IS TO CONFORM WITH ENV-WQ 704.0S(c)(e).
25. WATER SERVICE LOCATIONS WITH LESS THAN 5' OF COVER SHALL 2" INSULATION BOARD INSTALLED ABOVE THE LINE, SUBJECT TO REVIEW AND APPROVAL BY THE CITY ENGINEER

SEWER FLOW CALCULATIONS

RESIDENTIAL FLOW
8 TWO BEDROOM UNITS@ 150 GPD/BEDROOM = 2400 GALLONS
1 ONE BEDROOM UNIT @ 150 GPD/BEDROOM = 150 GALLONS

COMMERCIAL FLOW
4 EMPLOYEES @10 GPD/EMPLOYEE = 40 GALLONS

TOTAL DAILY FLOW = 2,590 GALLONS PER DAY

DATE	NO.	REVISIONS	BY
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09/02/25	1	TRC COMMENTS	BCO

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

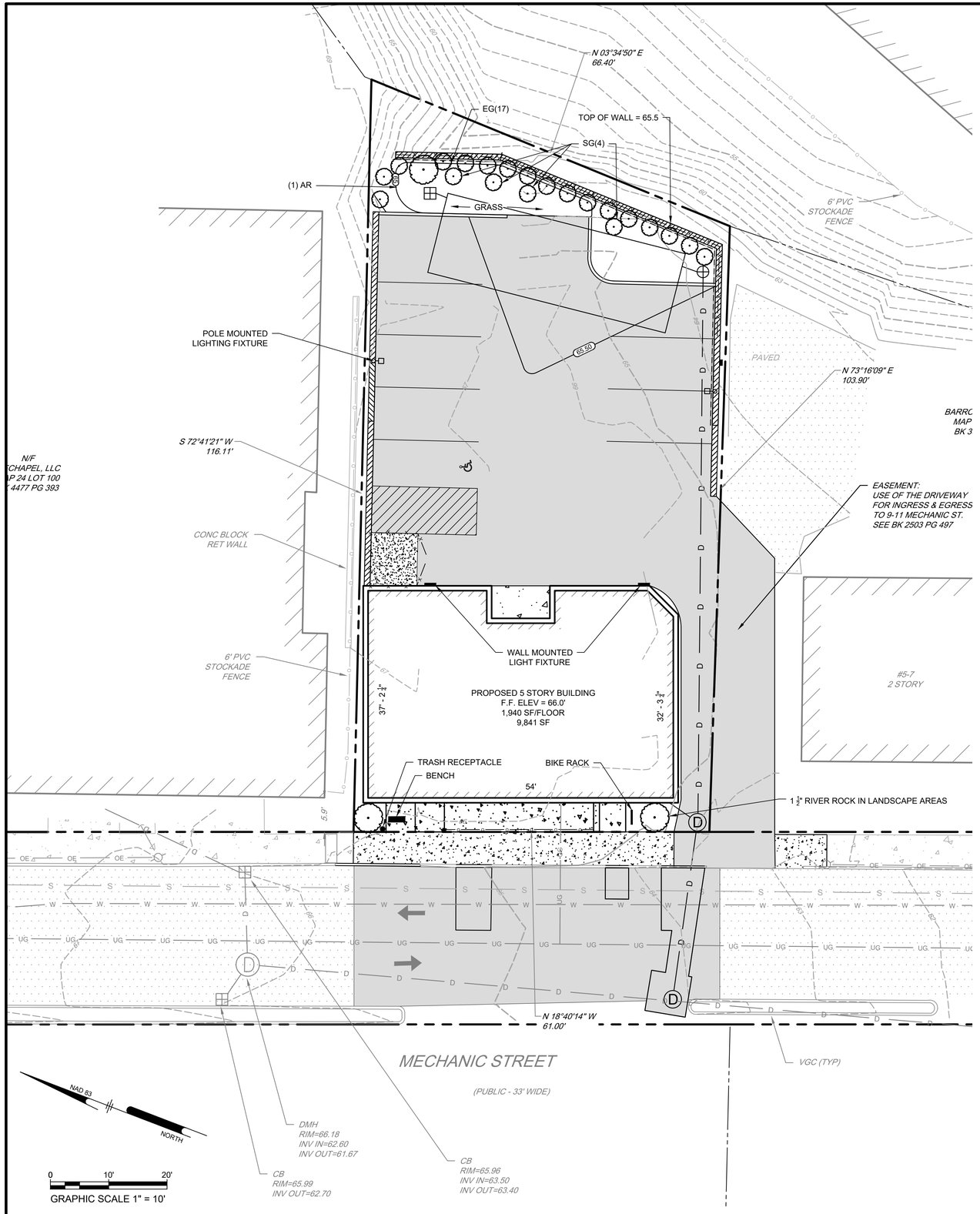
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

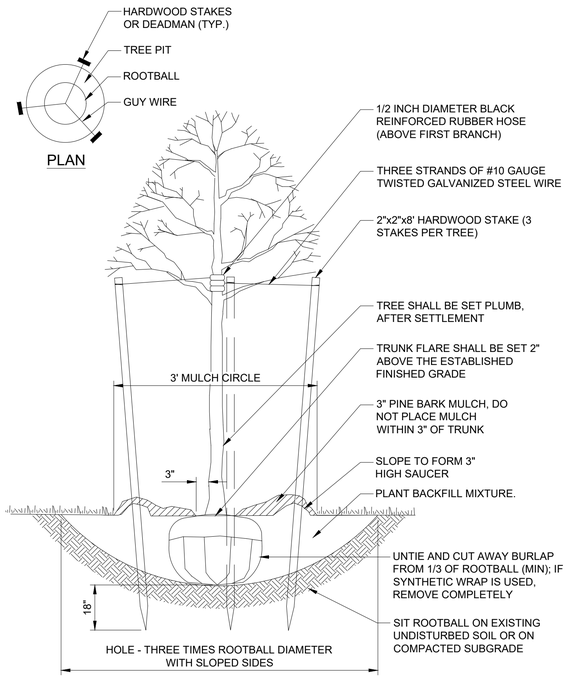
UTILITY PLAN
CS1601

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Salem NH, 03079
Tel: 978-208-1762
rangereng.com

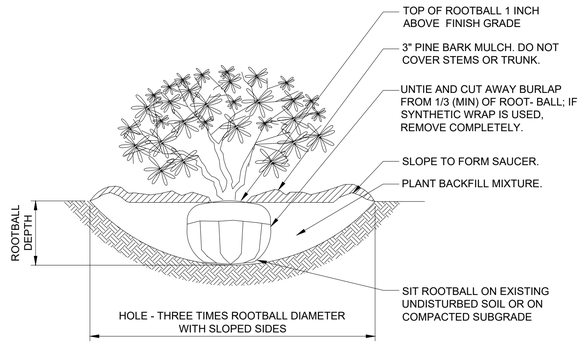
BENJAMIN T. LEGARE JR. 08000 No. 16330 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 6 OF 15





1 TREE PLANTING DETAIL
NOT TO SCALE



NOTES:

1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

2 SHRUB PLANTING DETAIL
NOT TO SCALE

LEGEND

TREE

RIVER ROCK

LIGHT POLE

WALL MOUNTED LIGHT FIXTURE

PLANT SCHEDULE

EVERGREEN TREE:

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE
EG	17	THUJA OCCIDENTALIS	EMERALD GREEN ARBORVITAE	5-6' HT

DECIDUOUS TREE:

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE
AR	1	ACER RUBRUM 'AUTUMN BLAZE	AUTUMN BLAZE MAPLE	3" CAL.

GRASS

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE
SG	4	PANICUM VERGATUM	SWITCH GRASS	1 GALLON.

PLANTING AND MAINTENANCE NOTES:

1. CONTRACTOR TO PROVIDE HEALTHY VIGOROUS PLANTING MATERIAL PURCHASED FROM REPUTABLE NURSERY STOCK PROVIDERS.
2. LOCATION OF PLANTS SHALL BE APPROVED BY OWNERS REPRESENTATIVE PRIOR TO PLANT INSTALLATION. WASTE MATERIALS GENERATED SHALL BE REMOVED AND DISPOSED OF PROPERLY.
3. CONTRACTOR SHALL GUARANTEE PLANTINGS FOR A PERIOD OF ONE YEAR AND REPLACE ANY DEAD OR UNHEALTHY PLANTS AS DETERMINED BY OWNERS REPRESENTATIVE. REPLACEMENTS SHALL BE OF THE SAME VARIETY AND SIZE OF THE ORIGINAL PLANTS AND SHALL BE INSTALLED BY CONTRACTOR.
4. CONTRACTOR SHALL PROVIDE THE REQUIRED TEMPORARY IRRIGATION TO KEEP PLANTS HEALTHY AND VIGOROUS.

LONG TERM MAINTENANCE

ONGOING LONG TERM MAINTENANCE OF LANDSCAPE MATERIAL IS REQUIRED AND CONSISTS OF THE FOLLOWING.

1. INSPECT AND REMOVE TRASH FROM LANDSCAPE AREAS AND BIORETENTION AREA MONTHLY.
2. MOW LAWN AREA EVERY WEEK TO TWO WEEKS DEPENDING UPON WEATHER CONDITIONS.
3. INSPECT TREES AND SHRUBS AND REPLACE ANY THAT ARE DEAD OR DYING ANNUALLY.
4. REMOVE ANY DEAD OR DAMAGED VEGETATION ANNUALLY.
5. TRIM AND SHAPE SHRUBS AS REQUIRED ANNUALLY.
6. FERTILIZE TREES AND SHRUBS ANNUALLY.
7. CLEAN DEBRIS AND SEDIMENT AND REPLENISH MULCH IN BIORETENTION AREA ANNUALLY

DATE	NO.	REVISIONS	BY
03/10/26	5	PLANNING BOARD COMMENTS	BCO
01/29/26	4	NEW TRC COMMENTS	BCO
11/26/25	3	REMAINING TRC COMMENTS	BCO
10/21/25	2	TRC COMMENTS	BCO
09/02/25	1	TRC COMMENTS	BCO

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

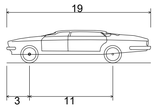
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

LANDSCAPE AND LIGHTING PLAN
CS1701

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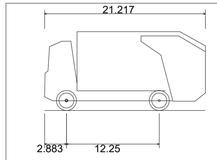
STATE OF NEW HAMPSHIRE - BENJAMIN C. OSGOOD, JR No. 12030 LICENSED PROFESSIONAL ENGINEER

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 7 OF 15



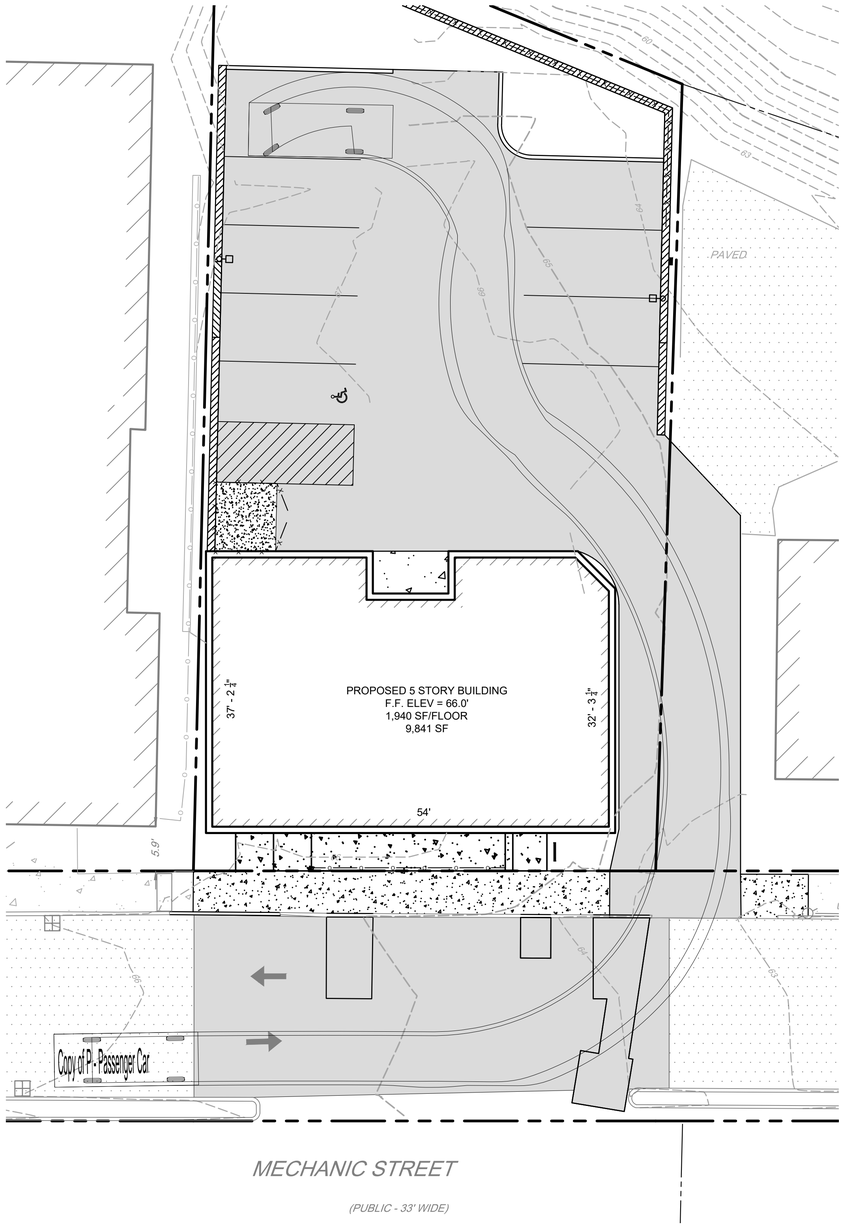
P - Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.115ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	35.00°



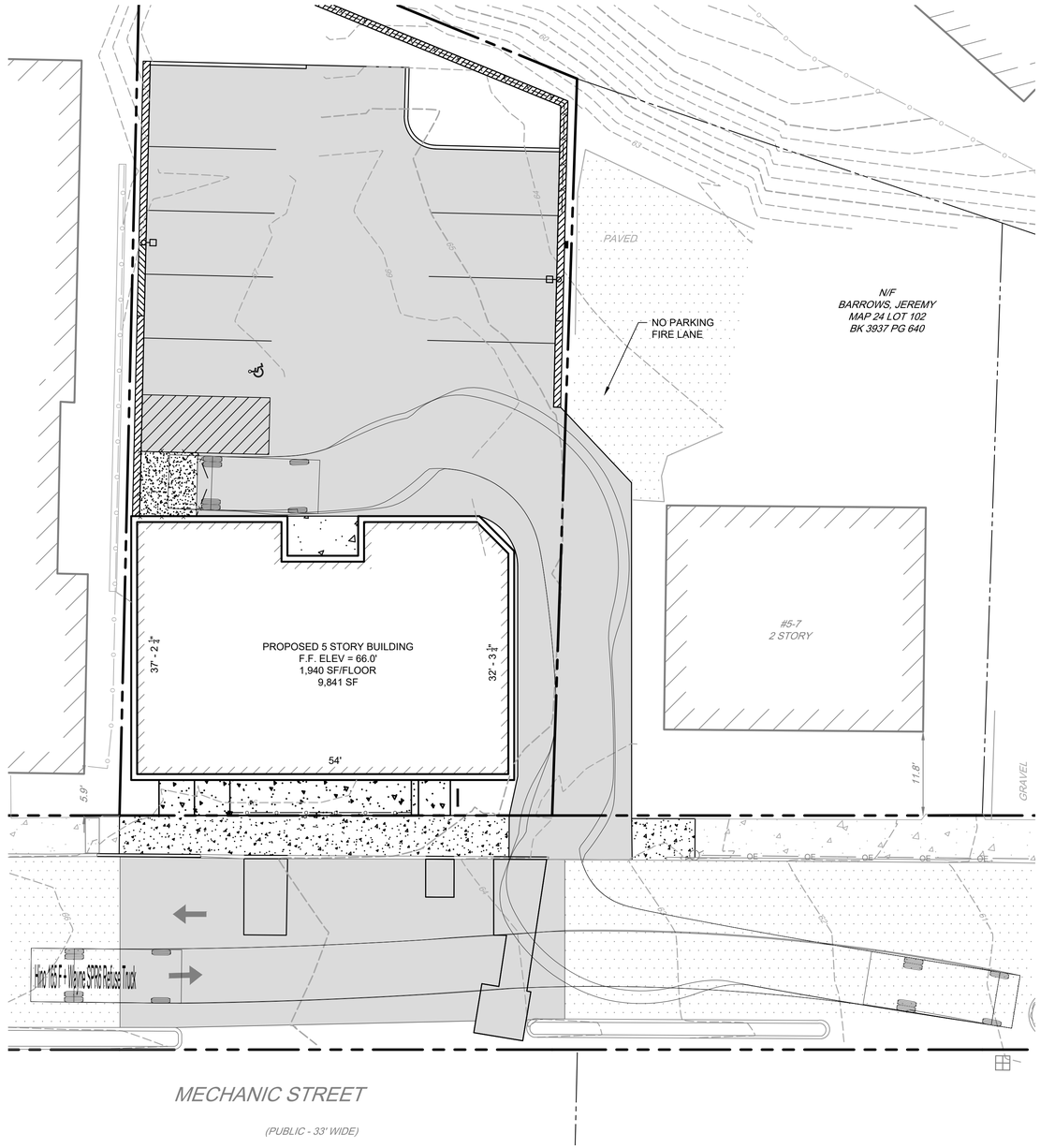
Hino 165 F + Wayne SPR6 Refuse Truck

Overall Length	21.217ft
Overall Width	7.533ft
Overall Body Height	10.399ft
Min Body Ground Clearance	1.229ft
Track Width	7.533ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	20.300ft



MECHANIC STREET

(PUBLIC - 33' WIDE)



MECHANIC STREET

(PUBLIC - 33' WIDE)



GRAPHIC SCALE 1" = 10'



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10/21/25	2	TRC COMMENTS	BCO
09/02/25	1	TRC COMMENTS	BCO

SITE PLAN

9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

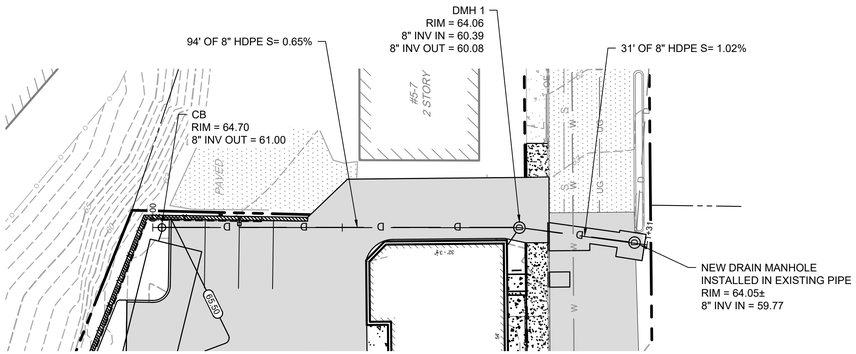
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

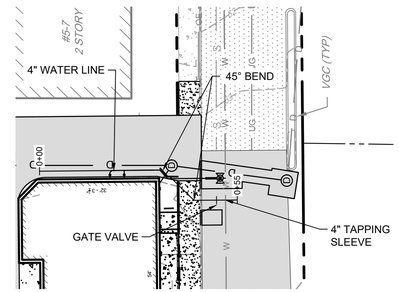
TURNING PLAN
CS2701

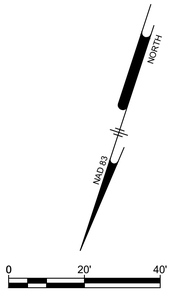
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DATE:	SCALE:	SHEET		OF	
2025-10-21	1" = 10'	SHEET	8	OF	15



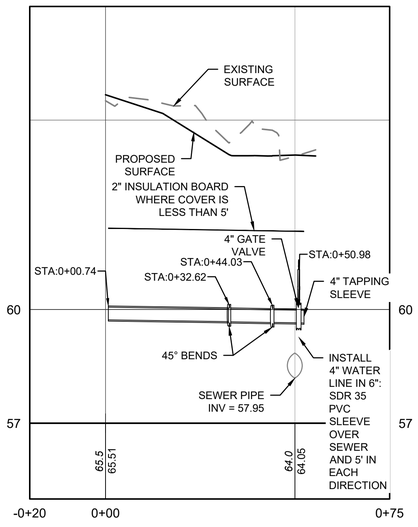




0 20' 40'

GRAPHIC SCALE 1" = 20'

DRAIN LNE 1
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



WATER LINE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

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SITE PLAN

9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

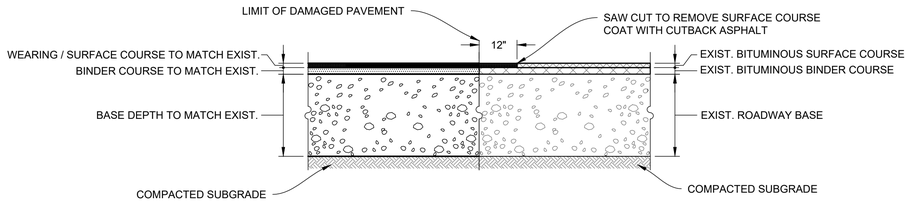
APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

UTILITY PLAN AND PROFILES
CS3501

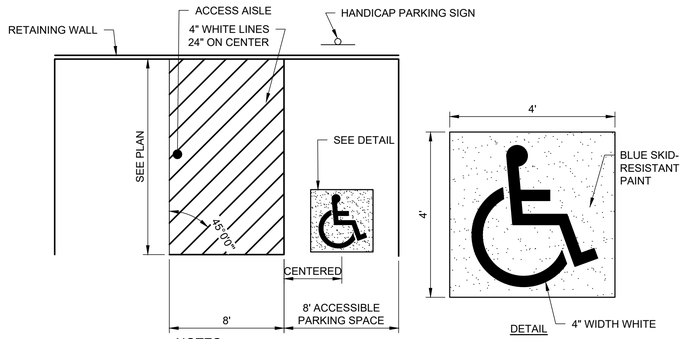
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DATE: 2025-10-21 | SCALE: 1" = 20' | SHEET 9 OF 15

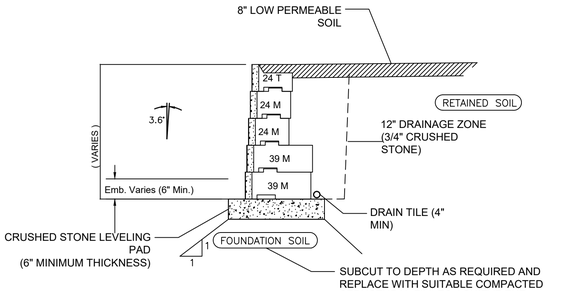


1 BIT. CONC. PAVEMENT REPAIR DETAIL
NOT TO SCALE

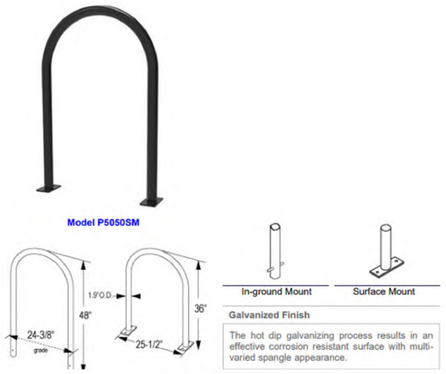


NOTES:
1. ALL DIMENSIONS TO EDGES OF 4" PAVEMENT STRIPING.
2. ALL STRIPING SHALL BE 4" WIDE SOLID WHITE PAVEMENT MARKINGS UNLESS OTHERWISE NOTED. FAST DRYING WHITE WATER-BORNE TRAFFIC PAINT.
3. 8' STALL WIDTH REFERS TO 8' CLEAR BETWEEN INSIDE EDGES OF PAVEMENT MARKINGS.

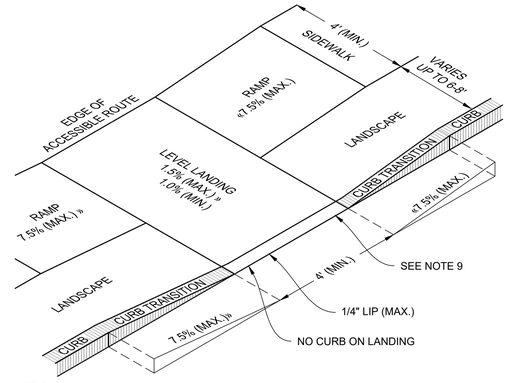
2 ACCESSIBLE PARKING SPACE
NOT TO SCALE



3 RETAINING WALL
NOT TO SCALE

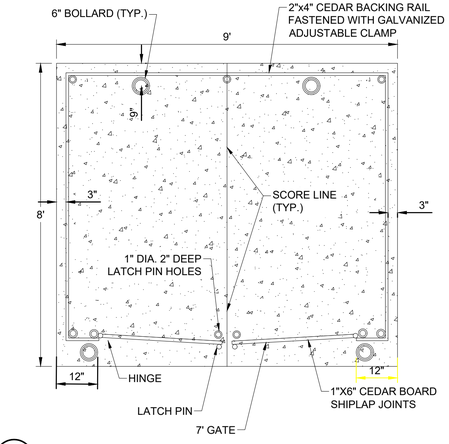


4 BIKE RACK
NOT TO SCALE

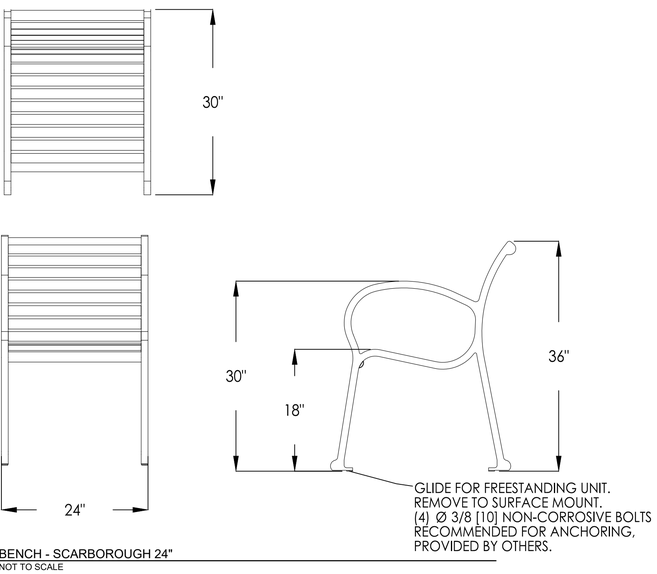


NOTES:
1. THE MAXIMUM ALLOWABLE SIDEWALK AND RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. CURB TREATMENT VARIES, SEE PLAN FOR CURB TYPE.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.

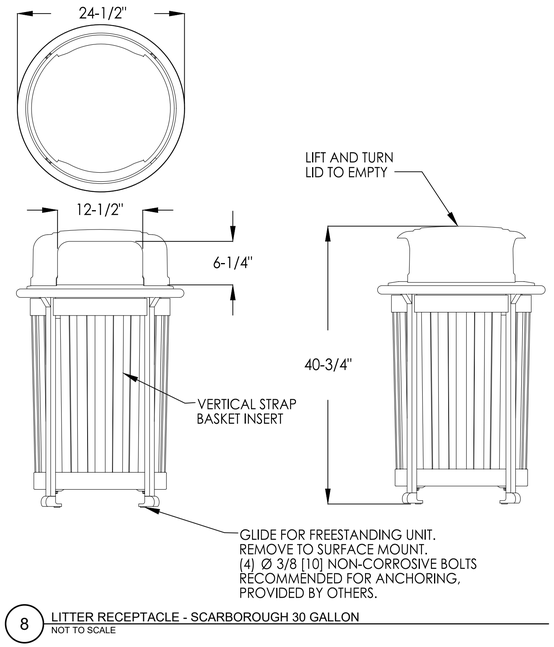
5 ACCESSIBLE CURB RAMP (ACR) - TYPE 'I'
NOT TO SCALE



6 DUMPSTER PAD W/ENCLOSURE
NOT TO SCALE



7 BENCH - SCARBOROUGH 24"
NOT TO SCALE



8 LITTER RECEPTACLE - SCARBOROUGH 30 GALLON
NOT TO SCALE

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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

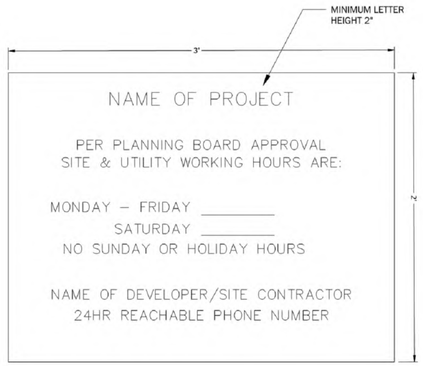
ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

SITE DETAILS
CS6001

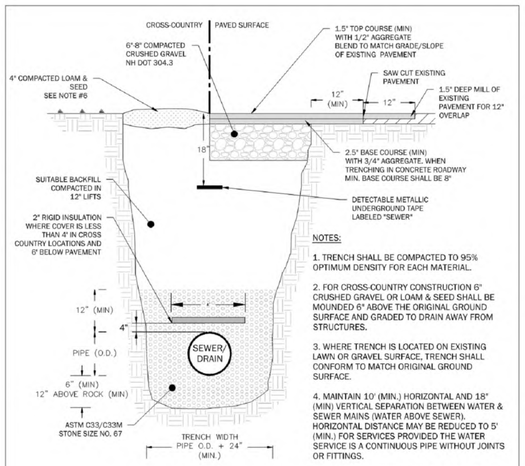
Ranger Engineering Group, Inc.
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DATE: 2025-10-21
SCALE:
SHEET 10 OF 15



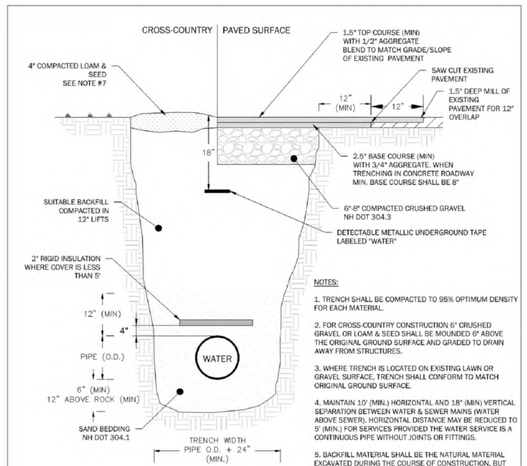
NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-2	CONSTRUCTION SIGN	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



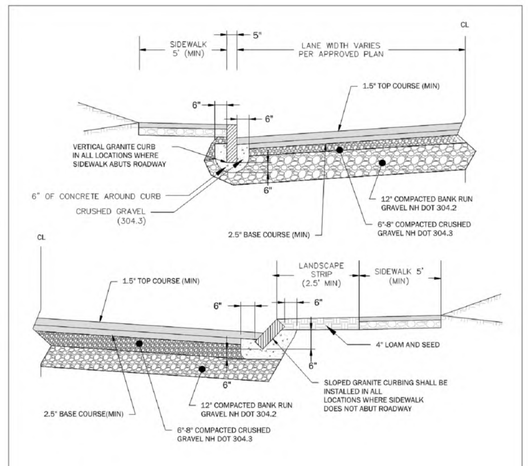
NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE AND GRADED TO DRAIN AWAY FROM STRUCTURES.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-3	SEWER/DRAIN TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



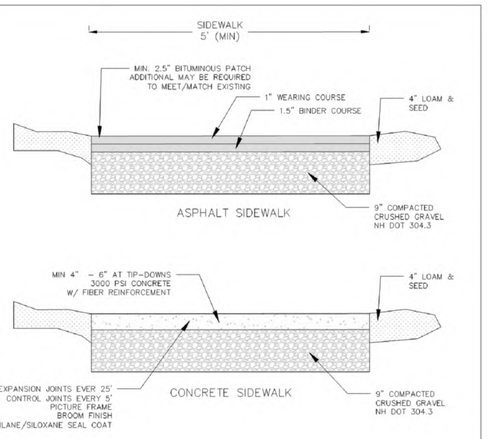
NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE AND GRADED TO DRAIN AWAY FROM STRUCTURES.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-4	WATER TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



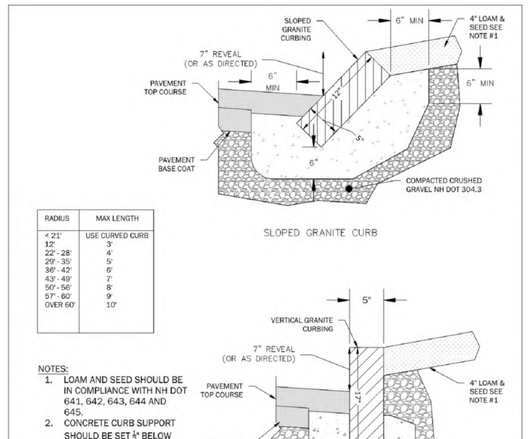
NOTES:
1. THIS DETAIL IS FOR GENERAL REVIEW PURPOSES ONLY. FINAL DESIGN SHALL BE BASED ON SPECIFIC SITE CONDITIONS AND APPROVED PLANS.
2. SIDEWALK LOCATION AND MATERIAL SHALL BE AS APPROVED BY THE CITY OF DOVER.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-5	PUBLIC ROAD CROSS SECTION	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



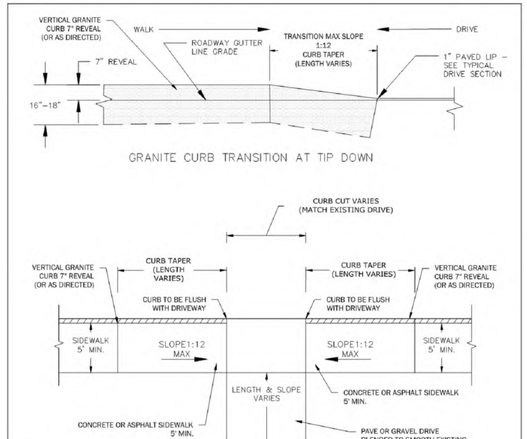
NOTES:
1. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS SPECIFICATIONS.
2. SIDEWALK AND DRIVEWAY WIDTHS SHALL BE EQUAL TO EXISTING WIDTHS OR AS APPROVED AND SHALL SLOPE TO MATCH EXISTING ELEVATIONS.
3. BASE FOR THE SIDEWALKS AND DRIVEWAYS SHALL BE 9-INCHES OF CRUSHED GRAVEL.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-6	ASPHALT & CONCRETE SIDEWALK	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ¾" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-8	GRANITE CURB	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. THE CURB TAPER SLOPE SHALL MATCH THE SLOPE OF THE ADA COMPLIANT CURB RAMP.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-9	SIDEWALK TIP DOWN AT DRIVEWAY	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



DATE	NO.	REVISIONS	BY
03/10/26	5	PLANNING BOARD COMMENTS	BCO
01/29/26	4	NEW TRC COMMENTS	BCO
11/26/25	3	REMAINING TRC COMMENTS	BCO
10/21/25	2	TRC COMMENTS	BCO
09/02/25	1	TRC COMMENTS	BCO

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

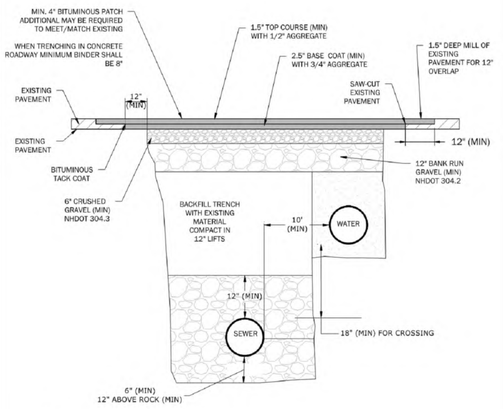
ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

CONSTRUCTION STANDARD DETAILS
CS6002

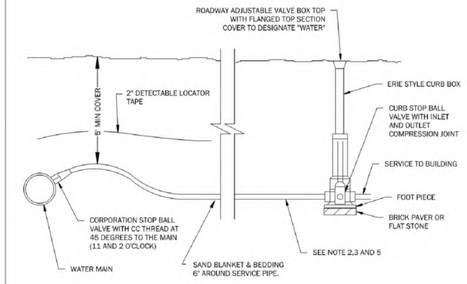
Ranger Engineering Group, Inc.
130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: | SHEET 11 OF 15



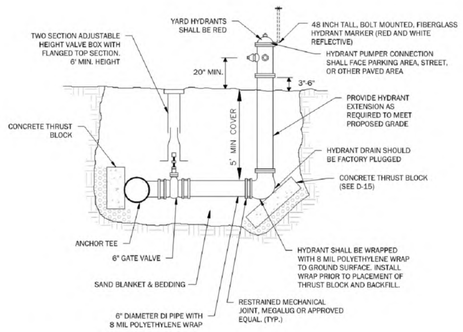
NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-10	TYPICAL TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



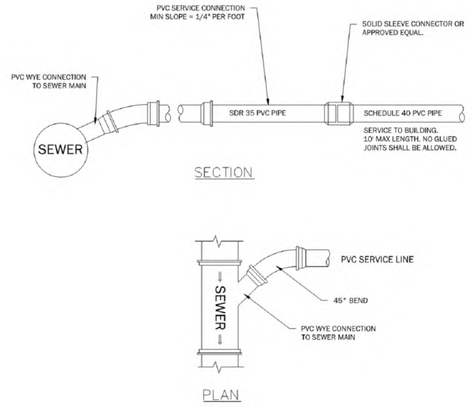
NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH A ZINC COATED 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.
4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE
5. ALL SERVICES SHALL BE 1". PROVIDE 1" TO 3/4" REDUCER COUPLING WHERE EXISTING SERVICES ARE 3/4", SUBSIDIARY.
6. APPROVED WATER SERVICE MATERIALS INCLUDE:
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS
7. ALL SADDLES USED AS SPECIFIED SHALL HAVE DOUBLE STAINLESS STEEL STRAPS.
8. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-13	WATER SERVICE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



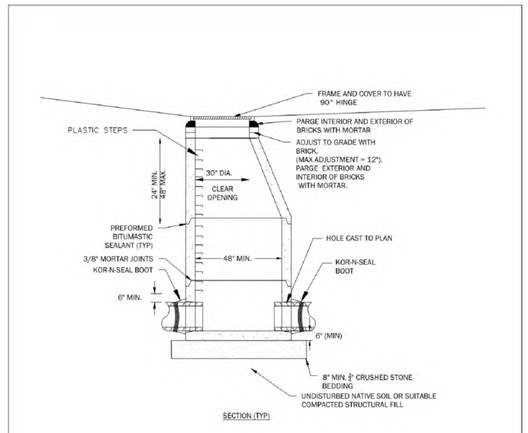
NOTES:
1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.
4. HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E-Z-GUIDE PRODUCTS OR APPROVED EQUAL.
5. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD WATER TRENCH DETAIL D-4.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-14	FIRE HYDRANT	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

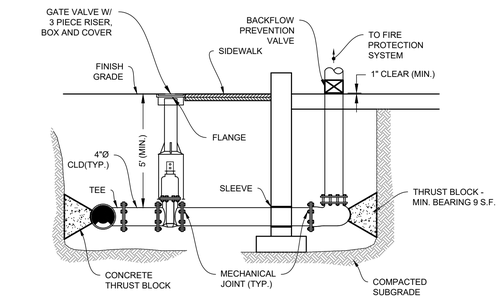
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-17	SEWER SERVICE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



SECTION (TYP)

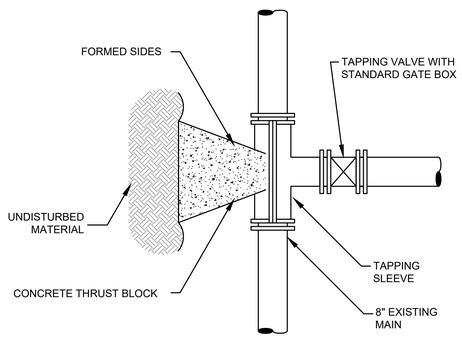
NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-20	DRAIN MANHOLE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. VALVE SHALL BE CAPABLE OF SUPERVISION THROUGH BUILDING ALARM SYSTEM.

1 FIRE LINE DETAIL
NOT TO SCALE



2 TAPPING SLEEVE AND VALVE CONNECTION
NOTES:
NOT TO SCALE



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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

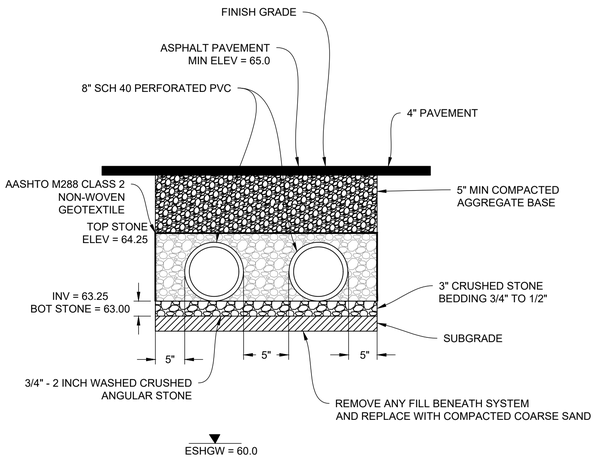
ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

CONSTRUCTION STANDARD DETAILS
CS6003

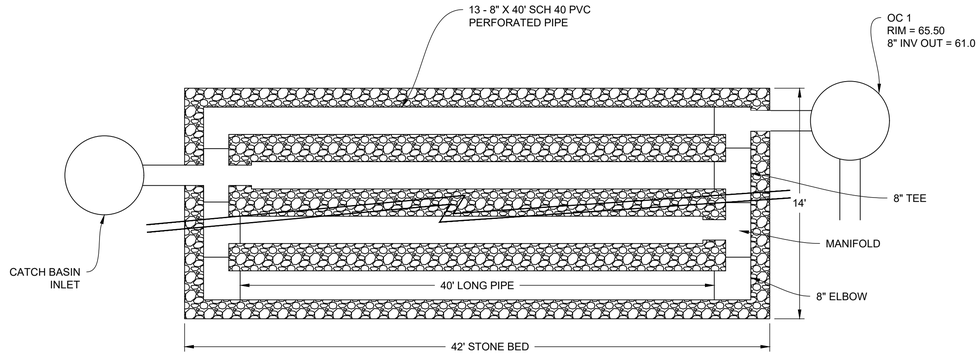
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Tel: 978-208-1762
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DATE: 2025-10-21
SCALE:
SHEET 12 OF 15



NOTE:
AGGREGATE BASE WILL BE 5" THICK AT PARKING LOT BACKOUT SPACE

1 BURIED PIPE SYSTEM
NOT TO SCALE



NOTE: REMOVE ANY FILL BENEATH THE SYSTEM AND REPLACE WITH COMPACTED COARSE SAND.

2 BURIED PIPE SYSTEM
NOT TO SCALE

WINTER SNOW AND ICE MAINTENANCE

1. WINTER SNOW AND ICE MAINTENANCE SHALL BE PERFORMED BY A CERTIFIED SNOW PRO SALT APPLICATOR.
2. A DE-ICING LOG SHALL BE MAINTAINED FOR ALL DE-ICING ACTIVITIES ON THE PROPERTY.
3. DE-ICING SHOULD FOLLOW THE BEST MANAGEMENT PRACTICES FOR STORAGE AND APPLICATION OF DE-ICING CHEMICALS AS OUTLINED IN THE ATTACHED PUBLICATIONS.
4. WHEN SNOW STORAGE AREAS ARE FULL SNOW SHALL BE REMOVED AND TRANSPORTED TO AN APPROVED SNOW DUMP LOCATION.

CONSTRUCTION PERIOD EROSION AND SEDIMENTATION CONTROL PLAN:

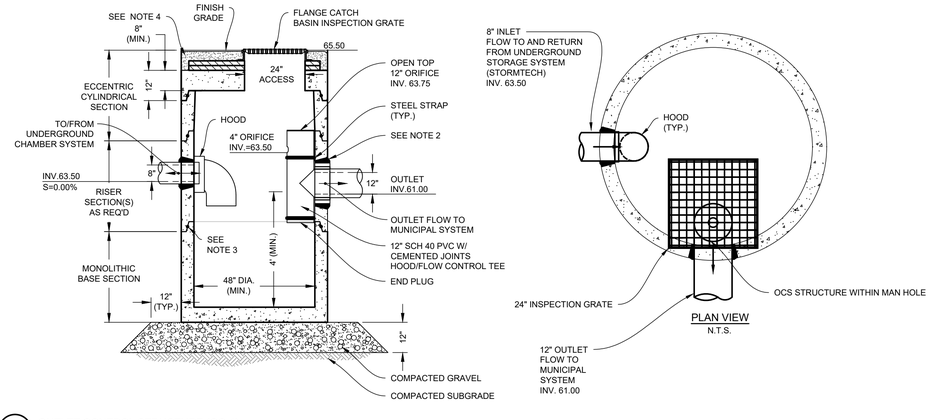
THE BMP'S ASSOCIATED WITH THE CONSTRUCTION PHASE THIS PROJECT WILL BE OWNED BY THE APPLICANT'S CONTRACTOR, WHICH WILL BE RESPONSIBLE FOR INSPECTION, OPERATION, AND MAINTENANCE.

1. THE CONTRACTOR IS TO INSTALL AND MAINTAIN DRAINAGE FACILITIES AS SHOWN ON SITE PLAN PREPARED BY RANGER ENGINEERING GROUP. (RANGER), DATED APRIL 3, 2025.
2. ANY DEWATERING REQUIRES COVERAGE UNDER THE NPDES CONSTRUCTION SITE DEWATERING GENERAL PERMIT.
3. THE CONTRACTOR MUST INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND IN THE DETAILS PRIOR TO STARTING ANY OTHER WORK ON THE SITE. EROSION CONTROL MUST BE INSTALLED AT EVERY INLET STRUCTURE (EXISTING AND PROPOSED) AND MAINTAINED FOR THE DURATION OF THE PROJECT.
4. EROSION CONTROLS AS SHOWN ON PLANS SHALL BE INSPECTED, REPAIRED AND/OR MAINTAINED BY THE CONTRACTOR DAILY AND WITHIN 12 HOURS OF EACH STORM EVENT.
5. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH A DEPTH OF 1/4 TO 1/2 THE HEIGHT OF THE SILT FENCE OR SEDIMENT SOCK.
6. SEDIMENT SHALL BE CONTAINED WITHIN THE CONSTRUCTION SITE, AWAY FROM DRAINAGE STRUCTURES. SEDIMENT REACHING THE PUBLIC WAY SHALL BE REMOVED BY STREET SWEEPING AND NOT BY FLUSHING.
7. STABILIZE SLOPES STEEPER THAN 3:1 (HORIZONTAL TO VERTICAL) WITH SEED, SECURED GEOTEXTILE FABRIC, OR ROCK RIP-RAP AS REQUIRED TO PREVENT EROSION DURING CONSTRUCTION.
8. CLEAN OUT CATCH BASINS, DRAIN MANHOLES AND STORM DRAIN PIPES AFTER COMPLETION OF CONSTRUCTION.
9. LOAM AND SEED ALL DISTURBED AREAS. PERMANENT SEEDING SHALL OCCUR IN THE SPRING FROM LATE MARCH THROUGH MAY AND IN LATE SUMMER OR EARLY FALL BETWEEN AUGUST AND OCTOBER.
10. DUST SHALL BE CONTROLLED AT THE SITE WITH MECHANICAL WATER SPRAYING AS NECESSARY AND DURING EXTENDED DRY PERIODS.
11. UPON ESTABLISHMENT OF PERMANENT VEGETATION OVER DISTURBED AREAS, REMOVE AND DISPOSE OF SILT FENCE OR WATTLES AND STAKES.
12. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND SUPPLEMENT THE SPECIFIED SEDIMENTATION CONTROLS AS NECESSARY TO PREVENT SEDIMENTATION OF OFF-SITE AREAS AND/OR ANY REGULATED RESOURCE AREAS. FAILURE BY THE CONTRACTOR TO CONTROL EROSION, POLLUTION AND/OR SILTATION SHALL BE CAUSE FOR THE OWNER TO EMPLOY OUTSIDE ASSISTANCE OR TO USE HIS OWN MEANS TO PROVIDE THE NECESSARY CORRECTIVE MEASURE. THE COST OF SUCH ASSISTANCE PLUS PROJECT ENGINEERING COSTS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
13. IN ADDITION TO THOSE LOCATIONS SHOWN ON THIS PLAN AND ON THE GRADING AND DRAINAGE PLANS, EROSION CONTROLS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS: TOE OF SLOPE OF EMBANKMENT CONSTRUCTION, TOE OF TEMPORARY EARTHWORK STOCKPILES. STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
14. EROSION AND SEDIMENTATION CONTROL SHALL BE IN COMPLIANCE WITH NEW HAMPSHIRE STORMWATER MANUAL.

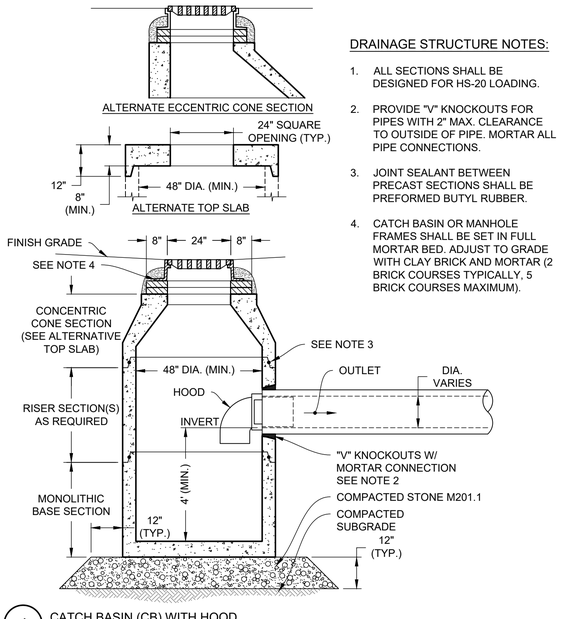
POST CONSTRUCTION STORMWATER INSPECTIONS

THE OWNER/APPLICANT IS TO BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE STRUCTURES IN THE PROJECT, INCLUDING DRAIN PIPES. THE OWNER SHALL PLACE A DEED RESTRICTION ON THE PROPERTY OUTLINING THE REQUIREMENTS FOR STORMWATER SYSTEM MAINTENANCE AT THE DEVELOPMENT.

1. STORMWATER PIPES SHALL BE INSPECTED FOR SEDIMENT BUILDUP ON A QUARTERLY BASIS AND CLEANED AS REQUIRED.
2. THE BIORETENTION AREA SHALL BE INSPECTED TO VERIFY PROPER FILTRATION AND CONDITION OF FILTER SURFACE. EXISTING TRASH AND DEBRIS SHALL BE REMOVED AND THE SURFACE MEDIA REPLACED AS REQUIRED TO MAINTAIN INFILTRATION.
3. ALL GRADED SLOPES AND LAWN AREAS SHALL BE INSPECTED EVERY SPRING FOR EROSION. UPON DISCOVERY OF ANY FAILURE (IE. EROSION, SLOUGHING, RUTTING), LOAM AND SEED SHALL BE PUT IN PLACE AND NURTURED.
4. PAVEMENT SURFACES SHALL BE SWEPT CLEAN AT LEAST ONCE PER YEAR, PREFERABLY IN THE SPRING JUST AFTER SNOW MELT. SEDIMENT, SAND, AND DEBRIS SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH NEW HAMPSHIRE REGULATIONS.



3 OUTLET CONTROL STRUCTURE (OC-1)
NOT TO SCALE



DRAINAGE STRUCTURE NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN OR MANHOLE FRAMES SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

4 CATCH BASIN (CB) WITH HOOD
NOT TO SCALE



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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

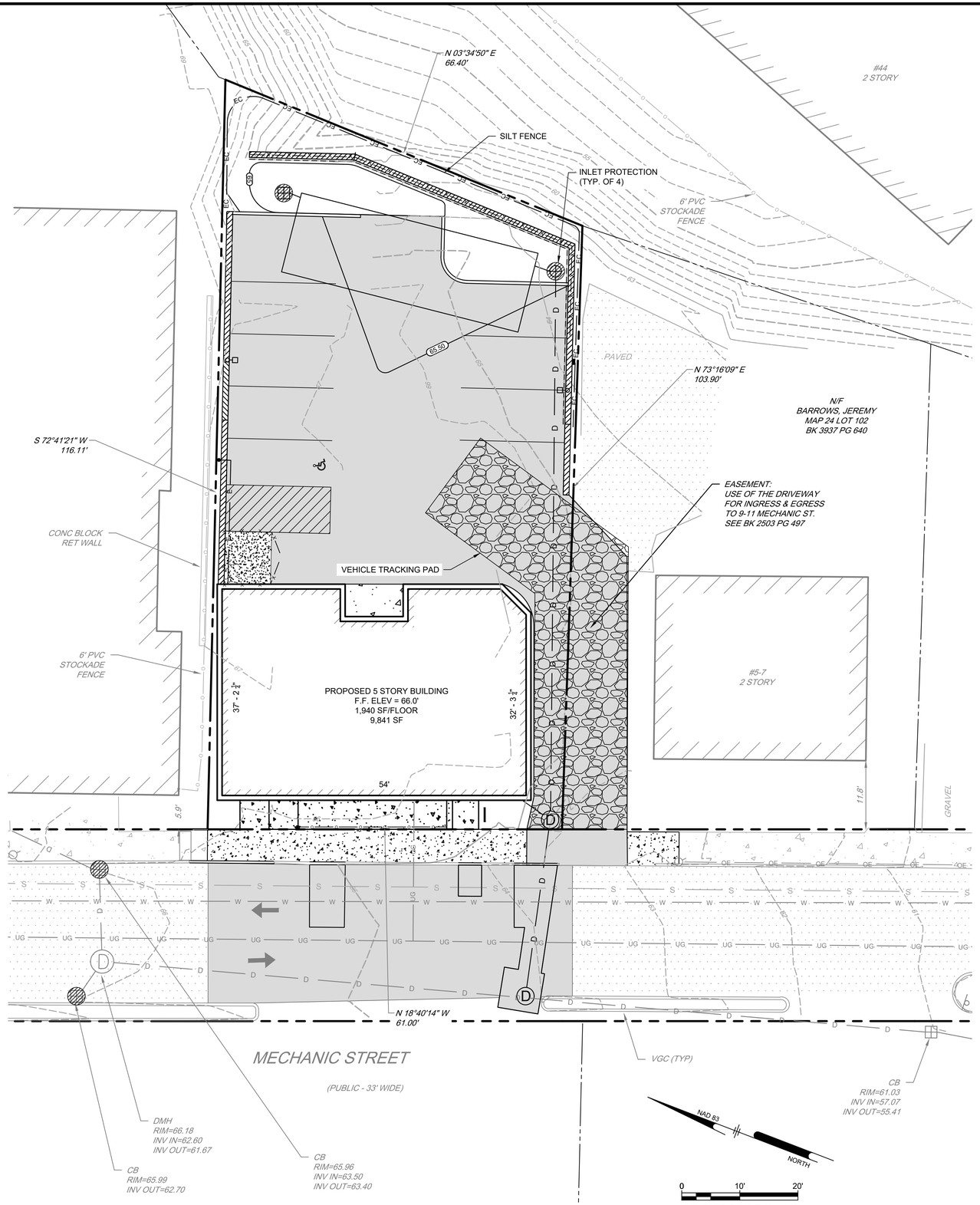
ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

DRAINAGE DETAILS
CS6011

Ranger Engineering Group, Inc.
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Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21
SCALE:
SHEET 13 OF 15



EROSION CONTROL NOTES

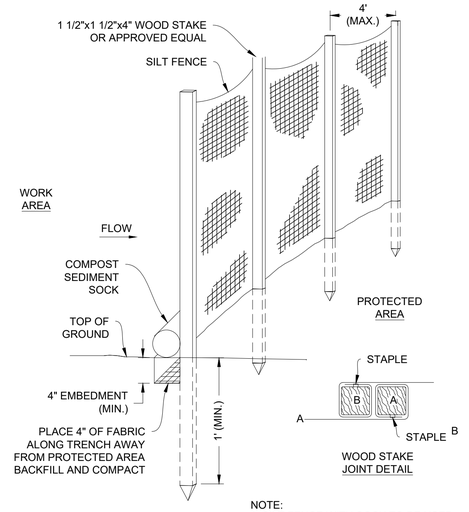
1. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY THE COMMUNITY SERVICES DEPARTMENT.
2. STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.
3. THE AREA OF LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM AND BE LIMITED TO AN AREA ONLY LARGE ENOUGH TO ACCOMMODATE CONSTRUCTION ACTIVITIES FOR A PARTICULAR CONSTRUCTION PHASE.
4. OFF-SITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE, OR MEASURES TO CONVEY STORMWATER THROUGH THE PROJECT AREA WITHOUT CAUSING EROSION OF SEDIMENT MUST BE INCLUDED. INTEGRITY OF DOWNSTREAM DRAINAGE SYSTEMS SHALL BE MAINTAINED.
5. DISTURBED SOIL AREAS SHALL BE EITHER TEMPORARILY OR PERMANENTLY STABILIZED. IN AREAS WHERE FINAL GRADING HAS NOT OCCURRED, TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN NO MORE THAN 14 CALENDAR DAYS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.
6. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED. CONTRACTOR SHOULD INSPECT THE EROSION AND SEDIMENT CONTROL DEVICES ON A WEEKLY BASIS AND WITHIN 2 DAYS OF A RAIN EVENT OF ½" OR MORE AND REPAIR ANY SECTIONS THAT ARE DAMAGED. A REPORT OF THE INSPECTION AND A LOG OF REPAIRS SHALL BE MAINTAINED ON SITE.
7. SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL DEVICES WHEN IT REACHES A DEPTH OF 1/2 THE HEIGHT OF THE CONTROL OR 6" IN DEPTH.
8. ADDITIONAL TEMPORARY STABILIZATION FOR THE WINTER SEASON CONSISTENT WITH NHDES GUIDELINES SHALL BE IN PLACE FOR DISTURBED AREAS THAT ARE NOT PERMANENTLY STABILIZED BY OCTOBER 1, OR AT THE DISCRETION OF THE COMMUNITY SERVICES DEPARTMENT.
9. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 CALENDAR DAYS UNLESS CONDITIONS DICTATE OTHERWISE.

LEGEND

SILT FENCE — EC — EC —

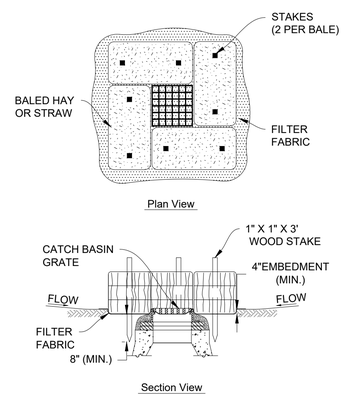
INLET PROTECTION

VEHICLE TRACKING PAD



NOTE:
1. SILT FENCE WITH SOCK TO BE USED AROUND STOCKPILES

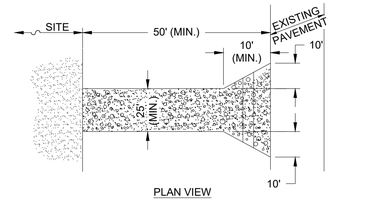
1 SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1. ENCLOSE STRUCTURE WITH HAYBALES IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION. MAINTAIN UNTIL PAVING BINDER COURSE IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. IF GRATE IS AGAINST EXISTING CURB THEN HAY BALES ARE TO BE PLACED AROUND THREE SIDES OF GRATE ONLY.
3. GRATE TO BE PLACED OVER FILTER FABRIC.
4. BALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS. REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

2 DRAIN INLET PROTECTION
NOT TO SCALE



CROSS SECTION

NOTES:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

3 CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



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SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

EROSION AND SEDIMENT CONTROL
CS7001

Ranger Engineering Group, Inc.
130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 14 OF 15

PRE DEVELOPMENT IMPERVIOUS
AREA = 4,196 S.F.
(54.9% COVERAGE)
INCLUDES OFF SITE DRIVEWAY
PAVEMENT AREA OF 472 SF

POST DEVELOPMENT IMPERVIOUS
AREA = 6,568 S.F.
(85.90% COVERAGE)
INCLUDES OFF SITE DRIVEWAY
PAVED AREA OF472 SF

POND AREAS	
ELEVATION	SQ.FT
65	234

DP2
DP1
E1
E2
P1
P2
P3
#11
2 STORY
DECK
PAVED
FLOW PATH
N/F
9-11 MECHANIC STREET
REALTY TRUST
MAP 24 LOT 101
BK 5095 PG 505
0.16 ACRES ±
7169 S.F.
2 STORY
PORCH
32' - 3 ¼"
54'
5.9'
PROPOSED 5 STORY BUILDING
F.F. ELEV = 66.0'
1,940 SF/FLOOR
9,841 SF
37' - 2 ½"
MECHANIC STREET
(PUBLIC - 33' WIDE)
NAD 83
NORTH
0 10' 20'
GRAPHIC SCALE 1" = 10'

PRE DEVELOPMENT

POST DEVELOPMENT

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STATE OF NEW HAMPSHIRE
BENJAMIN C. OSGOOD, JR
No. 12030
LICENSED
PROFESSIONAL ENGINEER

SITE PLAN
9-11 MECHANIC STREET, DOVER NH,

ASSESSOR'S MAP 24 LOT 101
DOVER PLANNING FILE #

APPLICANT/ OWNER: MECHANIC STREET REALTY TRUST, BENJAMIN T. LEGARE, TRUSTEE
23A MIDDLE ST, NEWBURYPORT MA 01950

PRE & POST DEVELOPMENT DRAINAGE PLAN
CS9201

Ranger Engineering Group, Inc.
130 Main Street. Suite 202
Salem NH, 03079
Tel: 978-208-1762
rangereng.com

DATE: 2025-10-21 | SCALE: 1" = 10' | SHEET 15 OF 15

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0011

Application Type:	Conditional Use Permit
Applicant(s):	Public Service of New Hampshire (Eversource Energy)
Owner(s):	Public Service of New Hampshire (Eversource Energy)
Location:	Cocheco Street (Map 24, Lot 132)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) for an expansion to the Eversource Substation that will result in permanent and temporary impacts to the wetlands and wetland buffers.

AGENDA ITEM #: 4-A

FILE: COND-2026-0011

OWNER/APPLICANT: Public Service of New Hampshire (Eversource Energy)

LOCATION: Cocheco Street (Map 24, Lot 132)

LOTS/UNITS PROPOSED: N/A (no change)

ACREAGE: 2.46 ± ac.

ZONING DISTRICT: Urban Density Multi-Residential District (RM-U)

EXISTING/PROPOSED LAND USE: Eversource Substation

SURROUNDING LAND USE: Residential, Cochecho River

WAIVERS REQUESTED: N/A

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: City of Dover CUP for proposed Conservation District impacts, NHDES Wetlands Pemit

CONSERVATION COMMISSION: Reviewed and endorsed on March 9, 2026, the NHDES Expedited Minimum Impact Wetland Permit and City of Dover CUP.

TECHNICAL REVIEW COMMITTEE: N/A

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

REGIONAL IMPACT: No

APPLICATION IS COMPLETE: Yes

ATTACHMENTS: Impact Plan, Application Materials.

Summary of Request and Background:
The applicant is proposing an expansion of the Eversource Substation on Cocheco Street which includes temporary electric infrastructure improvements to facilitate the expansion efforts. This temporary work will result in 8 s.f. of permanent wetland impacts, 1,618 s.f. of temporary wetland impacts, 20 s.f. of permanent wetland buffer impacts and 1,615 s.f. of temporary wetland buffer impacts.

The applicant submitted an NHDES Expedited Minimum Impact Wetlands Permit, which was reviewed and endorsed by the Conservation Commission, along with the CUP application, as presented on March 9, 2026.

Consistency with Land Use Regulations – CUP 170-28.F
The Wetlands Protection District ordinance §170-28.F provides for Conditional Use Permits to allow impacts to the Wetlands Protection District if standards related to demonstration that no practicable alternative is available, impact avoidance was considered, impacts were minimized, mitigation has been sought, and approval of the wetlands impact from NHDES Wetlands Bureau has been granted.

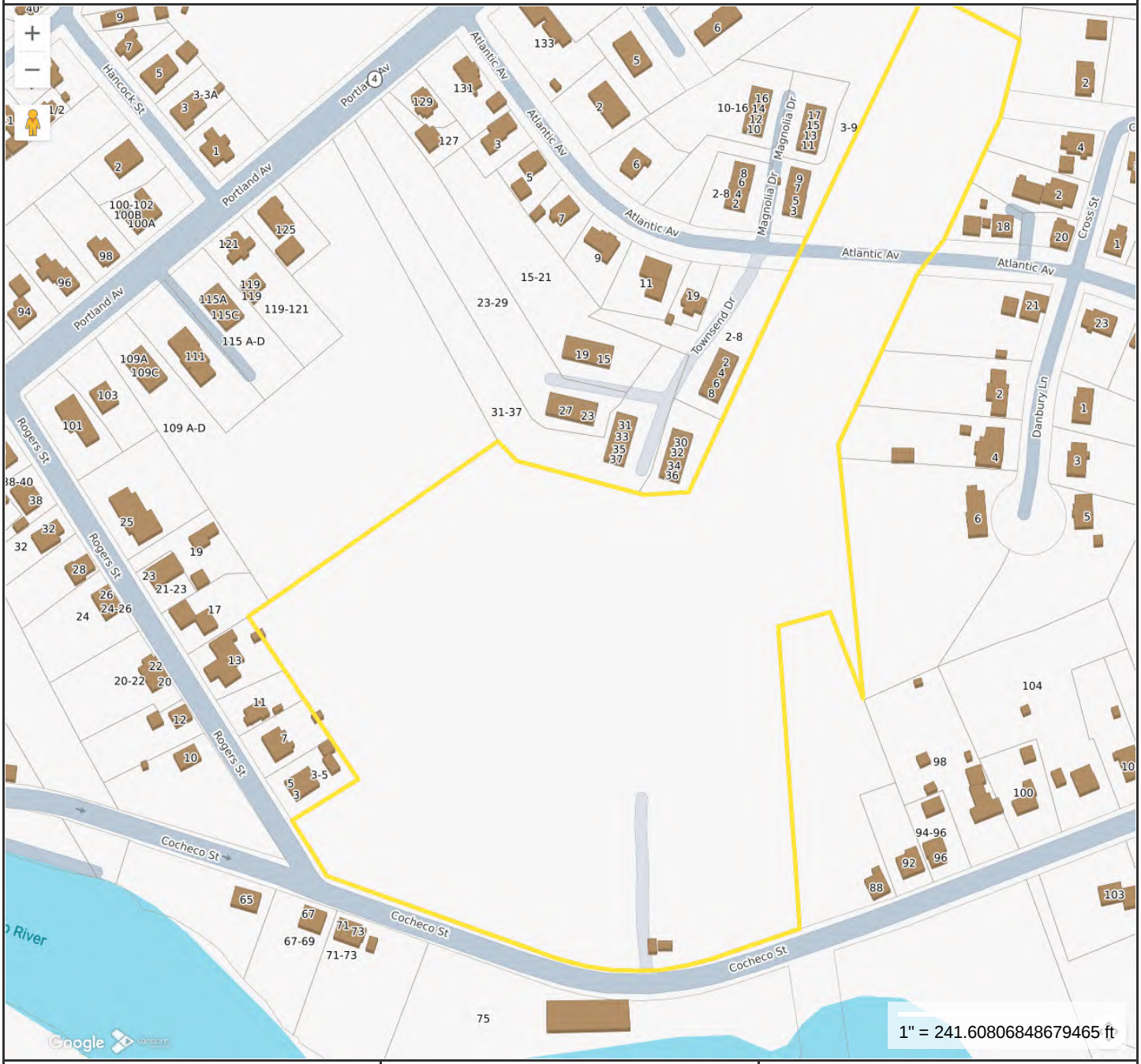
Planning Staff feels that the applicant considered and met all of the criteria as specified in §170.28.F per their narrative. The project will result primarily in temporary impacts, with temporary electrical infrastructure changes proposed based on the existing location of the utility lines. The applicant is proposing NHDES approved best management practices during construction and no mitigation is required for the project. NHDES permitting for the proposed impacts has been applied for, and the Conservation Commission reviewed and endorsed the application as presented on March 9, 2026.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:

1. Submit a final site plan to the Planning Department that includes:
   1.1. Permit File #COND-2026-0011;
   1.2. Owner's signature;
2. Submit a copy of approved NHDES permitting when received.

COND-2026-0011 COCHECO STREET



Property Information

Location	COCHECO ST
Owner	PUBLIC SERV CO OF N H
Land Use	424V
Zoning Code	RM-U
Property Id	24132-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0011
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/27/2026
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Edgecomb, Makayla	**Approval Expire Date:**	

Description: Impacts within the Wetland Protection District to facilitate electrical infrastructure equipment installation.

Parcel: 24132-000000 Main	**Address:** Cocheco St Main Dover, NH	**Zone:** RM-U(Residential - Urban Density) R-12(Residential - Medium Density) G(Gateway District)

Surveyor
Michael Dahlberg
Home: (603) 472-4488
Business: (603) 472-4488
Mobile: (603) 472-4488

Owner
Public Service of NH d/b/a
Eversource Energy
13 Legends Drive
Hookset, NH 03106
Business: (603) 714-3031

Plan Preparer
Nicholas Golon
Home: (603) 472-4488
Business: (603) 472-4488
Mobile: (603) 345-0920

Engineer
Nicholas Golon
Home: (603) 472-4488
Business: (603) 472-4488
Mobile: (603) 345-0920

Applicant
Jeremy Belanger
48 Constitution Drive
Bedford, NH 03110
Business: (603) 472-4488
Mobile: (603) 491-3362

Wetlands Scientist
Jason Aube
Home: (603) 431-2222
Business: (603) 431-2222
Mobile: (603) 431-2222

Permit Custom Fields

Select Permit Type	Wetland Protection District
What is the parcel zoned?	RM-U

General Purpose	Alteration / Addition
New Change in Impervious/Paved Area (sq ft)	0

Project Zone	Non-Residential
Work	As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation.

	In order to facilitate the required electrical connections, two (2) of the proposed temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard. A temporary staging area is to be located just west of the substation with an access route starting at the Cocheco St. entrance and terminating at the northeast corner of the substation. Under the proposed scope, we respectfully request a Conditional Use Permit to permit approximately 1,635 SF of impact within the City of Dover Wetland Protection District 50-foot wetland buffer.	permitstatefed	NHDES Expedited Minimur Impact (EXP) Wetlands Permit - to be submitted upon Dover Conservation Commission review/comment.

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Jeremy_Belanger_2/27/2026.jpg	02/27/2026 13:55	Belanger, Jeremy		Uploaded via CSS
Permit Snapshot Report.pdf	02/27/2026 13:56	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000680	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000680	$200.00	$0.00
INV-2026000740	Planning Creation / Printing of Abutter Labels	$40.00	$0.00
	Planning Verified Mailing to Abutters	$546.00	$0.00
	Planning First Class Mailing	$90.00	$0.00
	Planning Legal Notice	$120.00	$0.00
	Total for Invoice INV-2026000740	$796.00	$0.00
	Grand Total for Permit	**$996.00**	**$0.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	Approved	02/27/2026	03/06/2026		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	Approved	02/27/2026	03/27/2026	03/10/2026

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		02/27/2026 0:00	03/10/2026 13:20
Confirm application complete v.1	Generic Action		02/27/2026 14:33
Conditional Use Review v.1	Receive Submittal	02/27/2026 14:33	03/10/2026 13:20

PERMIT SNAPSHOT REPORT (COND-2026-0011)

Planning Board v.1		03/10/2026 13:20	
Planning Board Agenda v.1	Task	03/10/2026 13:20	03/10/2026 13:20
Invoice for Notices v.1	Task	03/10/2026 13:20	03/10/2026 13:20
Send Notices v.1	Task	03/10/2026 13:21	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

February 27, 2026

Donna Benton, AICP
Director of Planning and Community Development
City of Dover
288 Central Ave
Dover, NH 03820

RE: Conditional Use Permit – Wetland Protection District
Eversource Dover Substation
Cocheco Street, Dover, NH 03820
Tax Map 24, Lot 132

Dear Ms. Benton,

On behalf of our Client, Public Service Company of NH (DBA Eversource Energy) (Eversource), enclosed please find a complete Conditional Use Permit Application Package for the Eversource Dover Substation project, located at the above noted address.

As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation.

In order to facilitate the required electrical connections, two (2) of the proposed temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard. A temporary staging area is to be located west of the substation with an access route beginning at the existing Cocheco Street gravel entrance and terminating at the northeast corner of the substation.

In addition to the City CUP being requested, a New Hampshire Department of Environmental Services (NHDES) Expedited Minimum Impact (EXP) Wetlands Permit will be required.

We look forward to the upcoming opportunity to review this project with the Conservation Commission and Planning Board. Should there be any questions or concerns regarding this submittal or the project in general, please do not hesitate to contact the undersigned at (603) 491-3362/jbelanger@tfmoran.com or Principal Nicholas Golon at (603) 472-4488/ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Jeremy Belanger

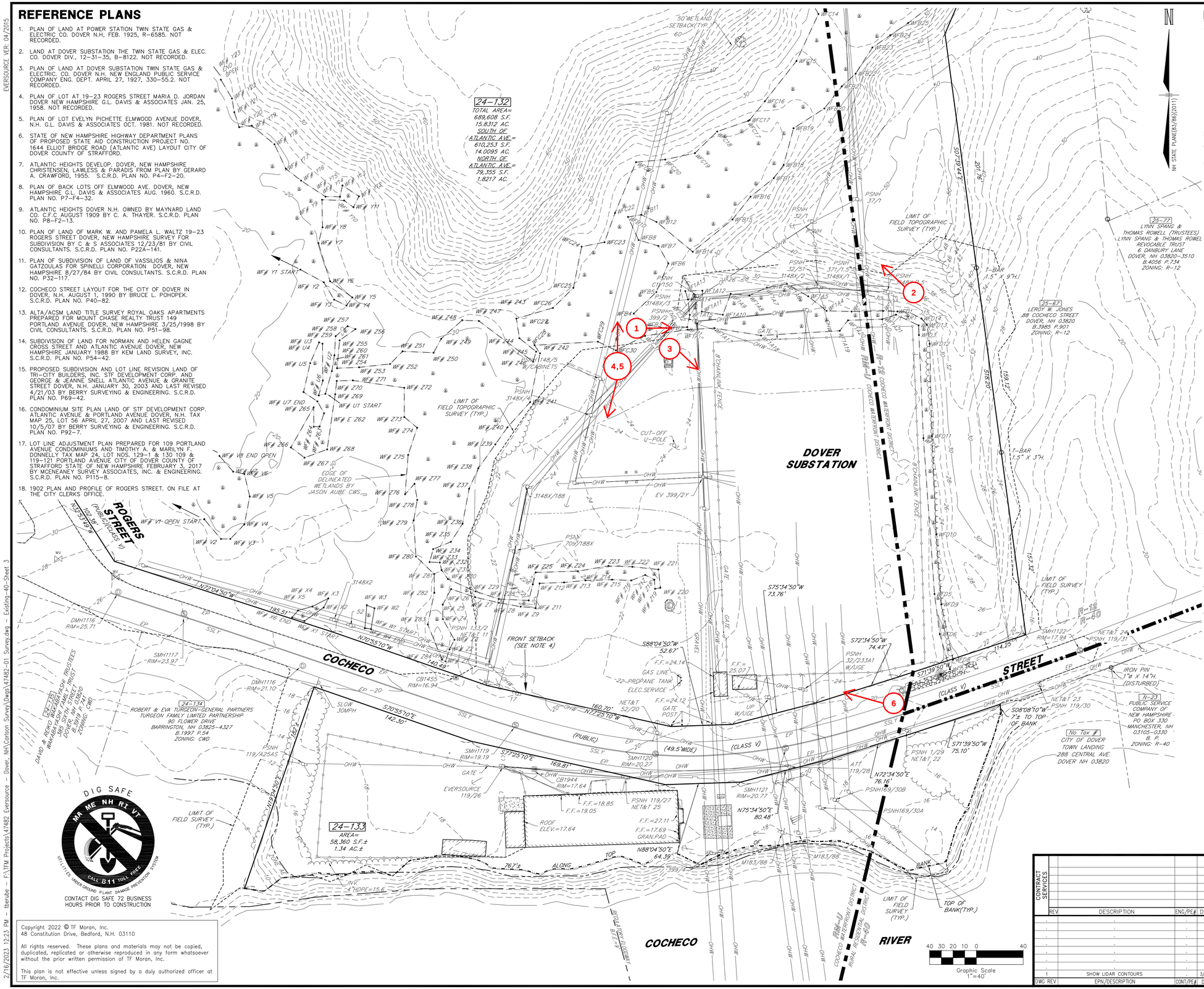
Jeremy Belanger
Senior Project Engineer

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

EVERSOURCE VER: 04/2015

REFERENCE PLANS

1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. FEB. 1925, R-6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
4. PLAN OF LOT AT 19-23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4-F2-20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7-F4-32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8-F2-13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19-23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A-141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32-117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40-82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51-98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P44-42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI-CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69-42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92-7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129-1 & 130 109 & 119-121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115-8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.



NOTES

1. OWNER OF RECORD MAP 24, LOT 132: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS RM-U.

   DEED REFERENCE(S) TO PARCEL: B.423 P.176, B.423 P.177, B.423 P.179, EXCEPT B.537 P.461 IN THE SCRD.
   AREA = 689,608 SF+/- or 15.8312 Acres +/-.

   OWNER OF RECORD MAP 24, LOT 133: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: 75 COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS CWD.
   DEED REFERENCE TO PARCEL: B.518 P.443, B.330 P.153, B.329 P.484 IN THE SCRD.
   AREA = 58,360 SF+/- or 1.34 Acres +/-.
2. 24-132 INDICATES TAX MAP AND BLOCK NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF AN EXISTING CONDITIONS SURVEY OF LOTS 24-132 & 24-133 LOCATED ON COCHECO AND ROGERS STREETS IN DOVER, NH.
4. CURRENT ZONING DISTRICT: URBAN DENSITY MULTI-RESIDENTIAL DISTRICT (RM-U).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: SEE ORDINANCE. **SEE NOTE.
   ABUTTING STREET SETBACK: SEE ORDINANCE. **SEE NOTE.
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 15 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: THE FRONT SETBACK IN THE RM-U ZONE IS DEFINED IN THE CITY OF DOVER ZONING ORDINANCE AS BEING THE OWNER CALCULATED AVERAGE OF ALL SETBACKS WITHIN THE SAME ZONE, ON THE SAME SIDE OF STREET, TWO HUNDRED FIFTY FEET IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE. DEFINED FRONT SETBACK IS A "BUILD TO LINE" MEANING STRUCTURES MAY BE CONSTRUCTED WITHIN 5 FEET PLUS OR MINUS OF THE AVERAGE.

   CURRENT ZONING DISTRICT: MEDIUM DENSITY RESIDENTIAL (R-12).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   ABUTTING STREET SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 30 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: EXPANSIONS TO, OR RENOVATIONS OF STRUCTURES ON EXISTING LOTS HAVE A 5 FOOT SETBACK.

   CURRENT ZONING DISTRICT: COCHECO WATERFRONT DISTRICT (CWD)
   MINIMUM LOT SIZE: N/A
   MINIMUM LOT COVERAGE: 75 PERCENT
   MINIMUM FRONTAGE: N/A
   PRINCIPAL BUILDING:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   MAXIMUM BUILDING HEIGHT: 55 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE, (ALL JURISDICTIONS) MAP NUMBER: 33017C0330E EFFECTIVE DATE: SEPTEMBER 30, 2015 INDICATES THAT A PORTION OF LOT 24-133 IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE A AND ZONE AE AND THAT LOT 24-132 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
6. HORIZONTAL COORDINATES: PROJECTION: NH STATE PLANE
   HORIZONTAL DATUM: NAD 83/86 (2011)
   VERTICAL DATUM: NAVD 88
7. EASEMENTS, RIGHTS AND RESTRICTIONS:
   - B.931 P.3: CITY OF DOVER SEWER EASEMENT

   EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PARCELS MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. LOT 24-133 CONTAINS A NATURAL WATER BOUNDARY ALONG THE COCHECO RIVER AND THIS BOUNDARY LINE IS SUBJECT TO CHANGE DUE TO NATURAL CAUSES AND MAY OR MAY NOT REPRESENT THE ACTUAL LOCATION OF LIMIT OF TITLE.

KEY

PHOTO NUMBER, LOCATION, ORIENTATION

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer at TF Moran, Inc.

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj: 47482.01

PHOTO ORIENTATION KEY

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132 & 133
DOVER SUBSTATION
COCHECO & ROGERS STREET
DOVER, NEW HAMPSHIRE

T	#
DRAWN TNB	
ENGINEER NG	
CHECKED HGM	
APPROVED HGM	
DATE 3/11/22	

SCALE 1" = 40'
FILE: 47482-01 SURVEY.DWG
IMAGE:
DRAWING NO. SHEET 3 OF 3

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	SHOW LIDAR CONTOURS	-	3/16/22	TNB	HGM	-
DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

2/16/2023 12:23 PM - tberube - F:\TFM Projects\47482 Eversource - Dover, NH\Carlson Survey\Dwgs\47482-01 Survey.dwg 2/16/2023 12:45:29 PM

F:\TFM Projects\47482 Eversource - Dover, NH\Carlson Survey\Dwgs\47482-01 Survey.dwg - Existing-40-Sheet 3

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 1: Looking east at the location of the proposed wetland impacts at the north side of the substation.



Photograph No. 2: Looking northwest at the landscape upslope of the proposed impact area.

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 3: Looking southeast at the existing substation infrastructure.



Photograph No. 4: Looking southwest at the landscape adjacent to the access route.

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 5: Looking north at a wetland near the northwest edge of the site.



Photograph No. 6: Looking northwest from Cocheco Street at the existing substation.

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Eversource Energy c/o Kurt Nelson Telephone # (603) 714-3031

Address of Applicant: 13 Legends Drive, Hooksett, NH 03106

E-Mail Address: kurt.nelson@eversource.com

Name of Property Owner (if different from applicant): Public Service Co of NH (DBA Eversource Energy) Telephone # (603) 714-3031

Address of Property Owner: PO Box 330, Manchester, NH 03105-0330

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # 132

Address of Property: Cocheco Street, Dover, NH 03820

Zoning District(s) RMU & R-12 Overlay District(s) Wetland Protection

Existing Use of Property: Public Utility - Electrical Substation

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☒ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Access for installation of electrical infrastructure equipment within the Wetland Protection District. Please see attached narrative.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Expedited Minimum Impact Wetlands Permit

Name of Professional That Prepared Plans: TFMoran, Inc. c/o Nicholas Golon, PE

Address 48 Constitution Drive, Bedford, NH 03110 Telephone #: (603) 472-4488

Professional License #: 14086 E-mail address: ngolon@tfmoran.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 2/27/2026

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 2/27/2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2/27/2026

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
24	132	Public Service Co of NH	PO Box 330, Manchester, NH 03105-0330

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Kurt Nelson	Eversource Energy	13 Legends Drive, Hooksett, NH 03106

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Michael Dahlberg, LLS	TFMoran, Inc.	48 Constitution Drive, Bedford, NH 03110
Jason Aube, CWS	TFMoran, Inc.	48 Constitution Drive, Bedford, NH 03110
Nicholas Golon, PE	TFMoran, Inc.	48 Constitution Drive, Bedford, NH 03110

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS
N/A			

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan review fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # __1__ per Application = $ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $__200.00__

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $10.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $10.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The amount due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

February 27, 2026

Donna Benton, AICP
Director of Planning and Community Development
City of Dover
288 Central Ave
Dover, NH 03820

RE: Conditional Use Permit – Wetland Protection District
Eversource Dover Substation
Cocheco Street, Dover, NH 03820
Tax Map 24, Lot 132

Dear Ms. Benton,

On behalf of our Client, Public Service Company of NH (DBA Eversource Energy) (Eversource), a conditional use permit for wetland buffer impacts for access and installation of temporary electrical infrastructure at the existing Eversource Dover Substation, located at the above noted address, is requested.

Project Description:

As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation.

In order to facilitate the required electrical connections, two (2) of the proposed temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard. A temporary staging area is to be located just west of the substation with an access route starting at the Cocheco St. entrance and terminating at the northeast corner of the substation.

Temporary timber matting will be installed along the access route depicted on the attached Wetlands Impact & Access Plans to minimize and prevent rutting and compaction of wetland vegetation and soils. Areas disturbed by work will be stabilized with hay mulch and restored as nearly as possible to pre-construction options. All work shall be completed in accordance with the New Hampshire Department of Natural & Cultural Resources “Best Management Practices (BMPs) Manual, Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire”.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Work is proposed to begin at the end of March or beginning of April, though this schedule is dependent on permitting timelines and contractor availability.

Under the proposed scope, we respectfully request a Conditional Use Permit to permit approximately 1,635 SF of impact within the City of Dover Wetland Protection District 50-foot wetland buffer. In accordance with Section 170-28.F.(1)(a) to (f) of the Dover Zoning Ordinance, we present the following Criteria.

Conditional use approval may be granted by the Planning Board after proper public notice and public hearing, for construction within the Wetland Protection District or buffer. Said construction may include, but is not limited to, a road or other accessway, utility right-of-way, communication lines, power lines and pipelines, structures, and parking lots, provided that the proposed construction complies with the following standards:

a) **Practicable alternative. That there is no practicable alternative that would have a less adverse impact on the area.**
The proposed disturbance to the buffer cannot practicably be located elsewhere on the lot to eliminate or reduce the impacts to the buffer, and represents the minimum extent of disturbance necessary to facilitate the essential public utility project. The project has been refined to propose the least impacting layout that meets the required electrical configuration based on the location of the existing utility lines, active electrical substation, and electrical interconnection points.

b) **Avoidance. The potential impacts have been avoided to the maximum extent practicable. The applicant will demonstrate by plan and example that the proposed construction represents the least impacting alternative.**
The project has been refined to propose the least impacting layout that meets the required electrical configuration based on the location of the existing utility lines, active electrical substation, and electrical interconnection points. Proposed electrical equipment including the temporary (mobile) transformer and five (5) of the eight (8) utility poles will be installed from within the existing substation yard, eliminating the need for additional wetland and/or buffer impacts.

NHDES approved best management practices (BMPs) will be followed during construction to minimize impacts to the site. The design and construction of the proposed utility structures have been located so as to minimize any detrimental impacts upon the Wetland Protection District and areas of disturbance shall be restored as nearly as possible to its current condition.

Please see accompanying "Eversource Dover Substation – Wetlands Impact & Access Plans", prepared by TFMoran, Inc.

c) **Minimization. Any unavoidable impacts have been minimized. No reasonable alternative to the proposed construction exists which does not impact a wetland of which has less detrimental impact on a wetland. Design, construction, and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and will include restoration of the site as nearly as possible to its original grade.**
Due to the location of the existing utility lines, active electrical substation, and electrical interconnection points, wetland and buffer impacts area unavoidable to facilitate the essential public utility project. As presented, the access, staging, electrical layout and construction

methods have been designed to minimize detrimental impacts to the wetlands and buffer to the greatest extent possible.

There is no proposed change to the existing grades within the wetlands or buffer.

d) Mitigation. If the applicant is required by state rules to prepare a compensatory mitigation plan, the applicant shall provide the Conservation Commission and Planning Board with one copy each of said plan for their review.
Not Applicable, mitigation is not required for this project.

e) Approval for the wetlands impact has been received from the New Hampshire Department of Environmental Service Wetlands Bureau pursuant to Section G(3).
The proposal requires an NHDES Expedited (EXP) Minimum Impact Wetlands Permit. A copy of the permit application has been included as part of this submittal for Conservation Commission review. Upon Conservation Commission signature, the application will be submitted to NHDES for approval.

f) To assess and summarize the wetlands' functions and values as denoted in the NH Method and §170-28B(2).
The functions and values of the wetlands within the area of work have been assessed by a NH Certified Wetland Scientist using the NH Method in addition to the U.S. Army Corps of Engineers Highway Methodology classified as PEM1Eh (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated, Diked/Impounded).

It is not anticipated that there will be adverse effects to the functions and values of the wetland in question as impacts have been minimized to the greatest extent practicable, temporary matting shall be utilized during installation, and areas of disturbance shall be restored as nearly as possible to its current condition at the completion of construction.

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Property Owner Name: PSNH (dba Eversource Energy)

Signature(s) of Property Owner(s): _____ Date: 2026-02-27

Signature of Applicant: _____ Date: _____
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity..

Property Owner Name: PSNH (dba Eversource Energy)

Signature(s) of Property Owner(s): _____ Date: 2026-02-27

Signature of Applicant: _____ Date: _____
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

EVERSOURCE ENERGY

February 27, 2026

City of Dover
Planning & Community Development Department
288 Central Ave
Dover, NH 03820

New Hampshire Department of Environmental Services
29 Hazen Drive
PO Box 29
Concord, New Hampshire 03302-0095

RE: Letter of Authorization
Eversource Dover Substation
Cocheco Street, Dover, NH 03820
Tax Map 24, Lot 132

To whom it may concern;

Public Service Company of New Hampshire (PSNH) (DBA Eversource Energy) authorizes TFMoran, Inc. (TFM) to act as their representatives for all permitting and siting requirements relating to the proposed Eversource Dover Substation Project at the above referenced property.

Sincerely,



Kurt Nelson, Manager, Licensing & Permitting
Public Service Company of New Hampshire (PSNH) (DBA Eversource Energy)

COND-2026-0011 **COCHECHO STREET**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
24127-000000	19 ROGERS ST	TUTTLE HOWARD H		19 ROGERS STREET	DOVER	NH	03820
24135-000000	67 COCHECO ST	MARKER 44 HOLDINGS LLC		130 CENTRAL AV	DOVER	NH	03820
25046-000000	6 GRANITE ST	DIVERSIFIED BUILDING AND MAINTENANCE LLC		209 SIXTH ST	DOVER	NH	03820-2308
24118-000000	24 ROGERS ST	PETROVITSIS JOHN T		72 PERKINS RD	MADBURY	NH	03823
24121-000000	10 ROGERS ST	BAGLEY SARAH	POLAKIEWICZ JOSHUA	10 ROGERS ST	DOVER	NH	03820
24124-000000	11 ROGERS ST	CLARK ANDREW &	CERESA MARIELLE	11 ROGERS ST	DOVER	NH	03820
25061-A00000	11 ATLANTIC AV	STORMS DIANE M GORMLY &	STORMS ALLEN H	11 ATLANTIC AVENUE	DOVER	NH	03820
25079-000000	2 DANBURY LN	OPOLSKI EMILY L		2 DANBURY LN	DOVER	NH	03820
24127-A00000	21 ROGERS ST	CASTELOT WILLIAM A III &	CASTELOT ALLISON	21 N WATER ST	BOSCAWEN	NH	03303
25010-A00000	18 ATLANTIC AV	SEARLES PAULA S	SEARLES HARLAN H III	18 ATLANTIC AV	DOVER	NH	03820
25045-A00000	2 MAGNOLIA DR	TRI CITY BUILDERS INC		242 CENTRAL AVE	DOVER	NH	03820
25067-000000	88 COCHECO ST	JONES REMI F & CALLY G TRUSTEES	THE JONES FAMILY TRUST AGREEMENT	88 COCHECO ST	DOVER	NH	03820
25070-000000	98 COCHECO ST	CHRISTENBURY PARKS	CHRISTENBURY SUZANNE	98 COCHECO STREET	DOVER	NH	03820
25072-000000	104 COCHECO ST	MOREAU LINDA D LIFE ESTATE &	LORD BENJAMIN	104 COCHECO STREET	DOVER	NH	03820
25078-000000	4 DANBURY LN	MAXFIELD JAMES H &	MAXFIELD ANGELA L	4 DANBURY LN	DOVER	NH	03820-3510
25009-000000	2 CROSS ST	GAGNE CAROLYN		2 CROSS ST	DOVER	NH	03820
25062-000000	19 ATLANTIC AV	PURINGTON GRANT &	PURINGTON NICOLE MARGARET	19 ATLANTIC AVENUE	DOVER	NH	03820
25064-000000	21 ATLANTIC AV	SAVAGE JOHN & CECILE TRUSTEES	SAVAGE FAMILY REVOCABLE TRUST	21 ATLANTIC AVE	DOVER	NH	03820
25069-000000	94 COCHECO ST	CARLETON KATHERINE M		1 WINTER ST STE 3	ROCHESSTER	NH	03867
24119-000000	20 ROGERS ST	MCATAVEY D JAMES TRUSTEE	MCATAVEY D JAMES REVOCABLE TRUST	26 PROSPECT STREET	DOVER	NH	03820
25043-B00000	149 PORTLAND AV	149 PORTLAND AVENUE LLC		149 PORTLAND AVE	DOVER	NH	03820
24133-000000	75 COCHECO ST	PUBLIC SERV CO OF N H		PO BOX 330	MANCHESTER	NH	03105-0330
25045-001002	13 MAGNOLIA DR	HURLEY SEAN M		13 MAGNOLIA DR	DOVER	NH	03820
25056-001002	2 TOWNSEND DR	GERVAIS IAN		3 ARTISAN DR UNIT 219	SALEM	NH	03079
25056-002036	36 TOWNSEND DR	KLAEHN MARKUS	KLAEHN HEATHER	1282 OCEAN BLVD	RYE	NH	03870
25056-001000	2 TOWNSEND DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25056-002000	30 TOWNSEND DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25056-004023	23 TOWNSEND DR	BONNER KARISSA		23 TOWNSEND DR	DOVER	NH	03820
25056-004029	29 TOWNSEND DR	ROLFS KATIE		29 TOWNSEND DR	DOVER	NH	03820
25056-001006	6 TOWNSEND DR	LAUGHTON CHELSEA		6 TOWNSEND DR	DOVER	NH	03820
25056-005021	21 TOWNSEND DR	ROBINSON CAPANO JANET L		21 TOWNSEND DR	DOVER	NH	03820
2545A-000002	4 MAGNOLIA DR	BAKER CHRISTINE L		4 MAGNOLIA DR	DOVER	NH	03820
2545A-001001	3 MAGNOLIA DR	CHRISTIANSEN BRENT D		3 MAGNOLIA DR	DOVER	NH	03820-3657
25056-005000	15 TOWNSEND DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25056-004025	25 TOWNSEND DR	SHORT DAVID B		25 TOWNSEND DR	DOVER	NH	03820
25056-004027	27 TOWNSEND DR	BURKE TIMOTHY S	BURKE CATHERINE L	27 TOWNSEND DR	DOVER	NH	03820
25045-000001	10 MAGNOLIA DR	LU YAN		10 MAGNOLIA DR	DOVER	NH	03820
25045-000004	16 MAGNOLIA DR	MATTSON DEBRA J		16 MAGNOLIA DR	DOVER	NH	03820
25045-A00001	3 MAGNOLIA DR	TRI CITY BUILDERS INC		242 CENTRAL AVE	DOVER	NH	03820
2545A-000001	2 MAGNOLIA DR	MCGREVEY THOMAS PATRICK		2 MAGNOLIA DR	DOVER	NH	03820
25056-005019	19 TOWNSEND DR	CARON BENJAMIN L		5 SMITH FARM RD	CROMWELL	CT	06416
25056-003031	31 TOWNSEND DR	TESTA ERICA		31 TOWNSEND DR	DOVER	NH	03820
25056-003037	37 TOWNSEND DR	MERRICK KAREN E		37 TOWNSEND DR	DOVER	NH	03820
25045-000002	12 MAGNOLIA DR	WILLARD KERIN		12 MAGNOLIA DR	DOVER	NH	03820
25056-005015	15 TOWNSEND DR	NORTHRIDGE PAULA J		15 TOWNSEND DR	DOVER	NH	03820-6514
25056-002030	30 TOWNSEND DR	CZAJA JESSICA		30 TOWNSEND DR	DOVER	NH	03820
2545A-000003	6 MAGNOLIA DR	YUN JONGPIL		6 MAGNOLIA DR	DOVER	NH	03820
2545A-001002	5 MAGNOLIA DR	ANDERSON TYLER M &	ANDERSON JULIA E	15 EDGEWOOD RD	PORTSMOUTH	NH	03801-5742
2545A-001004	9 MAGNOLIA DR	RUDOLPH MARY		PO BOX 1473	DOVER	NH	03821
25045-001000	11 MAGNOLIA DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
24123-000000	7 ROGERS ST	REDTRUCK PROPERTIES LLC		PO BOX 571	EXETER	NH	03833
24128-A00000	25-29 ROGERS ST	GATZOULIS NINA & VASSILIOS A	C/O WINSOR BROOK PROPERTY ADVISORS	385 SIXTH ST	DOVER	NH	03820
25056-003033	33 TOWNSEND DR	MACHIN CHRISTINE E		58 BRECKENRIDGE WY UNIT 31	LACONIA	NH	03246
25056-004000	23 TOWNSEND DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25045-001001	11 MAGNOLIA DR	PMB95 LLC		539 ABBOTT RD	ACTON	ME	40001
25045-001003	15 MAGNOLIA DR	MILLER KATHLEEN A		15 MAGNOLIA DR	DOVER	NH	03820
25076-000000	5 DANBURY LN	MAXFIELD RONALD C & GLORIA J TRUSTEES	MAXFIELD RONALD AND GLORIA REVOCABLE TRU	2750 TANAGER LN	ENGLEWOOD	FL	34224
2545A-001003	7 MAGNOLIA DR	WHITESTONE BLAINE M		50 PHEASANT LN	MANCHESTER	NH	03109-5927
2545A-000004	8 MAGNOLIA DR	SENTIS THOMAS	SENTIS HENA DESAI	8 MAGNOLIA DR	DOVER	NH	03820
24129-001000	109 PORTLAND AV	MCBEAU LLC		51 SIXTH STREET	DOVER	NH	03820
25009-A00000	4 CROSS ST	COLE JUDITH V TRUSTEE	COLE JUDITH V REVOCABLE TRUST	5 CROSS ST	DOVER	NH	03820-3515
25010-000000	20 ATLANTIC AV	WILSON MICHAEL J		20 ATLANTIC AV	DOVER	NH	03820
25035-000000	2 ELMWOOD AV	MESERVE ROBERT H	MESERVE PIPER A	2 ELMWOOD AV	DOVER	NH	03820
25036-000000	6 ELMWOOD AV	ADAMS GLENN L TRUSTEE	ADAMS LAURA L IRREVOCABLE TRUST	6 ELMWOOD AVE	DOVER	NH	03820
25056-002032	32 TOWNSEND DR	METHOT LANCE		32 TOWNSEND DR	DOVER	NH	03820
25056-002034	34 TOWNSEND DR	ROOP JENNIFER LD &	ROOP JOSHUA H	34 TOWNSEND DR	DOVER	NH	03820
24122-000000	3 ROGERS ST	MANN STUART S & KATHI D TRUSTEES	MANN FAMILY TRUST	149 ROCHESTER HILL RD	ROCHESTER	NH	03867
24134-000000	73 COCHECO ST	TURGEON ROBERT & EVA GEN PART	TURGEON FAMILY LIMITED PARTNER	90 FLOWER DR	BARRINGTON	NH	03825-4327
25068-000000	92 COCHECO ST	GARAY VICTORIA E & JERRY E		92A COCHECO ST	DOVER	NH	03820
25045-001004	17 MAGNOLIA DR	LONGCHAMPS AARON		17 MAGNOLIA DR	DOVER	NH	03820
25056-003000	31 TOWNSEND DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25056-001008	8 TOWNSEND DR	DANIELS STAFFORD C IV	DUROCHER JULIE	8 TOWNSEND DR	DOVER	NH	03820
25056-003035	35 TOWNSEND DR	MOURGENOS GREGORY S		35 TOWNSEND DR	DOVER	NH	03820
24126-000000	17 ROGERS ST	CARR RICHARD WALTER		17 ROGERS ST	DOVER	NH	03820
24120-000000	12 ROGERS ST	MCATAVEY DENNIS B		1 CATTAIL CIR	SOMERSWORTH	NH	03878-3257
24125-000000	13 ROGERS ST	CHOUINARD SAMUEL CLINTON		13 ROGERS ST	DOVER	NH	03820
24135-A00000	65 COCHECO ST	MAGLARAS GEORGE		33 COCHECO ST	DOVER	NH	03820
25077-000000	6 DANBURY LN	SPANG LYNN & ROWELL THOMAS TRUSTEES	SPANY LYNN AND ROWELL THOMAS REVOCABLE T	6 DANBURY LN	DOVER	NH	03820-3510
25045-000000	10 MAGNOLIA DR	STF DEVELPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
25045-000003	14 MAGNOLIA DR	MALONSO RESTITUTO D		14 MAGNOLIA DR	DOVER	NH	03820
25056-005017	17 TOWNSEND DR	PAOLINI DAVID		242 CENTRAL AVE	DOVER	NH	03820
25056-001004	4 TOWNSEND DR	SCARSILLONI EDWARD	SCARSILLONI LESLIE	175 BOULDER DR	BARRINGTON	NH	03825
N0023-000000	COCHECO ST	PUBLIC SERV CO OF N H		PO BOX 330	MANCHESTER	NH	03105-0330
24132-000000	COCHECO ST	PUBLIC SERV CO OF N H		PO BOX 330	MANCHESTER	NH	03105-0330
		KURT NELSON		13 LEGENDS DRIVE	HOOKSET	NH	03106
		JEREMY BELANGER		48 CONSTITUTION DRIVE	BEDFORD	NH	03110

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday March 9, 2026
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Steve Fellows (Vice Chair), Robert Atwood (Secretary), Russ Warnock, Abigail Lyon, Brianna Group, Kristen Murphy (Alternate), Thomas Fargo (Alternate)
Absent (Excused): Brendan Mulhall (Alternate)
Absent (Unexcused):
STAFF PRESENT: Makayla Edgecomb (Conservation Planner)
OTHERS PRESENT:

1. CALL TO ORDER AND ROLL CALL
The meeting was convened at 5:30 PM.

2. CITIZENS' FORUM
The Chair gave instructions for Citizens' forum
D. Clough, part-time City employee commented on the importance of Adopt a Spot program for trees. Continued discussion occurred with the commission members.

K. Faustino gave an update on the Willand Pond topic which is on the agenda tonight and asked for continued support.

3. APPROVAL OF THE PRIOR MEETING MINUTES- February 9, 2026
S. Fellows moved to approve the minutes of February 9th as submitted. R. Atwood seconded. Vote: 5-0 with 3 abstentions

4. OLD BUSINESS

A. Willand Pond: Updated Bid Responses + Recommendations

M. Edgewood noted the state recommendation is to use herbicide and follow up with dash. Council put out a bid for dash only or manual removal. One bid for dash only and one bid for herbicide only were received. She explained the details of the treatment proposals received and the costs along with reviewing the details of the original bid for herbicide and follow up with dash which was recommended by the state.

The commission discussed the details of each in order to determine their recommendation to Council.

After much discussion the commission members agreed to endorse their original recommendation and to not recommend either of the two new plans that came in from the recent bid. They specified all of the reasons for their decision.

R. Warnock moved to recommend following the state plan with the funds already allocated and discouraged following either of the two new bids. A. Lyon seconded. Vote: All in favor (6-0)

B. Consider an amendment to the previously approved March 2024 vote of up to $20,000 to up to $30,000 for Willand Pond remediation.

This item not heard.

C. Smith Well lot

M. Edgecomb noted there is a delay while waiting on the state. There should be an update by the next meeting.

DRAFT

D. Member Update

Brendan Mulhall was not able to attend today, but he is moving at the end of the month and will no longer be a member. Brianna is now a regular member and Kristen is an alternate. Thomas Fargo is now a new alternate that was just appointed.

5. NEW BUSINESS

A. Consider a motion to expend 30k from the Conservation Fund that will go towards project costs in working with SELT to acquire a 10-acre donated Conservation Easement.

Kaitlyn Deyo from SELT presented the item to the commission, gave background information, details of the size and conservation value of the property.

She addressed questions from members of the commission.
One member commented on the importance of public access to conserved lands whenever possible.

Lyon moved to endorse expending up to $30,000 from the Conservation Fund to support the donated conservation easement project with SELT. B. Group seconded. Vote: All in favor (6-0)

B. City of Dover Conditional Use Permit and NHDES Expedited Minimum Impact Wetlands Permit for Eversource Energy Map 24, Lot 132 zoned RM-U located on Cocheco Street. Proposal is for an expansion to the Eversource Substation involving installation of temporary electric infrastructure resulting in 8 sf of permanent wetland impacts, 1,618 sf of temporary wetland impacts, 20 sf of permanent wetland buffer impacts and 1,615 sf of temporary wetland buffer impacts

Nick Golon, TF Moran represented the item and highlighted the location, overview of the project, and the permits required.

He addressed questions from the committee members.

S. Fellows moved to endorse the Conditional Use Permit and NHDES Expedited Minimum Impact Wetlands Permit. A. Lyon seconded. Vote: All in favor (6-0)

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

None

7. OTHER BUSINESS

A. By laws

M. Edgecomb noted staff has made edits and will need Council approval.

A. Lyon brought up items for possible revision including whether to have public comment on each hearing item rather than just citizens forum at the beginning of the meeting, and whether back and forth conversations with members of the public are allowed.

M. Edgecomb will arrange edits and have ready for review at the next meeting.

DRAFT

B. Handbook
Members should review and it can be discussed at the next meeting whether there are any suggested changes.

Other Business:
M. Edgecomb noted there is no longer a forestry sub-committee, but if anyone is interested in being on a working group to give input on the tree plantings (separate from the Ash tree project) let her know.

R. Warnock noted the Woodman museum is doing an earth day sustainability event and offered the commission a table.

Member comments:
K. Murphy – public access on conservation lands
Discussion ensued

8. ADJOURNMENT
S. Fellows moved to adjourn. A. Lyon seconded. Vote: U/A
The meeting was adjourned at 7:10 PM.

DRAFT

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Project # 47482.04

NHDES Wetlands Bureau

Expedited Minimum Impact (EXP) Wetlands Permit Application

for

Eversource Energy

Dover Substation

Cocheco Street, Dover, NH

Rockingham County

February 27, 2026

TFMoran, Inc.

170 Commerce Way – Suite #102
Portsmouth, NH 03801
(603) 431-2222

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SECTION 1

Env-Wt 310.01
EXPEDITED MINIMUM IMPACT (EXP)
WETLANDS PERMIT APPLICATION
Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: Eversource Energy **TOWN NAME:** Dover

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; Env-Wt 603.03; Env-Wt 603.05)

Please use the Wetland Permit Planning Tool (WPPT), the Natural Heritage Bureau (NHB) DataCheck Tool, the Aquatic Restoration Mapper, or other sources to assist in identifying key features such as: priority resource areas (PRAs), protected species or habitats, coastal areas, designated rivers, or designated prime wetlands.

Does the property contain a PRA? If yes, provide the following information:	☒ Yes ☐ No
• Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04).	☐ Yes ☒ No
• Protected species or habitat? ○ If yes, species or habitat name(s): Eastern grasswort, Georgia bulrush, Greater fringed-gentian, Seaside brookweed, Cliff swallow, New England cottontail, Spotted turtle ○ NHB Project ID #: 25-1598	☒ Yes ☐ No
• Bog?	☐ Yes ☒ No
• Floodplain wetland contiguous to a tier 3 or higher watercourse?	☐ Yes ☒ No
• Designated prime wetland or duly-established 100-foot buffer?	☐ Yes ☒ No
• Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☐ Yes ☒ No
Is the property within a Designated River corridor? If yes, provide the following information: • Name of Local River Management Advisory Committee (LAC): N/A • A copy of the application was sent to the LAC on Month: Day: Year:	☐ Yes ☒ No
For dredging projects, is the subject property contaminated? • If yes, list contaminant(s): N/A	☐ Yes ☒ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	☒ Yes ☐ No
For stream crossing projects, provide watershed size (see Wetland Permit Planning Tool or Stream Stats):	

N/A

SECTION 2 - ELIGIBILITY (Env-Wt 306.03; Env-Wt 310.01; Env-Wt 310.03)

You must confirm that your project meets **ALL** of the following statements to qualify for the EXP process:

- The project qualifies as minimum impact project (Env-Wt 306.03).
- The project does not include activities that are prohibited under RSA 482-A (Env-Wt 306.03(a)).
- The project does not include any work in a jurisdictional area that was started without first obtaining the applicable approval (Env-Wt 306.03(b)).
- No work has been done on the subject property pursuant to another EXP or a Statutory Permit-by-Notification (SPN) within 12 months of the date this EXP will be issued. Alternatively, if any work has been done on the subject property pursuant to another EXP or a SPN within 12 months of the date this EXP will be issued, then you are submitting information, including a plan, with this application demonstrating that:
  - The work proposed in this EXP application is wholly unrelated to and separate from the work already done under the EXP or SPN; and
  - The work proposed in this EXP application, when combined with work that has been done under previously issued EXPs or SPNs within the last 12 months, does not constitute a project for which a Standard Permit is required (Env-Wt 310.03(a)).
- If the project is located in a PRA, it also qualifies for an impact classification adjustment under Env-Wt 407.02 or a project-type exception (PTE) under Env-Wt 407.04 (Env-Wt 310.01(d)(6)).

☒ My project meets all statements above. Proceed to Section 3.

☐ My project does not meet all of the statements above. **Your project does not qualify for the EXP process. Your project either is not permittable or requires a Standard Permit.**

SECTION 3 - INFORMATION ON THE PROPOSED PROJECT (Env-Wt 310.01(c))

Identify the rule(s)/provision(s) which make the project a minimum impact project. Refer to the project list below and the Expedited Minimum Impact (EXP) Project Classification Guidance Document.

☐ Aquatic Vegetation Control Projects (Env-Wt 510.08(a))
☐ Water Access Structure Construction Projects (Env-Wt 511.06(a))
☐ Beach Replenishment Projects (Env-Wt 511.07(a))
☐ Deck or Patio Repair Projects (Env-Wt 511.08(a))
☐ Breakwater Maintenance and Repair Projects (Env-Wt 512.07(b))
☐ Docking and Accessory Docking Structure Construction, Repair, and Replacement Projects (Env-Wt 513.24(a))
☐ Docking Structure Modification Projects (Env-Wt 513.25(a))
☐ Accessory Docking Structure Installation, Construction, Modification, Repair, and Replacement Projects (Env-Wt 513.26(a))
☐ Canopy Projects (Env-Wt 513.27(a))
☐ Bank/Shoreline Stabilization Construction Projects (Env-Wt 514.07(a))
☐ Dug-in Basins and Boathouse Construction or Modification Projects (Env-Wt 515.06(a), (b))
☐ Dug-in Basins and Boathouse Maintenance and Repair Projects (Env-Wt 515.07(a))
☐ Intake and Outflow Structure Construction, Maintenance and Repair Projects (Env-Wt 516.05; Env-Wt 516.06(b))
☐ Trail or Pathway Projects (Env-Wt 517.06(a); Env-Wt 517.06(d))
☐ Boardwalk Projects (Env-Wt 517.07(a); (Env-Wt 517.09)
☐ Dry Hydrants and Other Non-Docking Structure Projects (Env-Wt 518.07(a)(1), (b))
☐ Pond Construction, Maintenance, and Repair Projects (Env-Wt 519.08(a), (b); Env-Wt 519.09(a))

☐ Residential Utility Installation Projects (Env-Wt 521.06(a)(7))
☐ Non-tidal Dredging Projects (Env-Wt 523.04(a))
☐ Residential, Commercial, and Industrial Development Projects (Env-Wt 524.06(b))
☐ Restoration/Enhancement Projects (Env-Wt 525.05)
☐ Dam Construction, Reconstruction, or Replacement Projects (Env-Wt 526.06(a))
☐ Dam Modification, Repair, or Maintenance Projects (Env-Wt 526.07(a))
☐ Pubic Highway Projects (Env-Wt 527.06; Env-Wt 527.07)
☐ Coastal Projects (Env-Wt 600)
☐ Stream Crossing Projects (Env-Wt 903.01(e))
☒ All Other Projects (Env-Wt 407.03)

Provide the project-specific information required by the rule(s)/provision(s). Refer to Chapters Env-Wt 400, Env-Wt 500, Env-Wt 600, and/or Env-Wt 900, as applicable, for project-specific application and design requirements.

This project proposes less than 3,000 square feet of total impacts. The project site has also been screened for sensitive resources, species, and natural communities. The results of this screening are attached to this application in the form of GIS data screening maps (courtesy of data available on NHGRANIT) as well as coordination with the NHDES Ecological Review Section. As a result of this screening and coordination, this project will not adversely impact any sensitive species or natural communities. This project qualifies to use the Minimum Impact Expedited Process established in Env-Wt 407.03.

Please see applicable Standard Project Specific Worksheets for guidance.

For projects located on waterbodies, provide the linear feet of shoreline frontage on the property: _____ linear feet

(☒ Not applicable)

Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached".

As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate the future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation. In order to facilitate the required electrical connections, two (2) of the new temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard.

Total impacts include 1,618 square feet of temporary impact and 8 square feet of permanent impact.

Identify the type of jurisdictional resources to be impacted and the area of impact in square feet and/or linear feet:

Jurisdictional resource: Wetlands
Temporary impacts: 1,618 square feet
Permanent impacts: 8 square feet

(☐ Not applicable)

SECTION 4 - PROJECT LOCATION (Env-Wt 310.01(b))

ADDRESS: Cocheco Street

TOWN/CITY: Dover

TAX MAP/LOT NUMBER: Map 24, Lot 132

US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Cocheco River
☐ N/A

LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 43.19854° North
-70.86354° West

SECTION 5 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 310.01(a))

If the applicant is a trust or a company, then the name of the trust or company should be written as the applicant's name.

NAME: Eversource Energy (c/o Kurt Nelson)

MAILING ADDRESS: 13 Legends Drive

TOWN/CITY: Hooksett	STATE: NH	ZIP CODE: 03106
PHONE: (603) 714-3031	EMAIL ADDRESS (OPTIONAL): kurt.nelson@eversource.com	
ELECTRONIC COMMUNICATION: By initialing here: KN, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 6 - AUTHORIZED AGENT INFORMATION (Env-Wt 310.01(a)) If the agent is a company, then the name of the company should be written as the agent's name.		
NAME: TFMoran, Inc. (c/o Olivia Boyer)		
MAILING ADDRESS: 170 Commerce Way, Suite #102		
TOWN/CITY: Portsmouth	STATE: NH	ZIP CODE: 03801
PHONE: (603) 431-2222	EMAIL ADDRESS (OPTIONAL): oboyer@tfmoran.com	
ELECTRONIC COMMUNICATION: By initialing here: OMB, I hereby authorize NHDES to communicate all matters relative to this application electronically.		

SECTION 7 - PROPERTY OWNER INFORMATION, IF DIFFERENT FROM APPLICANT (Env-Wt 310.01(a)) If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.		
NAME: Public Service Co of NH (DBA Eversource Energy)		
MAILING ADDRESS: PO Box 330		
TOWN/CITY: Manchester	STATE: NH	ZIP CODE: 03105
PHONE: (603) 714-3031	EMAIL ADDRESS (OPTIONAL): kurt.nelson@eversource.com	
ELECTRONIC COMMUNICATION: By initialing here: KN, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 8 - APPLICATION FEE (RSA 482-A:3, I)		
☒ $400 for minimum impact projects. Please make your check or money order payable to: "Treasurer - State of NH".		
SECTION 9 - REQUIRED CERTIFICATIONS (Env-Wt 310.01(d))		
Initial each box below to certify:		

Initials: OMB	The proposed project meets the conditions and limits of the applicable minimum impact project rule.
Initials: OMB	All abutters have been notified.
Initials:	If the project is to repair or replace a docking structure, the docking structure is an existing legal structure. (☒ N/A)

Initials: OMB	The proposal is the alternative with the least adverse impact to jurisdictional areas, as required by Env-Wt 310.01(d)(4).
Initials: OMB	The project is not an after-the-fact application.
Initials: OMB	The project is: • Not located in a PRA, or • Is located in a PRA but is subject to a classification adjustment under Env-Wt 407.02 or a project-type exception under Env-Wt 407.04.
Initials: OMB	The applicant is aware of the limits of the EXP and understands and will comply with all conditions in the EXP and all applicable conditions in Env-Wt 307.

Initials: OMB	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: OMB	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: OMB	The signer understands that: • The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: 1. Deny the application. 2. Revoke any approval that is granted based on the information. 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. • The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. • The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: OMB	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 10 - REQUIRED SIGNATURES (Env-Wt 310.01(d))

SIGNATURE (OWNER)*:	PRINT NAME LEGIBLY:	DATE:
	Kurt Nelson (Eversource Energy)	02/27/26

*Note: If the applicant is not the owner of the property, each property owner also shall sign and date the application provided that property owner signatures shall not be required for transportation projects adjacent to existing rights-of-way where an easement will be obtained prior to the start of construction (Env-Wt 311.11(d)). Check the following box if your project meets this exception: ☐.		
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY: OLIVIA BOYER (AGENT)	DATE: 02/27/26

SECTION 11 - CONSERVATION COMMISSION SIGNATURE (Env-Wt 310.01(h))**		
The signed statement from the Conservation Commission may be submitted electronically.		
The signature below certifies that the municipal Conservation Commission or, if there is no conservation commission, the local governing body, has reviewed this application and the municipality waives its right to intervene on the project, per RSA 482-A:11.		
AUTHORIZED COMMISSION SIGNATURE:	PRINT NAME LEGIBLY:	DATE:

SECTION 12 - LOCAL RIVER MANAGEMENT ADVISORY COMMITTEE SIGNATURE (Env-Wt 310.01(i))**		
The signature below certifies that the LAC waives its right to intervene per RSA 482-A:11: (☒ N/A This project is **not** within a Designated River Corridor)		
AUTHORIZED LAC REPRESENTATIVE SIGNATURE:	PRINT NAME LEGIBLY:	DATE:

**Note: If the application is administratively complete, except for the signed statement from the Conservation Commission and/or LAC, the application will be processed under the application processing times established in RSA 482-A:3, XIV (Env-Wt 310.02(h)). The applicant may also indicate that they are applying for a minimum impact application under standard processing timelines.

SECTION 14 - TOWN / CITY CLERK SIGNATURE (Env-Wt 310.01(f))	
As required by RSA 482-A:3, I(a)(1), I hereby certify that the municipality has received four copies of the application, including all attachments.	
TOWN/CITY CLERK SIGNATURE:	PRINT NAME LEGIBLY:
TOWN/CITY:	DATE:

DIRECTIONS FOR TOWN/CITY CLERK:
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.

4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:
Submit the single, original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page.

AVOIDANCE AND MINIMIZATION WRITTEN NARRATIVE

Water Division/Land Resources Management

Wetlands Bureau

Check the Status of your Application

RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

APPLICANT'S NAME: Eversource Energy **TOWN NAME:** Dover

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed Avoidance and Minimization Checklist (NHDES-W-06-050) to the permit application.

SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))

Is the primary purpose of the proposed project to construct a water access structure?

No, the primary purpose of the proposed project is to maintain and prepare for the expansion of an electrical substation.

SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

The proposed project does not require access through wetlands for the purposes of reaching a buildable lot or portion thereof.

SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))*

For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

**Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*

The proposed work is specific to this property (Eversource Dover Substation) as the project is meant to assist in the forthcoming expansion of this specific substation.

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization?

There is no practicable alternative that would have a less adverse impact on the area and the environments under the Department's jurisdiction that would see less of an impact to jurisdictional areas. Permanent impacts have been minimized to the greatest practicable extent, and timber matting will be temporarily installed to protect the underlying wetland.

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))**

How does the project conform to Env-Wt 311.10(c)?

***Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A*.

N/A - A Wetland Functional Assessment is not required for minimum impact projects.

COASTAL RESOURCE WORKSHEET

Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A/ Env-Wt 600

APPLICANT LAST NAME, FIRST NAME, M.I.: **Eversource Energy**

This worksheet may be used to present the information required for projects in coastal areas, in addition to the information required for Lower-Scrutiny Approvals, Expedited Permits, and Standard Permits under Env-Wt 603.01.

Please refer to Env-Wt 605.03 for impacts requiring compensatory mitigation.

SECTION 1 - REQUIRED INFORMATION (Env-Wt 603.02; Env-Wt 603.06; Env-Wt 603.09)

The following information is required for projects in coastal areas.

Describe the purpose of the proposed project, including the overall goal of the project, the core project purpose consisting of a concise description of the facilities and work that could impact jurisdictional areas, and the intended project outcome. Specifically identify all natural resource assets in the area proposed to be impacted and include maps created through a data screening in accordance with Env-Wt 603.03 (refer to Section 2) and Env-Wt 603.04 (refer to Section 3) as attachments.

The purpose of this project is to install electrical infrastructure at the existing Eversource Dover Substation on Cocheco Street in Dover, NH.

This project is not expected to impact highest ranked habitat in New Hampshire, conservation lands, wildlife corridors, saltmarsh, or prime wetlands and their buffers.

We have coordinated with the NHDES Ecological Review Section to ensure that this project will not adversely impact any sensitive species or natural communities within the area.

GIS data screening maps are attached to this permit application. All maps utilize data from NHGRANIT.

For standard permit projects, provide:

☐ A Coastal Functional Assessment (CFA) report in accordance with Env-Wt 603.04 (refer to Section 3).

☐ A vulnerability assessment in accordance with Env-Wt 603.05 (refer to Section 4).

Explain all recommended methods and other considerations to protect the natural resource assets during and as a result of project construction in accordance with Env-Wt 311.07, Env-Wt 313, and Env-Wt 603.04.

The contractor will utilize proper erosion and sedimentation controls, as well as temporary matting for the construction vehicle access route and staging area (if necessary). See the attached Work Sequence Narrative for more details.

The criteria within Env-Wt 311.07, Env-Wt 313, and Env-Wt 603.04 apply to Standard Permit Applications, and this project is a minimum impact project. Neither a Coastal Functional Assessment (CFA) or Coastal Vulnerability Assessment (CVA) are required for this project.

Provide a narrative showing how the project meets the standard conditions in Env-Wt 307 and the approval criteria in Env-Wt 313.01.

As highlighted in the application form, this project meets all relevant standard conditions of Env-Wt 307 as well as the minimum standards of RSA 483-B. No tree cutting is proposed for the purpose of this project.

The criteria in Env-Wt 313.01 apply to Standard Permit Applications and this project is a minimum impact project.

Provide a project design narrative that includes the following:

☒ A discussion of how the proposed project:

- Uses best management practices and standard conditions in Env-Wt 307;
- Meets all avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- Meets approval criteria in Env-Wt 313.01;
- Meets evaluation criteria in Env-Wt 313.01(c);
- Meets CFA requirements in Env-Wt 603.04; and
- Considers sea-level rise and potential flooding evaluated pursuant to Env-Wt 603.05;

☒ A construction sequence, erosion/siltation control methods to be used, and a dewatering plan; and

☐ A discussion of how the completed project will be maintained and managed.

This project is intended to install utility infrastructure and does not require maintenance and/or removal of erosion and sedimentation control devices post-construction.

☐ Provide design plans that meet the requirements of Env-Wt 603.07 (refer to Section 5);

☐ Provide water depth supporting information required by Env-Wt 603.08 (refer to Section 6); and

☐ For any major project that proposes to construct a structure in tidal waters/wetlands or to extend an existing structure seaward, provide a statement from the Pease Development Authority Division of Ports and Harbors (DP&H) chief harbormaster, or designee, for the subject location relative to the proposed structure's impact on navigation. If the proposed structure might impede existing public passage along the subject shoreline on foot or by non-motorized watercraft, the applicant shall explain how the impediments have been minimized to the greatest extent practicable.

N/A - This project is a minimum impact project. The design plan for this project must meet the criteria of Env-Wt 310.01 instead of Env-Wt 603.07 and Env-Wt 603.08. The design plan included with this application addresses all of the criteria in Env-Wt 310.01.

Additionally, this project does not propose an overwater structure that could impede public passage. For this reason, a statement from the Pease Development Authority Division of Ports and Harbors (DP&H) Chief Harbormaster Tracy Shattuck is not needed.

SECTION 2 - DATA SCREENING (Env-Wt 603.03, in addition to Env-Wt 306.05)

Please use the Wetland Permit Planning Tool, or any other database or source, to indicate the presence of:

☐ Existing salt marsh and salt marsh migration pathways;

☐ Eelgrass beds;

☐ Documented shellfish sites;

☐ Projected sea-level rise; and

☐ 100-year floodplain.

Conduct data screening as described to identify documented essential fish habitat, and tides and currents that may be impacted by the proposed project, by using the following links:

☐ National Oceanic and Atmospheric Administration (NOAA) Tides & Currents; and

☐ NOAA Essential Fish Habitat Mapper.

☐ Verify or correct the information collected from the data screenings by conducting an on-site assessment of the subject property in accordance with Env-Wt 406 and Env-Wt 603.04.

SECTION 3 - COASTAL FUNCTIONAL ASSESSMENT/ AVOIDANCE AND MINIMIZATION (Env-Wt 603.04; Env-Wt 605.01; Env-Wt 605.02; Env-Wt 605.03)

Projects in coastal areas shall:

☒ Not impair the navigation, recreation, or commerce of the general public; and

☒ Minimize alterations in prevailing currents.

An applicant for a permit for work in or adjacent to tidal waters/wetlands or the tidal buffer zone shall demonstrate that the following have been avoided or minimized as required by Env-Wt 313.04:

☐ Adverse impacts to beach or tidal flat sediment replenishment;

☐ Adverse impacts to the movement of sediments along a shore;

☐ Adverse impacts on a tidal wetland's ability to dissipate wave energy and storm surge; and

☐ Adverse impacts of project runoff on salinity levels in tidal environments.

For standard permit applications submitted for minor or major projects:

☐ Attach a CFA based on the data screening information and on-site evaluation required by Env-Wt 603.03. The CFA for tidal wetlands or tidal waters shall be:

- Performed by a qualified coastal professional; and
- Completed using one of the following methods:

  a. The US Army Corps of Engineers (USACE) Highway Methodology Workbook, dated 1993, together with the USACE New England District *Highway Methodology Workbook Supplement*, dated 1999; or

  b. An alternative scientifically-supported method with cited reference and the reasons for the alternative method substantiated.

For any project that would impact tidal wetlands, tidal waters, or associated sand dunes, the applicant shall:

- ☐ Use the results of the CFA to select the location of the proposed project having the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- ☐ Design the proposed project to have the least impact to tidal wetlands, tidal waters, or associated sand dunes;
- ☐ Where impact to wetland and other coastal resource functions is unavoidable, limit the project impacts to the least valuable functions, avoiding and minimizing impact to the highest and most valuable functions; and
- ☐ Include on-site minimization measures and construction management practices to protect coastal resource areas.

Projects in coastal areas shall use results of this CFA to:

- ☐ Minimize adverse impacts to finfish, shellfish, crustacean, and wildlife;
- ☐ Minimize disturbances to groundwater and surface water flow;
- ☐ Avoid impacts that could adversely affect fish habitat, wildlife habitat, or both; and
- ☐ Avoid impacts that might cause erosion to shoreline properties.

SECTION 4 - VULNERABILITY ASSESSMENT (Env-Wt 603.05)

Refer to the New Hampshire Coastal Flood Risk Summary Part 1: Science and New Hampshire Coastal Flood Risk Summary Part II: Guidance for Using Scientific Projections or other best available science to:

Determine the time period over which the project is designed to serve.

This project is a minimum impact project and a Coastal Vulnerability Assessment (CVA) is not required.

Identify the project's relative risk tolerance to flooding and potential damage or loss likely to result from flooding to buildings, infrastructure, salt marshes, sand dunes and other valuable coastal resource areas.

N/A

Reference the projected sea-level rise (SLR) scenario that most closely matches the end of the project design life and the project's tolerance to risk or loss.

N/A

Identify areas of the proposed project site subject to flooding from SLR.

N/A

Identify areas currently located within the 100-year floodplain and subject to coastal flood risk.

N/A

Describe how the project design will consider and address the selected SLR scenario within the project design life, including in the design plans.

N/A

Where there are conflicts between the project's purpose and the vulnerability assessment results, schedule a pre-application meeting with the department to evaluate design alternatives, engineering approaches, and use of the best available science.

☐ Pre-application meeting date held: **No conflicts exist.**

SECTION 5 - DESIGN PLANS (Env-Wt 603.07, in addition to Env-Wt 311)

Submit design plans for the project in both plan and elevation views that clearly depict and identify all required elements.

The plan view shall depict the following:

☒ The engineering scale used, which shall be no larger than one inch equals 50 feet;

☐ The location of tidal datum lines depicted as lines with the associated elevation noted, based on North American Vertical Datum of 1988 (NAVD 88), derived from https://tidesandcurrents.noaa.gov/datum_options.html, as described in Section 6.

☐ An imaginary extension of property boundary lines into the waterbody and a 20-foot setback from those property line extensions;

☐ The location of all special aquatic sites at or within 100 feet of the subject property;

☒ Existing bank contours;

☐ The name and license number, if applicable, of each individual responsible for the plan, including:

a. The agent for tidal docking structures who determined elevations represented on plans; and

b. The qualified coastal professional who completed the CFA report and located the identified resources on the plan;

☒ The location and dimensions of all existing and proposed structures and landscape features on the property;

☐ Tidal datum(s) with associated elevations noted, based on NAVD 88; and

☐ Location of all special aquatic sites within 100-feet of the property.

The elevation view shall depict the following:

☐ The nature and slope of the shoreline;

☐ The location and dimensions of all proposed structures, including permanent piers, pilings, float stop structures, ramps, floats, and dolphins; and

☐ Water depths depicted as a line with associated elevation at highest observable tide, mean high tide, and mean low tide, and the date and tide height when the depths were measured. Refer to Section 6 for more instructions regarding water depth supporting information.

See specific design and plan requirements for certain types of coastal projects:

- Overwater structures (Env-Wt 606).
- Dredging activities (Env-Wt 607).
- Tidal beach maintenance (Env-Wt 608).
- Tidal shoreline stabilization (Env-Wt 609).
- Protected tidal zone (Env-Wt 610).
- Sand Dunes (Env-Wt 611).

SECTION 6 - WATER DEPTH SUPPORTING INFORMATION REQUIRED (Env-Wt 603.08)

Using current predicted NOAA tidal datum for the location, and tying field measurements to NAVD 88, field observations of at least three tide events, including at least one minus tide event, shall be located to document the range of the tide in the proposed location showing the following levels:

- ☐ Mean lower low water;
- ☐ Mean low water;
- ☐ Mean high water;
- ☐ Mean tide level;
- ☐ Mean higher high water;
- ☒ Highest observable tide line; and
- ☐ Predicted sea-level rise as identified in the vulnerability assessment in Env-Wt 603.05.

The following data shall be presented in the application project narrative to support how water depths were determined:

- ☐ The date, time of day, and weather conditions when water depths were recorded; and
- ☐ The name and license number of the licensed land surveyor who conducted the field measurements.

For tidal stream crossing projects, provide:

- ☐ Water depth information to show how the tier 4 stream crossing is designed to meet Env-Wt 904.07(c) and (d).

For repair, rehabilitation or replacement of tier 4 stream crossings:

- ☐ Demonstrate how the requirements of Env-Wt 904.09 are met.

SECTION 7 - GENERAL CRITERIA FOR TIDAL BEACHES, TIDAL SHORELINE, AND SAND DUNES (Env-Wt 604.01)

Any person proposing a project in or on a tidal beach, tidal shoreline, or sand dune, or any combination thereof, shall evaluate the proposed project based on:

- ☐ The standard conditions in Env-Wt 307;
- ☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;
- ☐ The approval criteria in Env-Wt 313.01;
- ☐ The evaluation criteria in Env-Wt 313.05;
- ☐ The project specific criteria in Env-Wt 600;
- ☐ The CFA required by Env-Wt 603.04; and
- ☐ The vulnerability assessment required by Env-Wt 603.05.

New permanent impacts to sand dunes that provide coastal storm surge protection for protected species or habitat shall not be allowed except:

- ☐ To protect public safety; and
- ☐ Only if constructed by a state agency, coastal resiliency project, or for a federal homeland security project.

Projects in or on a tidal beach, tidal shoreline, or sand dune shall support integrated shoreline management that:

- ☐ Optimizes the natural function of the shoreline, including protection or restoration of habitat, water quality, and self-sustaining stability to flooding and storm surge; and
- ☐ Protects upland infrastructure from coastal hazards with a preference for living shorelines over hardened shoreline practices.

SECTION 8 - GENERAL CRITERIA FOR TIDAL BUFFER ZONES (Env-Wt 604.02)

The 100-foot statutory limit on the extent of the tidal buffer zone shall be measured horizontally. Any person proposing a project in or on an undeveloped tidal buffer zone shall evaluate the proposed project based on:

☒ The standard conditions in Env-Wt 307;

☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;

☐ The approval criteria in Env-Wt 313.01;

☐ The evaluation criteria in Env-Wt 313.05;

☐ The project specific criteria in Env-Wt 600;

☐ The CFA required by Env-Wt 603.04; and

☐ The vulnerability assessment required by Env-Wt 603.05.

Projects in or on a tidal buffer zone shall preserve the self-sustaining ability of the buffer area to:

☒ Provide habitat values;

☐ Protect tidal environments from potential sources of pollution;

☒ Provide stability of the coastal shoreline; and

☒ Maintain existing buffers intact where the lot has disturbed area defined under RSA 483-B:4, IV.

SECTION 9 - GENERAL CRITERIA FOR TIDAL WATERS/WETLANDS (Env-Wt 604.03)

Except as allowed under Env-Wt 606, permanent new impacts to tidal wetlands shall be allowed only to protect public safety or homeland security. Evaluation of impacts to tidal wetlands and tidal waters shall be based on:

☒ The standard conditions in Env-Wt 307;

☐ The avoidance and minimization requirements in Env-Wt 311.07 and Env-Wt 313.03;

☐ The approval criteria in Env-Wt 313.01;

☐ The evaluation criteria in Env-Wt 313.05;

☐ The project specific criteria in Env-Wt 600;

☐ The CFA required by Env-Wt 603.04; and

☐ The vulnerability assessment required by Env-Wt 603.05.

Projects in tidal surface waters or tidal wetlands shall:

☐ Optimize the natural function of the tidal wetland, including protection or restoration of habitat, water quality, and self-sustaining stability to storm surge;

☐ Be designed with a preference for living shorelines over hardened stabilization practices; and

☐ Be limited to public infrastructure or restoration projects that are in the interest of the general public, including a road, a bridge, energy infrastructure, or a project that addresses predicted sea-level rise and coastal flood risk.

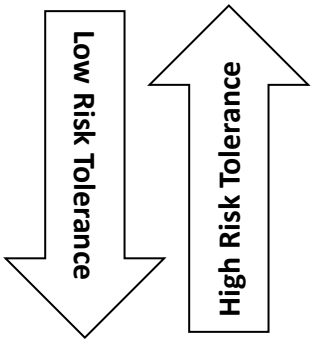
SECTION 10 – GUIDANCE

Your application must follow the New Hampshire Coastal Risk and Hazards Commission's Guiding Principles or other best available science. Below are some of these guidance principles:

- Incorporate science-based coastal flood risk projections into planning;
- Apply risk tolerance* to assessment, planning, design, and construction;
- Protect natural resources and public access;
- Create a bold vision, start immediately, and respond incrementally and opportunistically as projected coastal flood risks increase over time; and
- Consider the full suite of actions including effectiveness and consequences of actions.

*Risk tolerance is a project's willingness to accept a higher or lower probability of flooding impacts. The diagram below gives examples of project with lower and higher risk tolerance:

Critical infrastructures, historic sites, essential ecosystems, and high value assets typically have lower risk tolerance, and thus should be planned, designed, and constructed using higher coastal flood risk projections.



Sheds, pathways, and small docks typically have higher risk tolerance and thus may be planned, designed, and constructed using less protective coastal flood risk projections.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

WORK SEQUENCE NARRATIVE

Env-Wt 311.06 (d)

a) Eversource Energy, or their agent, will notify NHDES via the *Initiation of Construction Notification Form* no more than 7 days prior to commencing the construction activities.

b) Prior to construction activities, proper erosion and sedimentation controls will be implemented. A double row of silt socks will be installed surrounding the wetlands area, and then monitored, inspected, and adjusted as required throughout the duration of the project to best prevent unwanted sediment movement.

c) Construction equipment and materials will be mobilized to the site and properly staged up on temporary matting if necessary to provide a level pad. Timber matting will be installed along the access route for construction vehicle use.

d) Pollution prevention controls will be implemented during construction. Construction equipment will be inspected daily for leaking fuel, oil, and hydraulic fluid, and any necessary repairs will be made immediately. Contractors responsible for operating construction equipment will have oil spill kits readily available, and they will be trained in deploying this equipment should it be required.

e) A street sweeper or other method of debris/sediment clearing (to be determined by contractor) will be used to maintain roadways and parking areas.

f) Construction activities will occur as specified in the approved design plans and as conditioned by NHDES. Items to be installed include a 115-34.5kV 62.5MVA transformer and supporting electrical infrastructure consisting of eight 60-foot wooden poles and guy wires.

g) Once construction activities are complete, all matting, erosion and sedimentation controls, and pollution prevention controls will be removed. The site will be stabilized with hay mulch. All leftover materials and/or waste will be removed and properly disposed of.

h) Upon completing the project, Eversource Energy, or their agent, will notify NHDES via the *Completion of Construction Notice* and *Certificate of Compliance Form*.

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

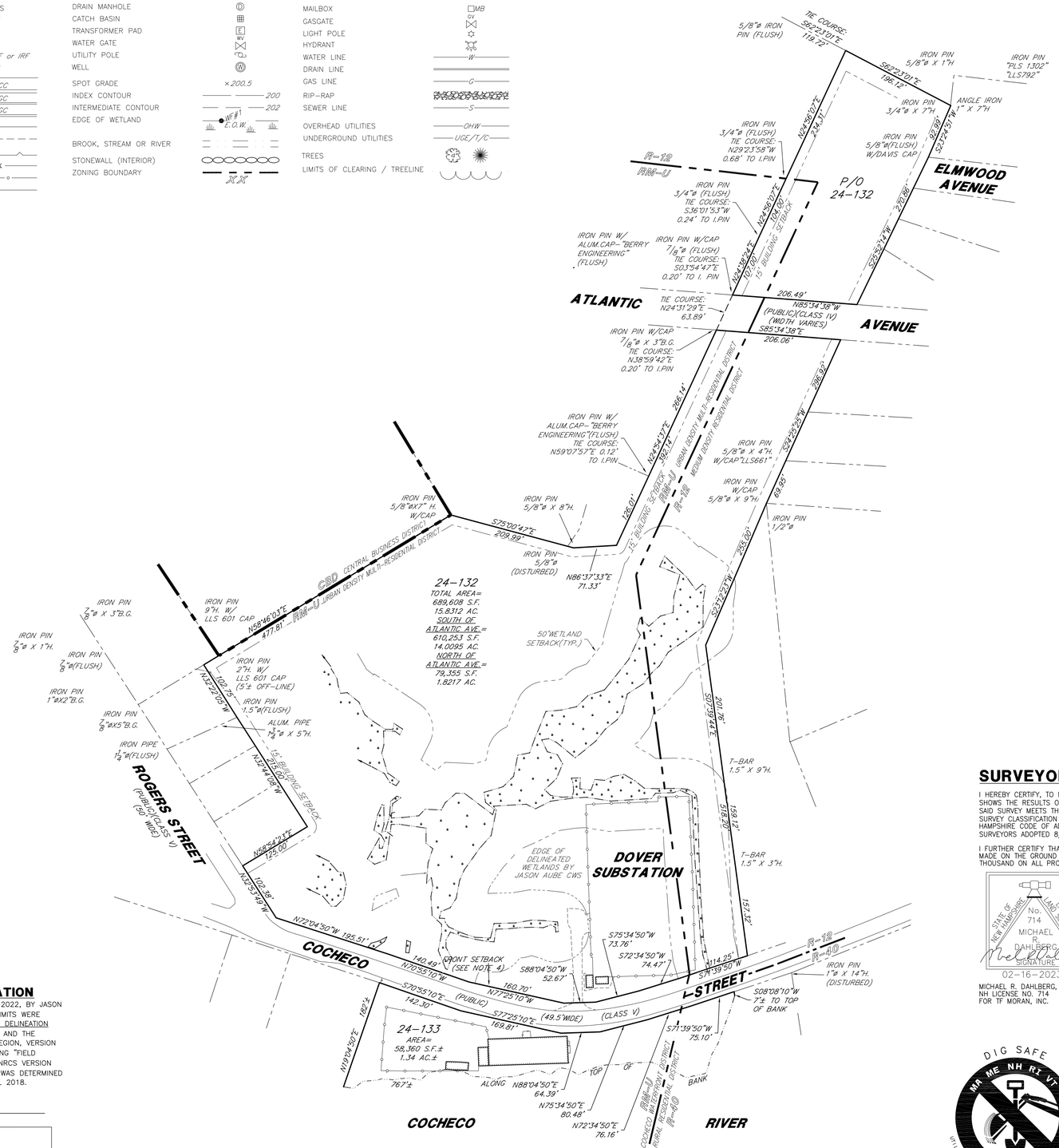
TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

EVERSOURCE VER: 04/2015

LEGEND

STONE BOUND TO BE SET	■ SBTBS	SEWER MANHOLE	Ⓢ
IRON PIN TO BE SET	● IRTBS	DRAIN MANHOLE	Ⓓ
CONCRETE BOUND	CBF	CATCH BASIN	▦
STONE BOUND	SBF	TRANSFORMER PAD	Ⓣ
IRON PIPE	IPF	WATER GATE	GV
IRON PIN	IPinF or IRF	UTILITY POLE	"D"
DRILL HOLE	DHF	WELL	Ⓦ
GUARD RAIL		SPOT GRADE	×200.5
BITUMINOUS CONCRETE CURB	BCC	INDEX CONTOUR	200
SLOPED GRANITE CURB	SGC	INTERMEDIATE CONTOUR	202
VERTICAL GRANITE CURB	VGC	EDGE OF WETLAND	WF#1 E.O.W.
EDGE OF PAVEMENT		BROOK, STREAM OR RIVER	
EDGE OF GRAVEL		STONEWALL (INTERIOR)	
RETAINING WALL		ZONING BOUNDARY	50' XX
WIRE FENCE	x		
CHAIN LINK FENCE	o		
WOOD FENCE			

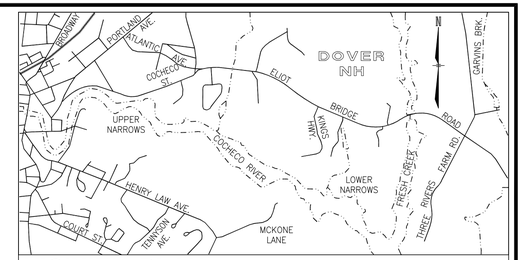
SIGN	
MAILBOX	MB
GASGATE	GV
LIGHT POLE	
HYDRANT	
WATER LINE	W
DRAIN LINE	
GAS LINE	G
RIP-RAP	
SEWER LINE	S
OVERHEAD UTILITIES	OHW
UNDERGROUND UTILITIES	UGE/T/C
TREES	
LIMITS OF CLEARING / TREELINE	



See Sheet 2 for Abutter Information & Reference Plans

N

NH STATE PLANE(83/86)(2011)



VICINITY PLAN SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD MAP 24, LOT 132: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS RM-U.

   DEED REFERENCE(S) TO PARCEL: B.423 P.176, B.423 P.177, B.423 P.179, EXCEPT B.537 P.461 IN THE SCRD.
   AREA = 689,608 SF+/- or 15.8312 Acres +/-.

   OWNER OF RECORD MAP 24, LOT 133: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: 75 COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS CWD.
   DEED REFERENCE TO PARCEL: B.518 P.443, B.330 P.153, B.329 P.484 IN THE SCRD.
   AREA = 58,360 SF+/- or 1.34 Acres +/-.
2. 24-132 INDICATES TAX MAP AND BLOCK NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF AN EXISTING CONDITIONS SURVEY OF LOTS 24-132 & 24-133 LOCATED ON COCHECO AND ROGERS STREETS IN DOVER, NH.
4. CURRENT ZONING DISTRICT: URBAN DENSITY MULTI-RESIDENTIAL DISTRICT (RM-U).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: SEE ORDINANCE. **SEE NOTE.
   ABUTTING STREET SETBACK: SEE ORDINANCE. **SEE NOTE.
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 15 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: THE FRONT SETBACK IN THE RM-U ZONE IS DEFINED IN THE CITY OF DOVER ZONING ORDINANCE AS BEING THE OWNER CALCULATED AVERAGE OF ALL SETBACKS WITHIN THE SAME ZONE, ON THE SAME SIDE OF STREET, TWO HUNDRED FIFTY FEET IN EACH DIRECTION FROM THE CENTER OF THE LOT LINE. DEFINED FRONT SETBACK IS A "BUILD TO LINE" MEANING STRUCTURES MAY BE CONSTRUCTED WITHIN 5 FEET PLUS OR MINUS OF THE AVERAGE.

   CURRENT ZONING DISTRICT: MEDIUM DENSITY RESIDENTIAL (R-12).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   ABUTTING STREET SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 30 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: EXPANSIONS TO, OR RENOVATIONS OF STRUCTURES ON EXISTING LOTS HAVE A 5 FOOT SETBACK.

   CURRENT ZONING DISTRICT: COCHECO WATERFRONT DISTRICT (CWD)
   MINIMUM LOT SIZE: N/A
   MINIMUM LOT COVERAGE: 75 PERCENT
   MINIMUM FRONTAGE: N/A
   PRINCIPAL BUILDING:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   MAXIMUM BUILDING HEIGHT: 55 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE, (ALL JURISDICTIONS) MAP NUMBER: 33017C0330E EFFECTIVE DATE: SEPTEMBER 30, 2015 INDICATES THAT A PORTION OF LOT 24-133 IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE A AND ZONE AE AND THAT LOT 24-132 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
6. HORIZONTAL COORDINATES: PROJECTION: NH STATE PLANE
   HORIZONTAL DATUM: NAD 83/86 (2011)
   VERTICAL DATUM: NAVD 88
7. EASEMENTS, RIGHTS AND RESTRICTIONS:
   - B.931 P.3: CITY OF DOVER SEWER EASEMENT

   EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PARCELS MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. LOT 24-133 CONTAINS A NATURAL WATER BOUNDARY ALONG THE COCHECO RIVER AND THIS BOUNDARY LINE IS SUBJECT TO CHANGE DUE TO NATURAL CAUSES AND MAY OR MAY NOT REPRESENT THE ACTUAL LOCATION OF LIMIT OF TITLE.

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "U" (URBAN) AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS ADOPTED 8/23/01, EFFECTIVE 8/24/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR — SIGNATURE

02-16-2023

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS WERE DELINEATED ON 2-17-2022, BY JASON AUBE, CWS #313 OF TF MORAN, INC. JURISDICTIONAL LIMITS WERE DETERMINED USING THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987) AND THE REGIONAL SUPPLIMENT: NORTHCENTRAL & NORTHEAST REGION, VERSION 2, JANUARY 2012. HYDRIC SOILS WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITED STATES" NRCS VERSION 8.1 (2017). DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2018.

CERTIFIED WETLAND SCIENTIST

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer at TF Moran, Inc.

100 75 50 25 0 100
Graphic Scale 1"=100'

DIG SAFE — MA ME NH RI VT — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM — CALL 811 TOLL FREE

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers | 48 Constitution Drive
Structural Engineers | Bedford, NH 03110
Traffic Engineers | Phone (603) 472-4488
Land Surveyors | Fax (603) 472-9747
Landscape Architects | www.tfmoran.com
Scientists | TFM Proj: 47482.01

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR
				TNB	NG	NG

EXISTING CONDITIONS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132 & 133
DOVER SUBSTATION
COCHECO & ROGERS STREET
DOVER, NEW HAMPSHIRE

T	#
DRAWN	TNB
ENGINEER	NG
CHECKED	HGM
APPROVED	HGM
DATE	3/11/22

SCALE 1" = 100' | FILE: 47482-01 SURVEY.DWG | IMAGE: | DRAWING NO. SHEET 1 OF 3

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EVERSOURCE VER: 04/2015

ABUTTERS LIST

24-134
ROBERT & EVA TURGEON-GENERAL PARTNERS
TURGEON FAMILY LIMITED PARTNERSHIP
90 FLOWER DRIVE
BARRINGTON, NH 03825-4327
B.1997 P.54
ZONING: CWD

24-135
DAVID & REIKO WAKABAYASHI TRUSTEES
WAKABAYASHI FAMILY TRUST
385 SIXTH STREET
DOVER, NH 03820
B.3919 P.741
ZONING: CWD

24-121
BARBARA A. & RICHARD JR. ZIELFELDER
10 ROGERS STREET
DOVER, NH 03820
B.3963 P.625
ZONING: RM-U

24-122
STUART S. & KATHI D. MANN TRUSTEES
MANN FAMILY TRUST
149 ROCHESTER HILL RD.
ROCHESTER, NH 03867
B.4855 P.513
ZONING: RM-U

24-123
REDTRUCK PROPERTIES LLC
PO BOX 571
EXETER, NH 03833
B.4673 P.58
ZONING: RM-U

24-124
ANDREW CLARK & MARIELLE CERESA
11 ROGERS STREET
DOVER, NH 03820
B.4846 P.1008
ZONING: RM-U

24-125
SAMUEL CLINTON CHOUINARD
13 ROGERS STREET
DOVER, NH 03820
B.4791 P.989
ZONING: RM-U

24-126
SCOTT M. ALLARD
17 ROGERS STREET
DOVER, NH 03820
B.1813 P.684
ZONING: RM-U

24-129-1
109 PORTLAND AVENUE CONDOMINIUMS
109 A-D PORTLAND STREET
DOVER, NH 03820
ZONING: G

25-56-1, 2, & 3
TOWNSEND PLACE CONDOMINIUMS
2-8, 30-36, 31-37 TOWNSEND DRIVE
DOVER, NH 03820
ZONING: RM-U

25-45-A-1
ATLANTIC RIDGE CONDOMINIUMS
3-9 MAGNOLIA DRIVE
DOVER, NH 03820
ZONING: RM-U

24-43-B
149 PORTLAND AVENUE LLC
149 PORTLAND AVENUE
DOVER, NH 03820
B.4865 P.955
ZONING: G

25-35
ROBERT H. & PIPER A. MESERVE
2 ELMWOOD AVENUE
DOVER, NH 03820
B.1643 P.597
ZONING: R-12

25-9-A & 9
NORMAN GAGNE TRUSTEE
GAGNE FAMILY REVOCABLE TRUST
2 CROSS STREET
DOVER, NH 03820
B.4327 P.852
ZONING: R-12

25-10-A
PAULA S. & HARLAN H. III SEARLES
18 ATLANTIC AVENUE
DOVER, NH 03820
B.2119 P.453
ZONING: R-12

25-64
JOHN & CECILE SAVAGE TRUSTEES
SAVAGE FAMILY REVOCABLE TRUST
21 ATLANTIC AVENUE
DOVER, NH 03820
B.3790 P.16
ZONING: R-12

25-79
CHRISTIAN F. & CHELSEA A. CARRASQUILLO
2 DANBURY LANE
DOVER, NH 03820
B.4906 P.207
ZONING: R-12

25-78
JAMES H. & ANGELA L. MAXFIELD
4 DANBURY LANE
DOVER, NH 03820-3510
B.3939 P.882
ZONING: R-12

25-77
LYNN SPANG & THOMAS ROWELL TRUSTEES
LYNN SPANG & THOMAS ROWELL REVOCABLE TRUST
6 DANBURY LANE
DOVER, NH 03820-3510
B.4056 P.734
ZONING: R-12

25-67
LEROY W. JONES
88 COCHECO STREET
DOVER, NH 03820
B.3985 P.901
ZONING: R-12

N-23
P.S.Co.-N.H.
PO BOX 330
MANCHESTER, NH 03105-0330
ZONING: R-40

No Tax #
CITY OF DOVER
TOWN LANDING
288 CENTRAL AVENUE
DOVER NH 03820

22-42
CITY OF DOVER
288 CENTRAL AVENUE
DOVER NH 03820
B.4712 P.973
B.4712 P.978
ZONING: CWD

22-1-1
CITY OF DOVER
288 CENTRAL AVENUE
DOVER NH 03820
ZONING: CWD

REFERENCE PLANS

1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H, FEB. 1925, R-6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELEC. CO. DOVER DIV., 12-31-35, B-8122. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC, CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
4. PLAN OF LOT AT 19-23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4-F2-20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7-F4-32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8-F2-13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19-23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A-141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32-117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40-82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51-98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P54-42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI-CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69-42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92-7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129-1 & 130 109 & 119-121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115-8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.

NOTES

1. OWNER OF RECORD MAP 24, LOT 132: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS RM-U.

   DEED REFERENCE(S) TO PARCEL: B.423 P.176, B.423 P.177, B.423 P.179, EXCEPT B.537 P.461 IN THE SCRD.
   AREA = 689,608 SF+/- or 15.8312 Acres +/-.

   OWNER OF RECORD MAP 24, LOT 133: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: 75 COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS CWD.
   DEED REFERENCE TO PARCEL: B.518 P.443, B.330 P.153, B.329 P.484 IN THE SCRD.
   AREA = 58,360 SF+/- or 1.34 Acres +/-.
2. 24-132 INDICATES TAX MAP AND BLOCK NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF AN EXISTING CONDITIONS SURVEY OF LOTS 24-132 & 24-133 LOCATED ON COCHECO AND ROGERS STREETS IN DOVER, NH.
4. CURRENT ZONING DISTRICT: URBAN DENSITY MULTI-RESIDENTIAL DISTRICT (RM-U).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: SEE ORDINANCE. **SEE NOTE.
   ABUTTING STREET SETBACK: SEE ORDINANCE. **SEE NOTE.
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 15 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: THE FRONT SETBACK IN THE RM-U ZONE IS DEFINED IN THE CITY OF DOVER ZONING ORDINANCE AS BEING THE OWNER CALCULATED AVERAGE OF ALL SETBACKS WITHIN THE SAME ZONE, ON THE SAME SIDE OF STREET, TWO HUNDRED FIFTY FEET IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE. DEFINED FRONT SETBACK IS A "BUILD TO LINE" MEANING STRUCTURES MAY BE CONSTRUCTED WITHIN 5 FEET PLUS OR MINUS OF THE AVERAGE.

   CURRENT ZONING DISTRICT: MEDIUM DENSITY RESIDENTIAL (R-12).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   ABUTTING STREET SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 30 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: EXPANSIONS TO, OR RENOVATIONS OF STRUCTURES ON EXISTING LOTS HAVE A 5 FOOT SETBACK.

   CURRENT ZONING DISTRICT: COCHECO WATERFRONT DISTRICT (CWD)
   MINIMUM LOT SIZE: N/A
   MINIMUM LOT COVERAGE: 75 PERCENT
   MINIMUM FRONTAGE: N/A
   PRINCIPAL BUILDING:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   MAXIMUM BUILDING HEIGHT: 55 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE, (ALL JURISDICTIONS) MAP NUMBER: 33017C0330E EFFECTIVE DATE: SEPTEMBER 30, 2015 INDICATES THAT A PORTION OF LOT 24-133 IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE A AND ZONE AE AND THAT LOT 24-132 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
6. HORIZONTAL COORDINATES: PROJECTION: NH STATE PLANE
   HORIZONTAL DATUM: NAD 83/86 (2011)
   VERTICAL DATUM: NAVD 88
7. EASEMENTS, RIGHTS AND RESTRICTIONS:
   - B.931 P.3: CITY OF DOVER SEWER EASEMENT

   EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PARCELS MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. LOT 24-133 CONTAINS A NATURAL WATER BOUNDARY ALONG THE COCHECO RIVER AND THIS BOUNDARY LINE IS SUBJECT TO CHANGE DUE TO NATURAL CAUSES AND MAY OR MAY NOT REPRESENT THE ACTUAL LOCATION OF LIMIT OF TITLE.

SURVEYOR CERTIFICATION

I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "U" (URBAN) AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS ADOPTED 8/23/01, EFFECTIVE 8/24/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

02-16-2023

HANS-GEORG A. MERTSCH, JR., LLS
NH LICENSE NO. 787
FOR TFMORAN, INC.

100 75 50 25 0 100
Graphic Scale
1"=100'

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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TFM
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Traffic Engineers
Land Surveyors
Landscape Architects
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www.tfmoran.com
TFM Proj: 47482.01

CONTRACT SERVICES

REV.	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR

DWG REV | EPN/DESCRIPTION | CONT/PE# | DATE | DRN | CHKD | APPR

EXISTING CONDITIONS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132 & 133
DOVER SUBSTATION
COCHECO & ROGERS STREET
DOVER, NEW HAMPSHIRE

T	#
DRAWN	TNB
ENGINEER	NG
CHECKED	HGM
APPROVED	HGM
DATE	3/9/22

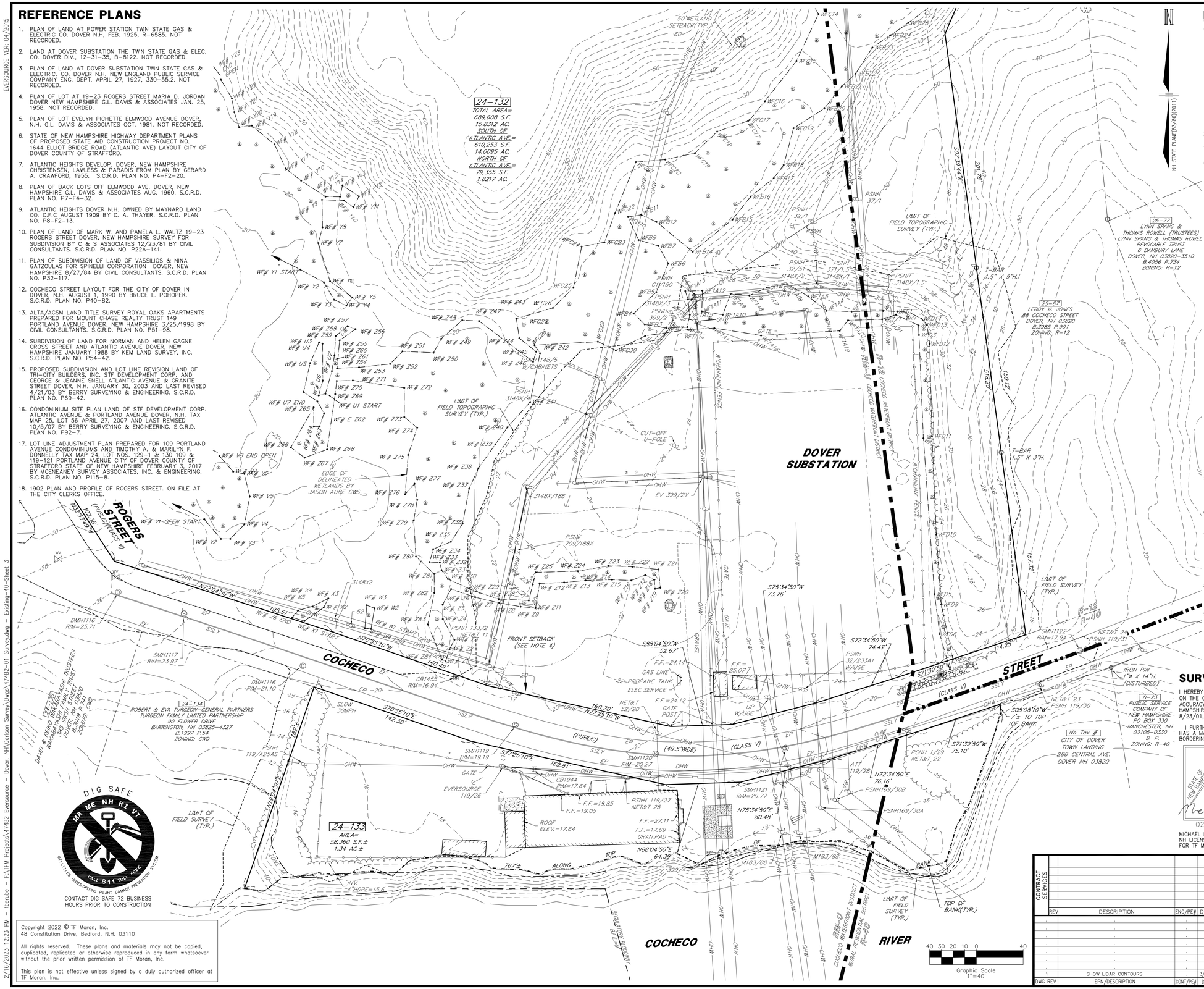
SCALE 1" = 100' | FILE: 47482-01 SURVEY.DWG | IMAGE: | DRAWING NO. SHEET 2 OF 3

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F:\TFM Projects\47482 Eversource - Dover, NH\Carlson Survey\Dwgs\47482-01 Survey.dwg, 2/16/2023 12:44:00 PM

EVERSOURCE VER: 04/2015

REFERENCE PLANS

1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. FEB. 1925, R-6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
4. PLAN OF LOT AT 19-23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4-F2-20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7-F4-32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8-F2-13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19-23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A-141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32-117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40-82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51-98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. 44-42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI-CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69-42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92-7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129-1 & 130 109 & 119-121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115-8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.



NOTES

1. OWNER OF RECORD MAP 24, LOT 132: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS RM-U.

   DEED REFERENCE(S) TO PARCEL: B.423 P.176, B.423 P.177, B.423 P.179, EXCEPT B.537 P.461 IN THE SCRD.
   AREA = 689,608 SF+/- or 15.8312 Acres +/-.

   OWNER OF RECORD MAP 24, LOT 133: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: 75 COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS CWD.
   DEED REFERENCE TO PARCEL: B.518 P.443, B.330 P.153, B.329 P.484 IN THE SCRD.
   AREA = 58,360 SF+/- or 1.34 Acres +/-.
2. 24-132 INDICATES TAX MAP AND BLOCK NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF AN EXISTING CONDITIONS SURVEY OF LOTS 24-132 & 24-133 LOCATED ON COCHECO AND ROGERS STREETS IN DOVER, NH.
4. CURRENT ZONING DISTRICT: URBAN DENSITY MULTI-RESIDENTIAL DISTRICT (RM-U).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: SEE ORDINANCE. **SEE NOTE.
   ABUTTING STREET SETBACK: SEE ORDINANCE. **SEE NOTE.
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 15 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: THE FRONT SETBACK IN THE RM-U ZONE IS DEFINED IN THE CITY OF DOVER ZONING ORDINANCE AS BEING THE OWNER CALCULATED AVERAGE OF ALL SETBACKS WITHIN THE SAME ZONE, ON THE SAME SIDE OF STREET, TWO HUNDRED FIFTY FEET IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE. DEFINED FRONT SETBACK IS A "BUILD TO LINE" MEANING STRUCTURES MAY BE CONSTRUCTED WITHIN 5 FEET PLUS OR MINUS OF THE AVERAGE.

   CURRENT ZONING DISTRICT: MEDIUM DENSITY RESIDENTIAL (R-12).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   ABUTTING STREET SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 30 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: EXPANSIONS TO, OR RENOVATIONS OF STRUCTURES ON EXISTING LOTS HAVE A 5 FOOT SETBACK.

   CURRENT ZONING DISTRICT: COCHECO WATERFRONT DISTRICT (CWD)
   MINIMUM LOT SIZE: N/A
   MINIMUM LOT COVERAGE: 75 PERCENT
   MINIMUM FRONTAGE: N/A
   PRINCIPAL BUILDING:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   MAXIMUM BUILDING HEIGHT: 55 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE, (ALL JURISDICTIONS) MAP NUMBER: 33017C0330E EFFECTIVE DATE: SEPTEMBER 30, 2015 INDICATES THAT A PORTION OF LOT 24-133 IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE A AND ZONE AE AND THAT LOT 24-132 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
6. HORIZONTAL COORDINATES: PROJECTION: NH STATE PLANE
   HORIZONTAL DATUM: NAD 83/86 (2011)
   VERTICAL DATUM: NAVD 88
7. EASEMENTS, RIGHTS AND RESTRICTIONS:

   • B.931 P.3: CITY OF DOVER SEWER EASEMENT

   EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PARCELS MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. LOT 24-133 CONTAINS A NATURAL WATER BOUNDARY ALONG THE COCHECO RIVER AND THIS BOUNDARY LINE IS SUBJECT TO CHANGE DUE TO NATURAL CAUSES AND MAY OR MAY NOT REPRESENT THE ACTUAL LOCATION OF LIMIT OF TITLE.

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "U" (URBAN) AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS ADOPTED 8/23/01, EFFECTIVE 8/24/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 714 MICHAEL R. DAHLBERG SIGNATURE
02-16-2023

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

See Sheet 1 for Vicinity Plan

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj: 47482.01

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	SHOW LIDAR CONTOURS	-	3/16/22	TNB	HGM	-
DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

EXISTING CONDITIONS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132 & 133
DOVER SUBSTATION
COCHECO & ROGERS STREET
DOVER, NEW HAMPSHIRE

T	#
DRAWN: TNB	
ENGINEER: NG	
CHECKED: HGM	
APPROVED: HGM	
DATE: 3/11/22	

SCALE: 1" = 40'
FILE: 47482-01 SURVEY.DWG
IMAGE:
DRAWING NO.: SHEET 3 OF 3

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REFERENCE PLANS

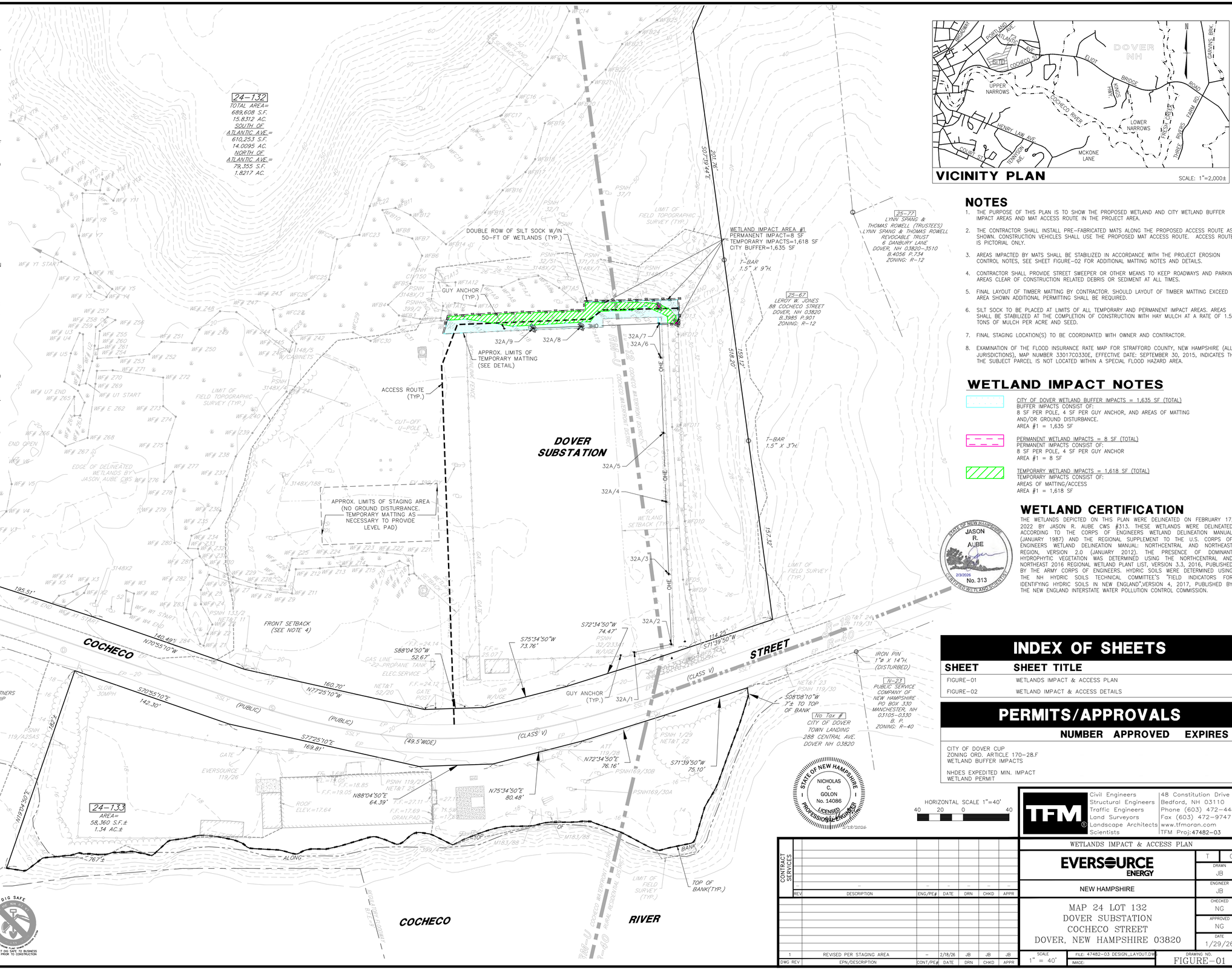
1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H, FEB. 1925, R–6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELEC. CO. DOVER DIV., 12–31–35, B–8122. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330–55.2. NOT RECORDED.
4. PLAN OF LOT AT 19–23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4–F2–20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7–F4–32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8–F2–13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19–23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A–141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32–117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40–82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51–98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P54–42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI–CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69–42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92–7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129–1 & 130 109 & 119–121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115–8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.

N

NH STATE PLANE(83/86)(2011)

EVERSOURCE (VER. 05/2016)

WETLANDS (TEMP)



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED WETLAND AND CITY WETLAND BUFFER IMPACT AREAS AND MAT ACCESS ROUTE IN THE PROJECT AREA.
2. THE CONTRACTOR SHALL INSTALL PRE–FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE AS SHOWN. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE. ACCESS ROUTE IS PICTORIAL ONLY.
3. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE SHEET FIGURE–02 FOR ADDITIONAL MATTING NOTES AND DETAILS.
4. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS AND PARKING AREAS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
5. FINAL LAYOUT OF TIMBER MATTING BY CONTRACTOR. SHOULD LAYOUT OF TIMBER MATTING EXCEED AREA SHOWN ADDITIONAL PERMITTING SHALL BE REQUIRED.
6. SILT SOCK TO BE PLACED AT LIMITS OF ALL TEMPORARY AND PERMANENT IMPACT AREAS. AREAS SHALL BE STABILIZED AT THE COMPLETION OF CONSTRUCTION WITH HAY MULCH AT A RATE OF 1.5 TONS OF MULCH PER ACRE AND SEED.
7. FINAL STAGING LOCATION(S) TO BE COORDINATED WITH OWNER AND CONTRACTOR.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.

WETLAND IMPACT NOTES

CITY OF DOVER WETLAND BUFFER IMPACTS = 1,635 SF (TOTAL)
BUFFER IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR, AND AREAS OF MATTING AND/OR GROUND DISTURBANCE.
AREA #1 = 1,635 SF

PERMANENT WETLAND IMPACTS = 8 SF (TOTAL)
PERMANENT IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR
AREA #1 = 8 SF

TEMPORARY WETLAND IMPACTS = 1,618 SF (TOTAL)
TEMPORARY IMPACTS CONSIST OF:
AREAS OF MATTING/ACCESS
AREA #1 = 1,618 SF

WETLAND CERTIFICATION

THE WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON FEBRUARY 17, 2022 BY JASON R. AUBE CWS #313. THESE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE U.S. CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012). THE PRESENCE OF DOMINANT HYDROPHYTIC VEGETATION WAS DETERMINED USING THE NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST, VERSION 3.3, 2016, PUBLISHED BY THE ARMY CORPS OF ENGINEERS. HYDRIC SOILS WERE DETERMINED USING THE NH HYDRIC SOILS TECHNICAL COMMITTEE'S "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND",VERSION 4, 2017, PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.

STATE OF NEW HAMPSHIRE
JASON R. AUBE
2/3/2026
No. 313
CERTIFIED WETLAND SCIENTIST

INDEX OF SHEETS

SHEET	SHEET TITLE
FIGURE–01	WETLANDS IMPACT & ACCESS PLAN
FIGURE–02	WETLAND IMPACT & ACCESS DETAILS

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
CITY OF DOVER CUP ZONING ORD. ARTICLE 170–28.F WETLAND BUFFER IMPACTS			
NHDES EXPEDITED MIN. IMPACT WETLAND PERMIT			

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
2/18/2026

HORIZONTAL SCALE 1"=40'
40 20 0 40

TFM
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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	REVISED PER STAGING AREA	–	2/18/26	JB	JB	JB

DWG REV | EPN/DESCRIPTION | CONT/PE# | DATE | DRN | CHKD | APPR

WETLANDS IMPACT & ACCESS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	1/29/26
SCALE	1" = 40'
FILE:	47482–03 DESIGN_LAYOUT.DWG
IMAGE:	
DRAWING NO.	FIGURE–01

2/18/2026 4:00 PM Designer - F:\TFM Projects\47482 Eversource - Dover NH\47482–03 - Dover SS Expansion Civil Services\47482–03 CSV\PRODUCTION\47482–03 Design Layout.dwg

EVERSOURCE DEL 05/2016

GENERAL NOTES

1. THE CONTRACTOR SHALL INSTALL PRE-FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE UNLESS OTHERWISE DIRECTED. ACCESS ROUTE IS PICTORIAL ONLY AND NOT INTENDED TO BE A CONSTRUCTED DRIVE.
2. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE DETAILS FOR ADDITIONAL MAT INFORMATION.
3. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
4. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
5. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
8. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF DOVER AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
12. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES NECESSARY TO CONTROL EROSION THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES/EPA STANDARDS. THE DETAILS PROVIDED REPRESENT MINIMUM PERMITTED CONTROLS ONLY AND SHALL BE SUPPLEMENTED BY THE CONTRACTOR AS NECESSARY.
14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
20. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
21. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION).

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. EROSION CONTROLS INDICATED ON THESE PLANS SHALL BE CONSIDERED MINIMUM STANDARDS, ADDITIONAL CONTROLS MAY BE REQUIRED TO ENSURE PERMIT COMPLIANCE AND SHALL BE ADDED AS DEEMED NECESSARY BY THE OWNER/ENGINEER.
2. INSTALLATION OF EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. HAY MULCH OR JUTE MATTING SHALL BE USED FOR TEMPORARY STABILIZATION AS NECESSARY. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
7. SILT SOCK OR SILT FENCE SHALL BE USED FOR CONTAINMENT OF TEMPORARY SOIL STOCK PILES ASSOCIATED WITH POLE INSTALLATION, AS NECESSARY.
8. ALL WORK SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMP) AS OUTLINED IN THE NH DEPT. OF NATURAL AND CULTURAL RESOURCES BEST MANAGEMENT PRACTICES MANUAL, UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES IN NEW HAMPSHIRE, LATEST EDITION.
9. TIMBER MATS SHALL BE REMOVED AT COMPLETION OF WORK AND REMAIN IN PLACE NO LONGER THAN ONE GROWING SEASON.
10. ALL WORK SHALL BE DONE IN COMPLIANCE WITH APPLICABLE CONDITIONS IN ENV-WT 307.
11. DURING CONSTRUCTION, CONTRACTOR SHALL AVOID OR MINIMIZE CONSTRUCTION ACCESS OVER, OR WORK IN OR UPON ORGANIC SOILS AND IN ACCORDANCE WITH ENV-WT 313.03
12. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.

STORM WATER MANAGEMENT NOTES

1. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL TEMPORARILY BE STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 S.F. TALL FESCUE, 0.20 LBS/1,000 S.F. CREEPING RED FESCUE, AND 0.20 LBS/1,000 S.F. BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

2. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   PRE-FABRICATED MATS – WILL BE INSTALLED ALONG THE PROPOSED ACCESS PATH AS NOTED ON THE PLANS.

   SILT SOCK OR SEDIMENT FENCE – WILL BE CONSTRUCTED DOWNSTREAM OF TEMPORARY STOCKPILE AREAS AND WHERE ADDITIONAL SEDIMENT CONTROL IS DEEMED NECESSARY DURING CONSTRUCTION.

   a. THE SILT SOCK SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSPECTED FOR GAPS OR TEARS IN THE FABRIC, WHICH SHALL BE REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES ONE THIRD OF THE HEIGHT OF THE SILT SOCK.

   b. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8 INCHES OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

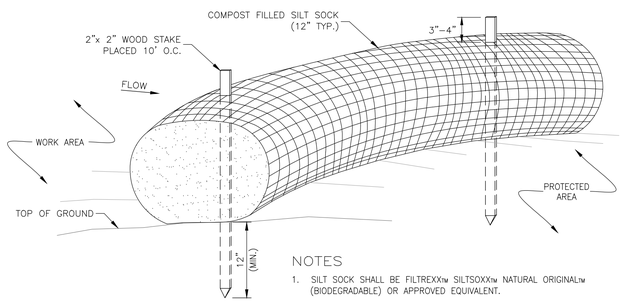
3. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH CITY AND STATE REGULATIONS.

CONSTRUCTION SEQUENCE NOTES

1. INSTALL TEMPORARY EROSION CONTROL FACILITIES.
2. INSTALL PROPOSED POLES AND OVERHEAD SERVICE LINES.
3. ALL SLOPES DISTURBED DURING POLE INSTALLATION SHALL BE STABILIZED IMMEDIATELY. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

   ALL DISTURBED AREAS SHALL BE RESTORED WITH THE FOLLOWING SEED MIX:
   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).
4. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER SIGNIFICANT STORM EVENTS.
5. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED AND TEMPORARY SOIL STOCKPILES FROM POLE INSTALLATIONS HAVE BEEN APPROPRIATELY DISPOSED OF.
6. REMOVE EXISTING UTILITY POLES AND OVERHEAD SERVICE LINES, AS NECESSARY. POLES TO BE FLUSH CUT AND ABANDONED UNLESS DIRECTED OTHERWISE BY OWNER.



NOTES
1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE IN NON-WETLAND AREAS, AS DETERMINED BY THE ENGINEER.

SILT SOCK

FOR POLE INSTALLATION CONTAINMENT — NOT TO SCALE

NH FISH & GAME SPECIES INFORMATION (NHB25-1598)

1. CLIFF SWALLOW (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), AND SPOTTED TURTLE (STATE THREATENED) MAY OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON THIS SHEET.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION.
3. IF CLIFF SWALLOWS ARE OBSERVED TO DISPLAY NESTING BEHAVIOR (FOR EXAMPLE: CALLING, SWOOPING, AGITATED, TERRITORIAL BEHAVIOR), NHFG ENCOURAGES CONTACTING THE WILDLIFE DIVISION BY PHONE AT 603-271-2461 OR BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
4. OBSERVATIONS OF SPOTTED TURTLE SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) OR JOSH MEGYESY (978-578-0802).
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON THIS SHEET.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JUNE 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
7. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
   A. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
9. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
10. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION.
11. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO THE INVASIVE SPECIES.

WATCH FOR RARE TURTLES

NHFG Wildlife Biologist Contacts:
Melissa Winters 603-479-1129 and Josh Megyesy 978-578-0802

- Turtles may be attracted to disturbed ground during nesting season (May 15th – June 30th).
- Turtles are most active from April 15th - October 15th.



Spotted turtle (State Threatened)

Small, mostly aquatic with black or dark brown with yellow spots.

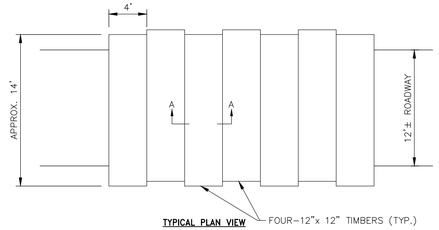
Fairly flat shell compared to Blanding's turtle.

Spots vary in color and number.

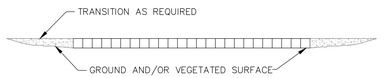
Semi-aquatic - uses both wetland and terrestrial habitats.

Blanding's and spotted turtles are protected by state laws. It is illegal to capture, harass or harm these species, including their nests. Handle ONLY if necessary to move out of harms way. Move to the nearest location in the direction they were moving and contact NHFG. Do not disturb nests.

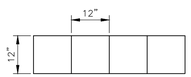
Report sightings in accordance with NHFG permit conditions. Contact NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) and Josh Megyesy 978-578-0802 (group text preferred) if a turtle is observed nesting or a nest site is suspected within the project area. Please report promptly, noting specific location, project site and date – Photographs strongly encouraged to be included with report.



TYPICAL PLAN VIEW — FOUR-12"x 12" TIMBERS (TYP.)



TYPICAL SECTION VIEW



SECTION A-A
TYPICAL MAT SECTION
(BOLTED TOGETHER)

PRE-FABRICATED MAT

NOTES
1. MATS TO BE INSTALLED TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTORS MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF MATS MAY BE USED.

GUIDELINES
1. PLACEMENT OF MATS SHOULD BE IN A LOCATION THAT WOULD MINIMIZE THE LENGTH NEEDED FOR CROSSING (SEE BEST MANAGEMENT PRACTICES MANUAL FOR UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATER BODIES IN NH, MARCH 2019, CHAPTER 3, BMP 8: SWAMP MATS).
2. MATS MAY BE USED TO CROSS SMALL STREAMS PROVIDED THE MAT DOES NOT DISTURB THE BED OR BANKING.
3. WHERE POSSIBLE, MATS SHOULD BE PLACED SO THAT THEY ARE NOT OVER TOPPED WITH WATER AND EQUIPMENT CAN WORK IN THE DRY.
4. MATS SHALL BE REMOVED FROM WETLAND AREAS ONCE THE CROSSING OR MAINTENANCE ACTIVITY IS COMPLETED.

LIMITATIONS
1. MATS SHALL NOT BE PLACED SO THAT THEY RESTRICT THE NATURAL FLOW OF WATER.
2. MATS THAT HAVE BEEN PLACED IN AREAS IF INVASIVE SPECIES SHALL NOT BE USED AGAIN UNTIL THEY HAVE BEEN CLEANED AND INSPECTED.

INSTALLATION
1. INSTALL AND REMOVE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, IF APPLICABLE.
2. EVERY EFFORT SHOULD BE MADE TO MINIMIZE IMPACT TO WETLAND AREAS DURING INSTALLATION, USE AND REMOVAL.

INSPECTIONS

INSPECT AFTER EACH USE:
1. LOOK FOR ANY DEFECTS OR STRUCTURAL PROBLEMS.
2. INSPECT FOR ANY PLANT MATERIAL LEFT ON MATS, REMOVE IMMEDIATELY.

PRE-FABRICATED MAT

NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 2/18/2026

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj:47482-03

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

WETLAND IMPACT & ACCESS DETAILS

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	2/18/26
SCALE	NOT TO SCALE
FILE: 47482-03 COVER & DETAILS.DWG	
IMAGE:	
DRAWING NO.	FIGURE-02

2/18/2026 2:42 PM jbenger F:\TFM Projects\47482 Eversource Dover, NH\47482-03 Dover SS Expansion Civil Services\47482-03 cSW\PRODUCTION\47482-03 Cover & Details.dwg

SECTION 2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 3301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 02/05/2026 13:17:10 UTC
Project Code: 2026-0045676
Project Name: 47482-04 Dover Substation Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 3301-5094
(603) 223-2541

PROJECT SUMMARY

Project Code: 2026-0045676
Project Name: 47482-04 Dover Substation Expansion
Project Type: Distribution Line - New Construction - Above Ground
Project Description: As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate the future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation. In order to facilitate the required electrical connections, two (2) of the new temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.199063550000005,-70.86454504894031,14z



Counties: Strafford County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Olivia Boyer
Address: 170 Commerce Way, Suite 102
City: Portsmouth
State: NH
Zip: 03801
Email oboyer@tfmoran.com
Phone: 6034312222

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 3301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 02/05/2026 13:22:45 UTC
Project code: 2026-0045676
Project Name: 47482-04 Dover Substation Expansion

Federal Nexus: yes
Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Record of project representative's no effect determination for '47482-04 Dover Substation Expansion'

Dear Olivia Boyer:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on February 05, 2026, for '47482-04 Dover Substation Expansion' (here forward, Project). This project has been assigned Project Code 2026-0045676 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination

Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	No effect

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions

occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2026-0045676 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

47482-04 Dover Substation Expansion

2. Description

The following description was provided for the project '47482-04 Dover Substation Expansion':

> As part of a forthcoming expansion of the Eversource Dover Substation, temporary electric infrastructure improvements are required to facilitate the future work. Under the proposed scope of work, the project will be installing a temporary (mobile) transformer within the existing substation yard. The proposed design includes adding a mobile transformer, located in the southeast corner of the existing substation, and connecting to the existing 115kV electric transmission line. The 34.5kV line will exit the transformer via lines supported by eight (8) temporary 60-foot wooden poles along the east fence line and tie directly onto an existing distribution feeder exiting the north end of the substation. In order to facilitate the required electrical connections, two (2) of the new temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. The remainder of the temporary poles and guy wires will be installed from within the substation yard.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.199063550000005,-70.86454504894031,14z



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered

    No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

12. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

    No

13. Will the action cause effects to a bridge?

    Note: Covered bridges should be considered as bridges in this question.

    No

14. Will the action result in effects to a culvert or tunnel at any time of year?

    No

15. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

16. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

17. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

18. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

21. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

23. Will the action include drilling or blasting?

    No

24. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

    No

25. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

    No

26. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

27. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

28. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    No

29. Will the proposed action result in the use of prescribed fire?

    Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

    No

30. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

31. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered
    No

32. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

33. Has a presence/probable absence bat survey targeting the tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    No

34. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?
    (If unsure, answer ""Yes."")

    Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (Tillandsia usneoides), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    Yes

35. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Olivia Boyer
Address: 170 Commerce Way, Suite 102
City: Portsmouth
State: NH
Zip: 03801
Email oboyer@tfmoran.com
Phone: 6034312222

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

US Army Corps of Engineers®
New England District

Appendix B

Regional General Permits (GPs)
Required Information and Corps Secondary Impacts Checklist

In order for the Corps of Engineers to properly evaluate your application, applicants must submit the following information along with the New Hampshire DES Wetlands Bureau application or permit notification forms. Some projects may require more information. For a more comprehensive checklist, go to www.nae.usace.army.mil/regulatory, "Forms/Publications" and then "Application and Plan Guideline Checklist." Check with the Corps at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the State of New Hampshire DES Wetlands Bureau application and Permit by Notification forms.

All Projects:

- Corps application form (ENG Form 4345) as appropriate.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible black and white (no color) plans no larger than 11"x17" with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show mean low water (MLW) and mean high water (MHW) elevations. Show the high tide line (HTL) elevations when fill is involved. In other waters, show ordinary high water (OHW) elevation.
- On each plan, show the following for the project:
- Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. Don't use local datum. In coastal waters this may be mean higher high water (MHHW), mean high water (MHW), mean low water (MLW), mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983-2001.
- Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
- Show project limits with existing and proposed conditions.
- Limits of any Federal Navigation Project in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the Federal Navigation Project;
- Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the ordinary high water in inland waters and below the high tide line in coastal waters.
- Delineation of all waterways and wetlands on the project site,:
- Use Federal delineation methods and include Corps wetland delineation data sheets. See GC 2 and www.nero.noaa.gov/hcd for eelgrass survey guidance.
- GP 3, Moorings, contains eelgrass survey requirements for the placement of moorings.
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact the Corps for guidance.

US Army Corps of Engineers ®
New England District

New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/. The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?		N/A
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	N/A	
2.7 What is the area of the proposed fill in wetlands?	N/A	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	N/A	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index	X	

3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 21?		N/A
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		N/A
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review**)** with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.
`

State of New Hampshire
DEPARTMENT OF NATURAL & CULTURAL RESOURCES
DIVISION OF HISTORICAL RESOURCES

172 Pembroke Road Concord, New Hampshire 03301
Phone: 603-271-3483 Fax: 603-271-3433
TDD Access: Relay NH 1-800-735-2964
nhdhr.dncr.nh.gov

February 18, 2026

Olivia Boyer
170 Commerce Way, Suite 102
Portsmouth, NH 03801

Re: 2026PR00118 - 47482-04 Eversource Dover Substation Expansion

Dear Olivia Boyer,

In accordance with state and federal statutes [New Hampshire RSA 227C:9 and Section 106 of the National Historic Preservation Act (16 U.S.C. 470)] and with federal Advisory Council on Historic Preservation regulations, Protection of Historic Properties (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office (NHSHPO) has reviewed information regarding the above-referenced project.

Based upon this review, no known historic resources appear to be affected by the project. Therefore, it is the opinion of the NHSHPO that the project will result in ***No Historic Properties Affected*** under 36 CFR Part 800.4(d)(1).

No further consultation is required unless there are any changes in approved plans, the need for additional work is identified, or an unanticipated discovery occurs. If further correspondence is required, please refer to the project review number noted above.

If you have any questions, please email Liz Schneible at: elizabeth.a.schneible@dncr.nh.gov

Thank you for the opportunity to comment.

Sincerely,

Nadine Miller

Nadine Miller
Deputy State Historic Preservation Officer
NH Division of Historical Resources

NHB DataCheck Results Letter
NH Natural Heritage Bureau

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110
jbelanger@tfmoran.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Maddie Severance - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 06/13/2025 (valid until 06/13/2026)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: MUNICIPAL POR - Dover, NHDES - Alteration of Terrain Permit, NHDES - Shoreland Standard Permit, NHDES - Standard Dredge & Fill - Major, NHDES - Utility activities in rights-of-way Permit by Notification (PBN), USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB25-1598

Town: Dover
Location: Cocheco St. & 75 Cocheco St.

Project Description: Construction of an approximately 1.9+/- AC substation yard expansion with associated stormwater management and access improvements at the existing Eversource Dover Substation.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments below and the consultation requirements on the following page.

NHB Comments: Please send NHB proposed plans and photos of the proposed impact areas.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project. Please refer to this list when coordinating.

Natural Community	**State[1]**	**Federal**	**Notes**
Low brackish riverbank marsh	--	--	
Plant species	**State[1]**	**Federal**	**Notes**
eastern grasswort (*Lilaeopsis chinensis*)	E	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.
Georgia bulrush (*Scirpus georgianus*)	E	--	Largest threat to this species is loss of habitat.
greater fringed-gentian (*Gentianopsis crinita*)*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
seaside brookweed (*Samolus parviflorus*)	E	--	Occurs on river and streambanks, as well as estuarine and seashore habitats. Threats include direct destruction of the plants and major alterations of their habitat.
Vertebrate species	**State[1]**	**Federal**	**Notes**
Cliff Swallow (*Petrochelidon pyrrhonota*)	T	--	Contact the NH Fish & Game Dept (see above).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see above).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see above).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB DataCheck Results Letter
NH Natural Heritage Bureau

Please note: Effective June 10th, 2025, DataCheck letters will no longer include specific locations of rare species and exemplary natural communities. Changes to the map have been made to reflect this update.

Important: The list of rare species and exemplary natural communities that may be impacted by the project is included. Please refer to that list when coordinating.

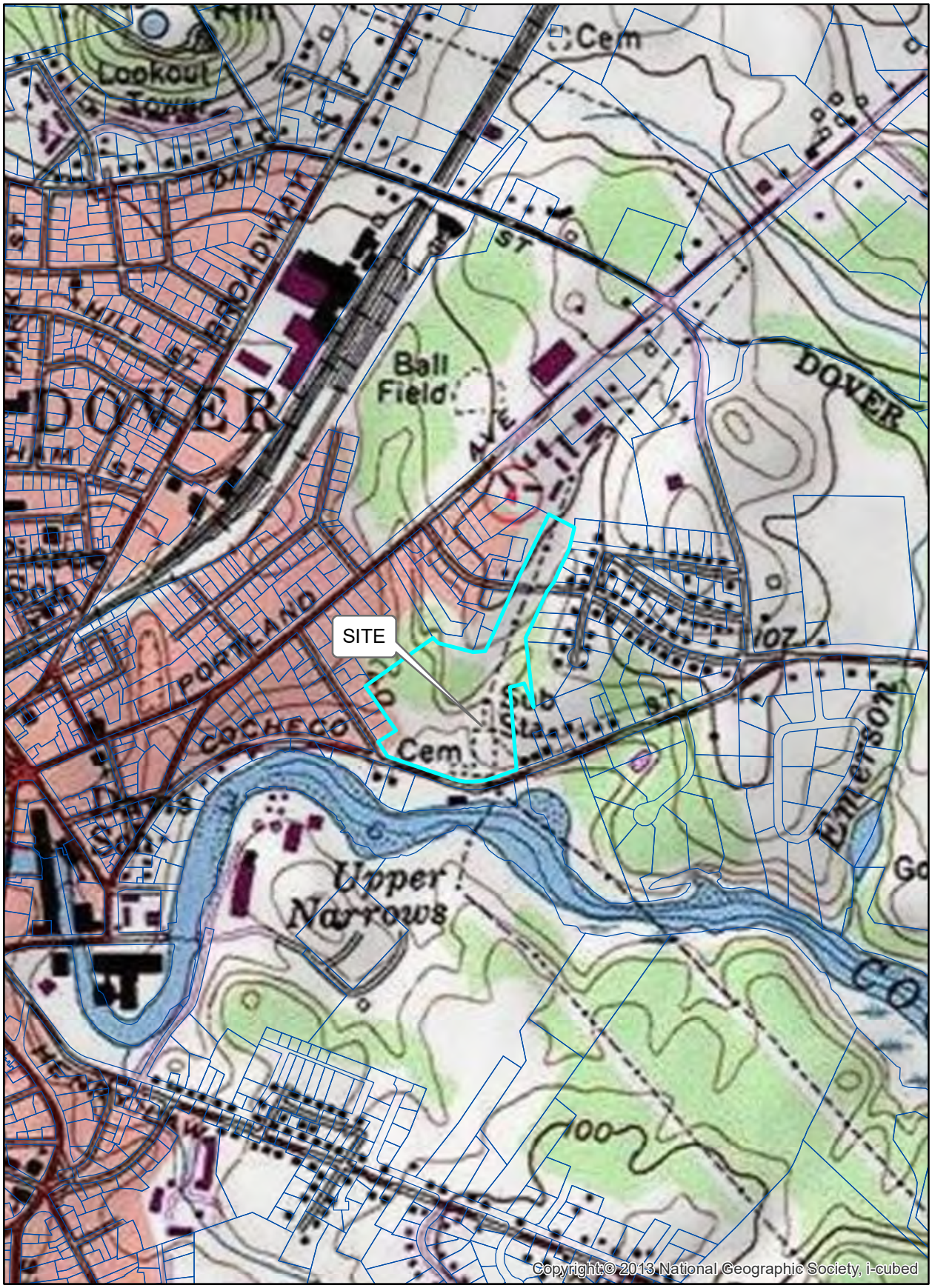
NHB25-1598



SECTION 3

USGS Map (1:10,000)

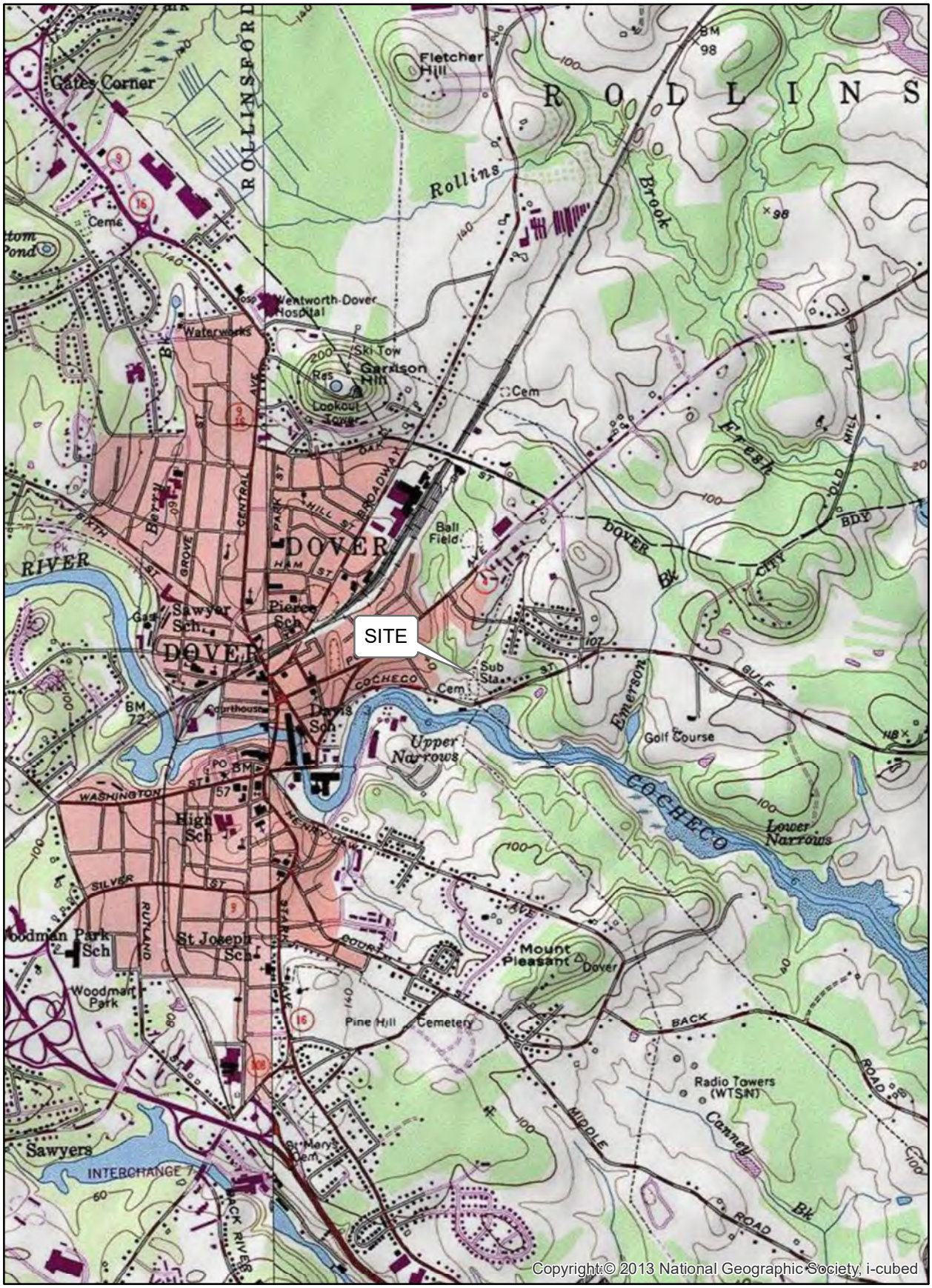
Dover Substation



0 375 750 1,500 Feet

N

USGS Map (1:24,000)
Dover Substation



0 0.25 0.5 1 Miles

N

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

GIS Data Screening

Env-Wt 603.03

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

100 Year Floodplain

Dover Substation



Legend

100 Year Floodplain

0 375 750 1,500 Feet

N

Impaired Waterbodies

Dover Substation



Legend

Impaired Waterbodies

0 375 750 1,500 Feet

N

Prime Wetlands with 100' Buffer

Dover Substation



Legend

Prime Wetlands and 100' Buffer

0 375 750 1,500 Feet

N

Floodplain Wetlands Adjacent to Tier 3 Streams

Dover Substation



Legend

Floodplain Wetlands Adjacent to Tier 3 Streams

0 375 750 1,500 Feet

N

Local Potential Contamination Sources

Dover Substation



Legend

- Local Potential Contamination Sources

0 250 500 1,000 Feet

N

Saltmarsh Areas
Dover Substation



Legend

Saltmarsh

0 250 500 1,000 Feet

N

NH Conservation Lands

Dover Substation



Legend

NH Conservation Lands

0 250 500 1,000 Feet

N

Connect The Coast Wildlife Corridors

Dover Substation



Legend

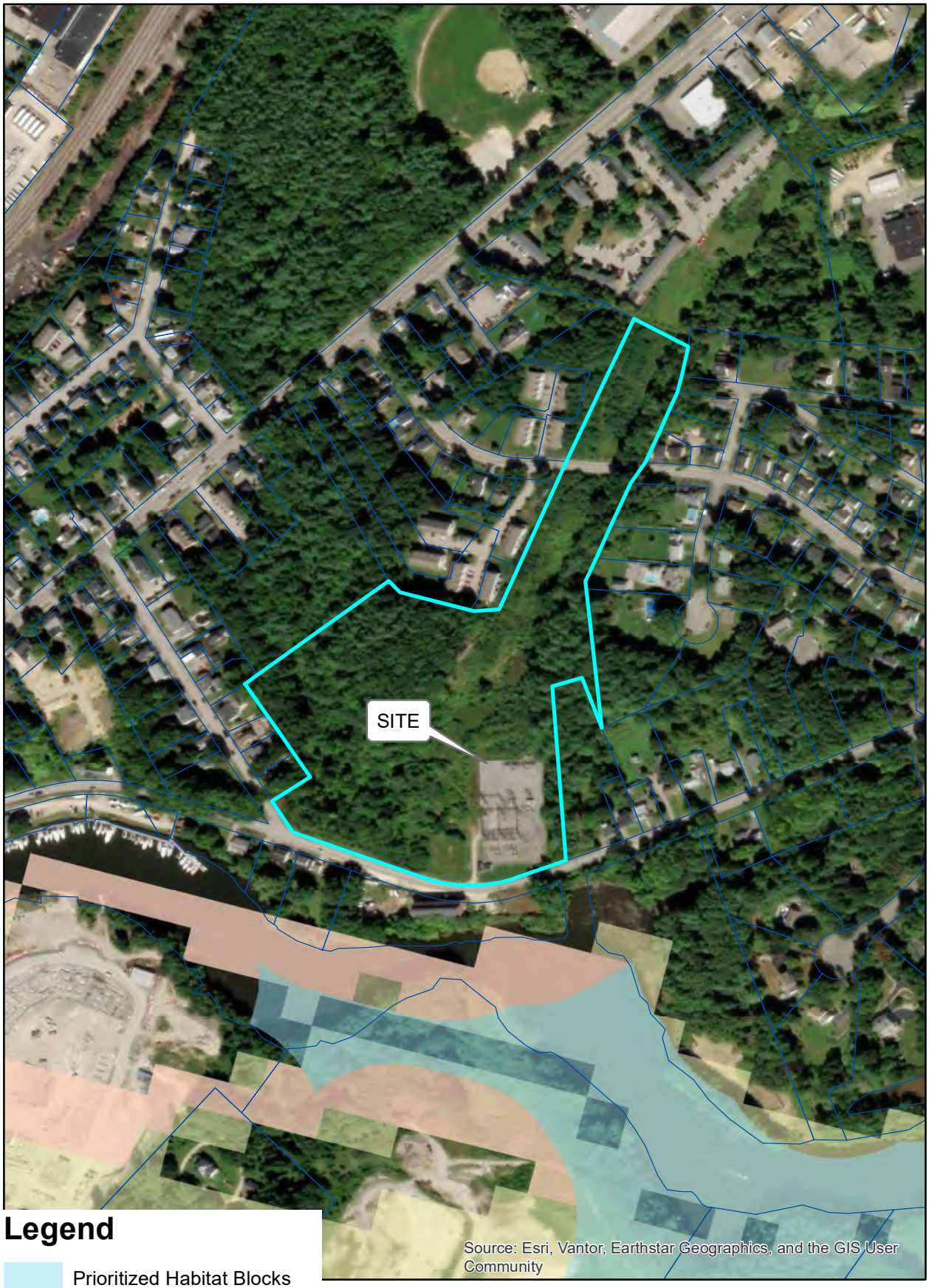
CTC Wildlife Corridors

0 250 500 1,000 Feet

N

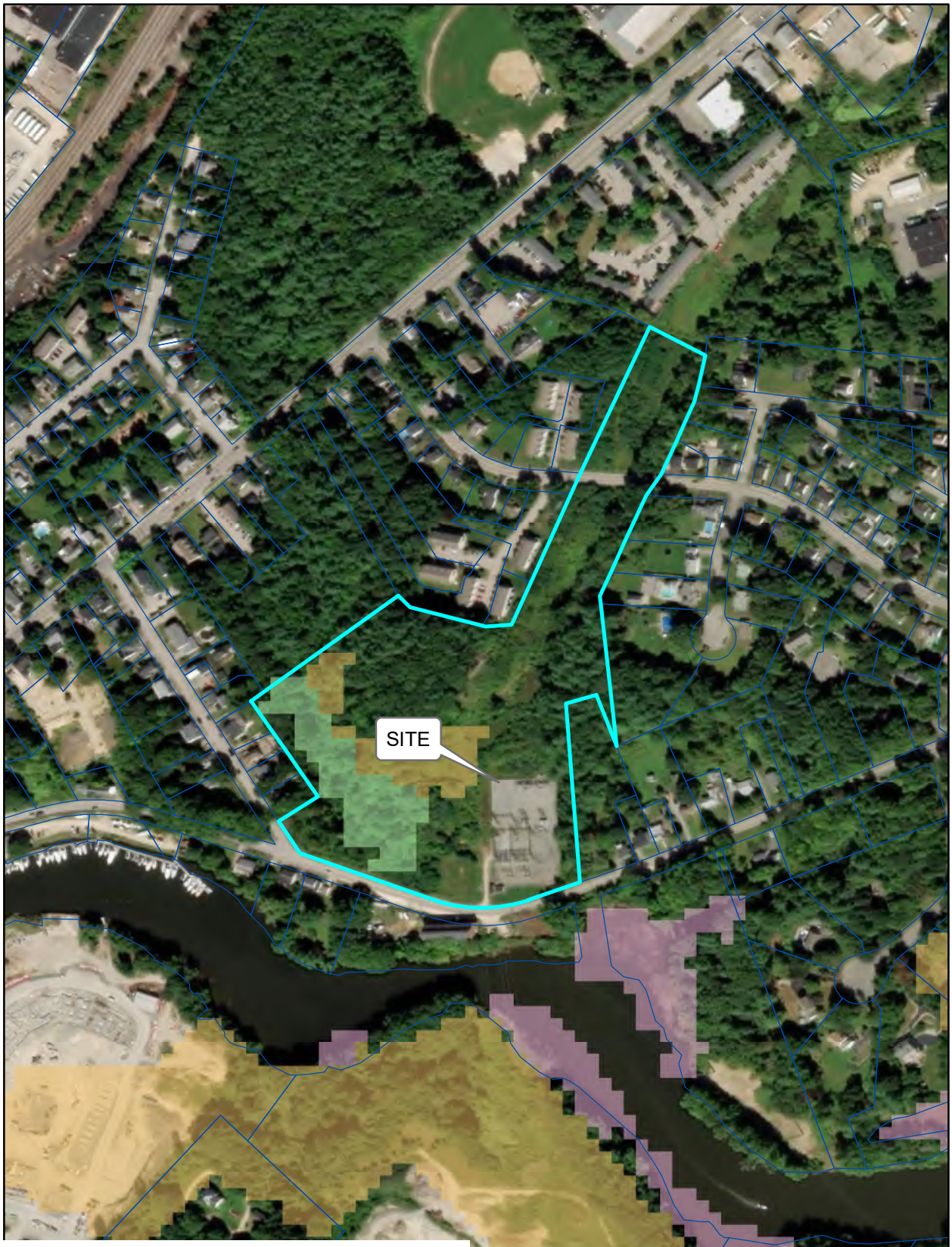
Wildlife Corridors and Prioritized Habitat Blocks

Dover Substation



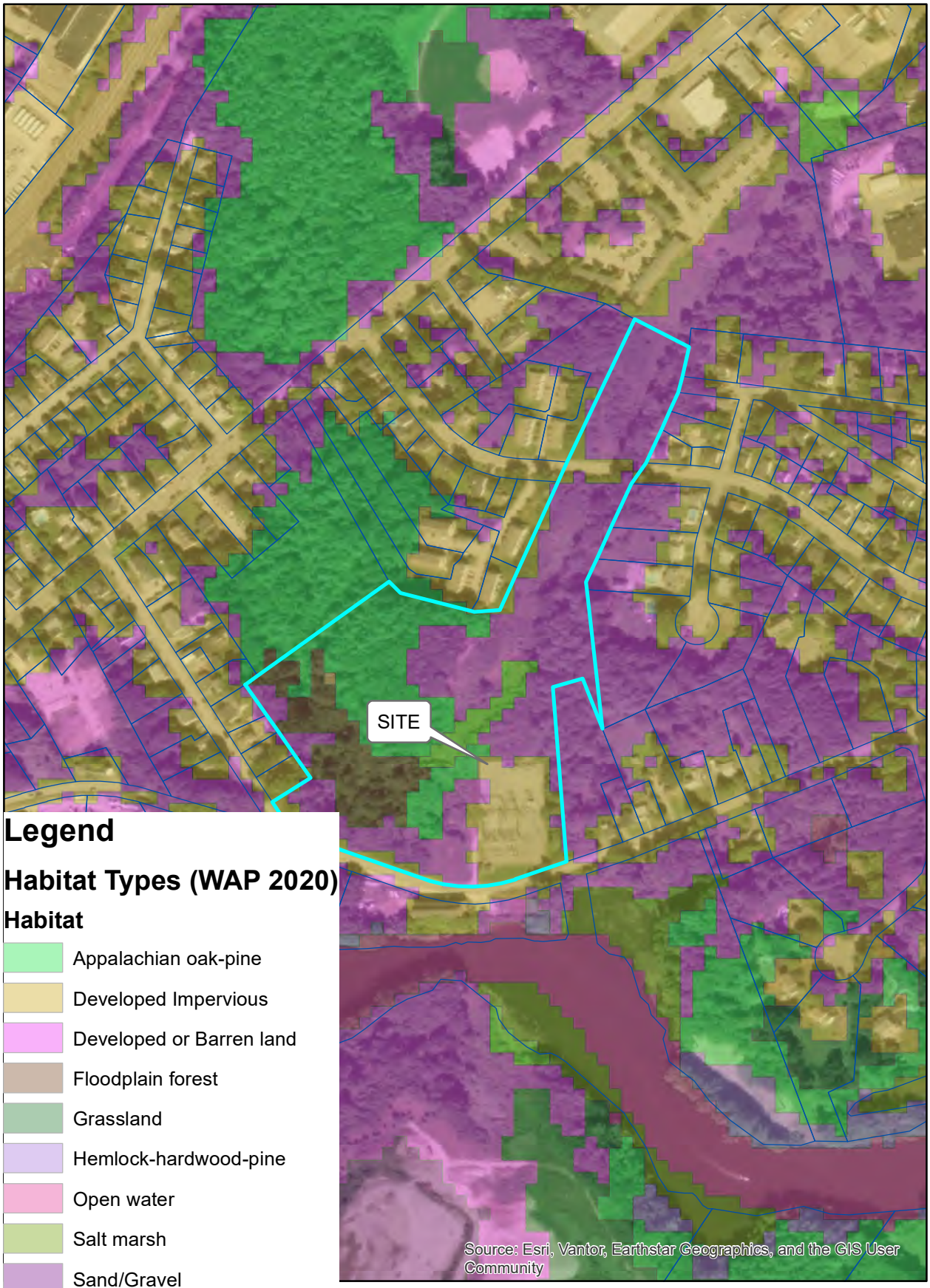
NHFG Wildlife Action Plan (WAP) Habitat Tiers

Dover Substation



NHFG Wildlife Action Plan (WAP) Habitat Types

Dover Substation

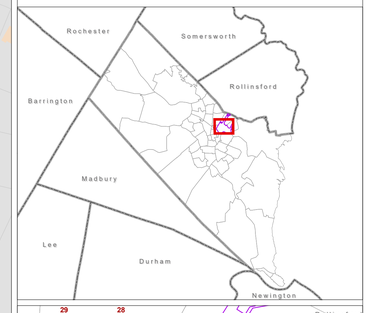


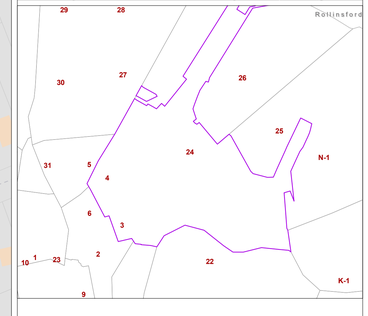
CITY OF DOVER
STAFFORD COUNTY NH
TAX ASSESSORS MAP

Map Page: 24

N

- Parcels
- Parcel on Adjacent Maps
- Buildings
- Rail Road
- Water Body
- Swamp/Marsh
- Streams
- A-20-0-0 Parcel Number
- 0.24 AC Parcel Acreage
- 240 Address Number





200 100 0 200 Feet

1:1,200
1 " = 100 '

This map is for assessment and planning purposes only. It is not intended to be used for description, conveyance, authoritative definition of any legal boundary, or property title. This is not a survey product. Users are encouraged to examine the documentation associated with the data on which this map is based for information related to its accuracy, currentness and limitations.

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AppGeo

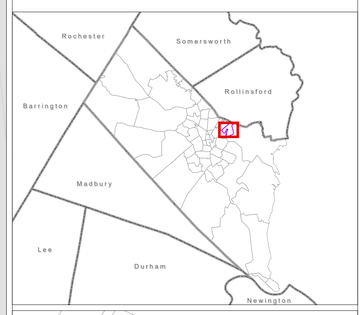
SUBJECT PROPERTY
24-132-0-0
2.46 AC

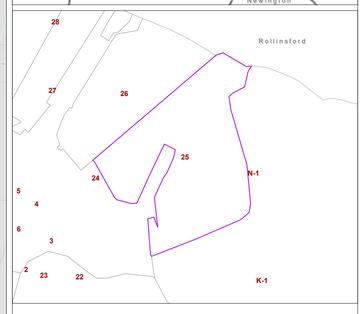
CITY OF DOVER
STAFFORD COUNTY NH
TAX ASSESSORS MAP

Map Page: 25

N

- Parcels
- Parcel on Adjacent Maps
- Buildings
- Rail Road
- Water Body
- Swamp/Marsh
- Streams
- A-20-0-0 Parcel Number
- 0.24 AC Parcel Acreage
- 240 Address Number





200 100 0 200 Feet

1:1,200
1 " = 100 '

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Map Generated: Wednesday, March 21, 2018

AppGeo

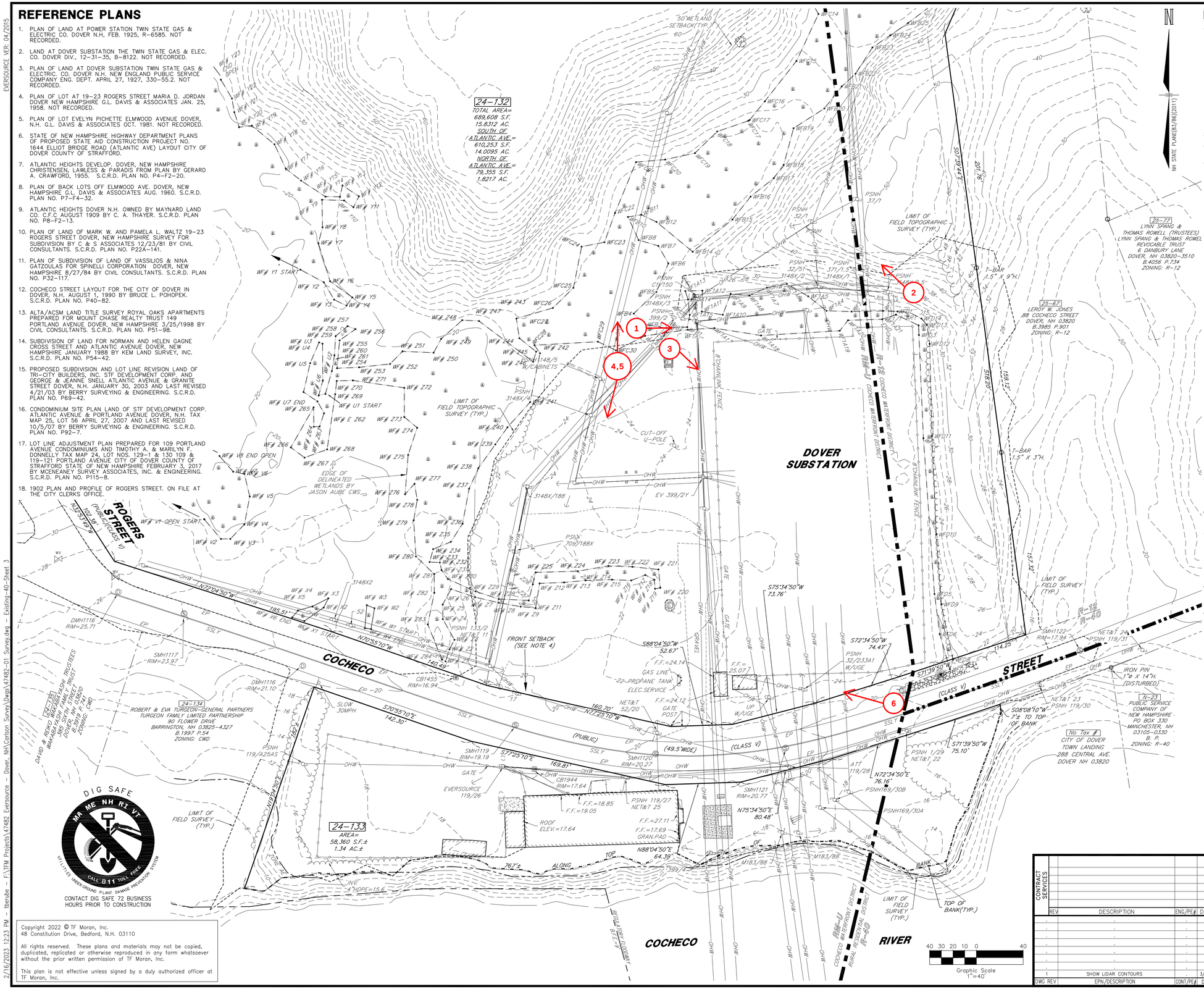
SUBJECT PROPERTY

Rollinsford
Oak St
Old Oak St
Portland Ave
Granite St
Weavery Dr
Forest St
Hancock St
Rogers St
Cocheco St
Atlantic Ave
Townsend Dr
Magnolia Dr
Gross St
Elmwood Ave
Fairview Ave
Danbury Ln
Deer Creek Run
Gulf Rd
Fairway Dr
Gerrys Ln
Emerson Brook
Cocheco River

EVERSOURCE VER: 04/2015

REFERENCE PLANS

1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. FEB. 1925, R-6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
4. PLAN OF LOT AT 19-23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4-F2-20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7-F4-32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8-F2-13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19-23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A-141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32-117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40-82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51-98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P44-42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI-CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69-42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92-7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129-1 & 130 109 & 119-121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115-8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.



NOTES

1. OWNER OF RECORD MAP 24, LOT 132: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS RM-U.

   DEED REFERENCE(S) TO PARCEL: B.423 P.176, B.423 P.177, B.423 P.179, EXCEPT B.537 P.461 IN THE SCRD.
   AREA = 689,608 SF+/- or 15.8312 Acres +/-.

   OWNER OF RECORD MAP 24, LOT 133: PUBLIC SERVICE COMPANY OF NH, D/B/A EVERSOURCE ENERGY
   PO BOX 330 MANCHESTER, NH 03105-0330.
   PROPERTY ADDRESS: 75 COCHECO STREET, DOVER, NH.
   CURRENT ZONING IS CWD.
   DEED REFERENCE TO PARCEL: B.518 P.443, B.330 P.153, B.329 P.484 IN THE SCRD.
   AREA = 58,360 SF+/- or 1.34 Acres +/-.
2. 24-132 INDICATES TAX MAP AND BLOCK NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF AN EXISTING CONDITIONS SURVEY OF LOTS 24-132 & 24-133 LOCATED ON COCHECO AND ROGERS STREETS IN DOVER, NH.
4. CURRENT ZONING DISTRICT: URBAN DENSITY MULTI-RESIDENTIAL DISTRICT (RM-U).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: SEE ORDINANCE. **SEE NOTE.
   ABUTTING STREET SETBACK: SEE ORDINANCE. **SEE NOTE.
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 15 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: THE FRONT SETBACK IN THE RM-U ZONE IS DEFINED IN THE CITY OF DOVER ZONING ORDINANCE AS BEING THE OWNER CALCULATED AVERAGE OF ALL SETBACKS WITHIN THE SAME ZONE, ON THE SAME SIDE OF STREET, TWO HUNDRED FIFTY FEET IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE. DEFINED FRONT SETBACK IS A "BUILD TO LINE" MEANING STRUCTURES MAY BE CONSTRUCTED WITHIN 5 FEET PLUS OR MINUS OF THE AVERAGE.

   CURRENT ZONING DISTRICT: MEDIUM DENSITY RESIDENTIAL (R-12).
   MINIMUM LOT SIZE: 10,000 SQUARE FEET
   MINIMUM LOT COVERAGE: 40 PERCENT
   MINIMUM FRONTAGE: 80 FEET
   PRINCIPAL BUILDING:
   FRONT SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   ABUTTING STREET SETBACK: 15 FOOT MINIMUM; 25' MAXIMUM (SEE ORDINANCE.) **SEE NOTE
   SIDE SETBACK: 15 FEET
   REAR SETBACK: 30 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   ABUT A STREET SETBACK: NO CLOSER THAN PRINCIPAL BUILDING.
   SIDE SETBACK: 10 FEET
   REAR SETBACK: 10 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   **NOTE: EXPANSIONS TO, OR RENOVATIONS OF STRUCTURES ON EXISTING LOTS HAVE A 5 FOOT SETBACK.

   CURRENT ZONING DISTRICT: COCHECO WATERFRONT DISTRICT (CWD)
   MINIMUM LOT SIZE: N/A
   MINIMUM LOT COVERAGE: 75 PERCENT
   MINIMUM FRONTAGE: N/A
   PRINCIPAL BUILDING:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   OUTBUILDING/ACCESSORY USE:
   FRONT SETBACK: 0 FEET
   ABUTTING STREET SETBACK: 0 FEET
   SIDE SETBACK: 0 FEET
   REAR SETBACK: 0 FEET
   MAXIMUM BUILDING HEIGHT: 55 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE, (ALL JURISDICTIONS) MAP NUMBER: 33017C0330E EFFECTIVE DATE: SEPTEMBER 30, 2015 INDICATES THAT A PORTION OF LOT 24-133 IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA, ZONE A AND ZONE AE AND THAT LOT 24-132 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
6. HORIZONTAL COORDINATES: PROJECTION: NH STATE PLANE
   HORIZONTAL DATUM: NAD 83/86 (2011)
   VERTICAL DATUM: NAVD 88
7. EASEMENTS, RIGHTS AND RESTRICTIONS:
   - B.931 P.3: CITY OF DOVER SEWER EASEMENT

   EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PARCELS MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. LOT 24-133 CONTAINS A NATURAL WATER BOUNDARY ALONG THE COCHECO RIVER AND THIS BOUNDARY LINE IS SUBJECT TO CHANGE DUE TO NATURAL CAUSES AND MAY OR MAY NOT REPRESENT THE ACTUAL LOCATION OF LIMIT OF TITLE.

KEY

PHOTO NUMBER, LOCATION, ORIENTATION

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TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj: 47482.01

PHOTO ORIENTATION KEY

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132 & 133
DOVER SUBSTATION
COCHECO & ROGERS STREET
DOVER, NEW HAMPSHIRE

T	#
DRAWN TNB	
ENGINEER NG	
CHECKED HGM	
APPROVED HGM	
DATE 3/11/22	

SCALE 1" = 40'
FILE: 47482-01 SURVEY.DWG
IMAGE:
DRAWING NO. SHEET 3 OF 3

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	SHOW LIDAR CONTOURS	-	3/16/22	TNB	HGM	-
DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

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F:\TFM Projects\47482 Eversource - Dover, NH\Carlson Survey\Dwgs\47482-01 Survey.dwg - Existing-40-Sheet 3

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 1: Looking east at the location of the proposed wetland impacts at the north side of the substation.



Photograph No. 2: Looking northwest at the landscape upslope of the proposed impact area.

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 3: Looking southeast at the existing substation infrastructure.



Photograph No. 4: Looking southwest at the landscape adjacent to the access route.

PHOTO LOG
Eversource Dover Substation
Dover, New Hampshire
Photos Taken: May 30, 2025



Photograph No. 5: Looking north at a wetland near the northwest edge of the site.



Photograph No. 6: Looking northwest from Cocheco Street at the existing substation.

SECTION 4

TFM Since 1968

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Abutters List

Dover Substation
Cocheco Street, Dover, NH
January 30, 2026
47482.04

Assessors Map		Abutter Name	Mailing Address
Map	Lot		
LOCUS	132	PUBLIC SERV CO OF NH	PO BOX 330 MANCHESTER, NH 03105-0330
25	9	GAGNE CAROLYN	2 CROSS ST DOVER, NH 03820
25	64	SAVAGE JOHN & CECILE TRUSTEES, C/O SAVAGE FAMILY REVOCABLE TRUST	21 ATLANTIC AVE DOVER, NH 03820
25	10-A	SEARLES PAULA S, C/O SEARLES HARLAN H III	18 ATLANTIC AV DOVER, NH 03820
25	67	JONES REMI F & CALLY G TRUSTEES, C/O THE JONES FAMILY TRUST AGREEMENT	88 COCHECO ST DOVER, NH 03820
25	70	CHRISTENBURY PARKS C/O CHRISTENBURY SUZANNE	98 COCHECO STREET DOVER, NH 03820
25	78	MAXFIELD JAMES H & MAXFIELD ANGELA L	4 DANBURY LN DOVER, NH 03820-3510
24	124	CLARK ANDREW & CERESA MARIELLE	11 ROGERS ST DOVER, NH 03820
25	79	OPOLSKI EMILY L	2 DANBURY LN DOVER, NH 03820
25	56-2-36	KLAEHN MARKUS & KLAEHN HEATHER	1282 OCEAN BLVD RYE, NH 03870
25	56-1	STF DEVELOPMENT CORP	242 CENTRAL AVE DOVER, NH 03820
25	45-A-1	TRI CITY BUILDERS INC	242 CENTRAL AVE DOVER, NH 03820
25	43-B	149 PORTLAND AVENUE LLC	149 PORTLAND AVE DOVER, NH 03820
25	56-2-32	METHOT LANCE	32 TOWNSEND DR DOVER, NH 03820
25	56-2-34	ROOP JENNIFER LD & ROOP JOSHUA H	34 TOWNSEND DR DOVER, NH 03820
25	56-2	STF DEVELOPMENT CORP	242 CENTRAL AVE DOVER, NH 03820
24	122	MANN STUART S & KATHI D TRUSTEES C/O MANN FAMILY TRUST	149 ROCHESTER HILL RD ROCHESTER, NH 03867

25	56-2-30	CZAJA JESSICA	30 TOWNSEND DR DOVER, NH 03820
24	123	REDTRUCK PROPERTIES LLC	PO BOX 571 EXETER, NH 03833
24	126	CARR RICHARD WALTER	17 ROGERS ST DOVER, NH 03820
25	56-3	STF DEVELOPMENT CORP	242 CENTRAL AVE DOVER, NH 03820
24	129-1	MCBEAU LLC	51 SIXTH STREET DOVER, NH 03820
25	9-A	COLE JUDITH V TRUSTEE C/O COLE JUDITH V REVOCABLE TRUST	5 CROSS ST DOVER, NH 03820-3515
25	35	MESERVE ROBERT H & MESERVE PIPER A	2 ELMWOOD AV DOVER, NH 03820
24	125	CHOUINARD SAMUEL CLINTON	13 ROGERS ST DOVER, NH 03820
25	77	SPANG LYNN & ROWELL THOMAS TRUSTEES C/O SPANG LYNN AND	6 DANBURY LN DOVER, NH 03820-3510
Environmental / Wetlands Scientist		TFMoran, Inc.	170 Commerce Way - Suite 102 Portsmouth, NH 03801

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

NEW HAMPSHIRE 200

ABUTTER NOTIFICATION FOR NHDES WETLAND PERMIT APPLICATION

VIA CERTIFIED MAIL

January 30, 2026

Abutter Name
Street
Town/City, State, Zip Code

Re: NHDES Wetland Permit Application
Dover Substation - Cocheco St, Dover, NH 03820
Project #47482.04

Dear Abutter:

This letter is to inform you that a *Wetland Permit Application* will be filed with the NH Department of Environmental Services (NHDES) for impacts proposed at the above referenced property. In accordance with RSA 482-A:3(e)(1), we are required to notify you about this permit application by certified mail.

Once the permit application is filed, the complete *Wetland Permit Application*, including the design plans that depict the impacts associated with the proposed project, will be available for viewing at the City of Dover Clerk's Office.

Should you have any questions regarding this matter or require additional information, please do not hesitate to contact me directly at (603) 431-2222, anytime between 8:00 AM and 5:00 PM.

Sincerely,

TFMoran, Inc.

Olivia Boyer
Environmental Permitting Specialist

cc: NHDES Wetlands Bureau

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GAGNE CAROLYN
2 CROSS ST
DOVER, NH 03820
Project # 47482.02

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SAVAGE JOHN & CECILE TRUSTEES, C/O
SAVAGE FAMILY REVOCABLE TRUST
21 ATLANTIC AVE
DOVER, NH 03820
Project # 47482.04

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CHOUINARD SAMUEL CLINTON
13 ROGERS ST
DOVER, NH 03820
Project # 47482.04

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SPANG LYNN & ROWELL THOMAS
TRUSTEES C/O SPANG LYNN AND ROWELL
THOMAS REVOCABLE T
6 DANBURY LN
DOVER, NH 03820-3510
Project # 47482.04

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COLE JUDITH V TRUSTEE C/O COLE
JUDITH V REVOCABLE TRUST
5 CROSS ST
DOVER, NH 03820-3515
Project # 47482.04

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MESERVE ROBERT H & MESERVE
PIPER A
2 ELMWOOD AV
DOVER, NH 03820
Project # 47482.04

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242 CENTRAL AVE
DOVER, NH 03820
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MCBEAU LLC
51 SIXTH STREET
DOVER, NH 03820
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CARR RICHARD WALTER
17 ROGERS ST
DOVER, NH 03820
Project # 47482.04

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MANN STUART S & KATHI D TRUSTEES
C/O MANN FAMILY TRUST
149 ROCHESTER HILL RD
ROCHESTER, NH 03867
Project # 47482.04

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SEARLES PAULA S, C/O SEARLES
HARLAN H III
18 ATLANTIC AV
DOVER, NH 03820
Projecy # 47482.04

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OPOLSKI EMILY L
2 DANBURY LN
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KLAEHN MARKUS & KLAEHN HEATHER
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MAXFIELD JAMES H & MAXFIELD
ANGELA L
4 DANBURY LN
DOVER, NH 03820
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CLARK ANDREW & CERESA MARIELLE
11 ROGERS ST
DOVER, NH 03820
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JONES REMI F & CALLY G TRUSTEES, C/O
THE JONES FAMILY TRUST AGREEMENT
88 COCHECO ST
DOVER, NH 03820
Project # 47482.04

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CHRISTENBURY PARKS C/O
CHRISTENBURY SUZANNE
98 COCHECO STREET
DOVER, NH 03820
Project # 47482.04

January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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DOVER, NH 03820
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REFERENCE PLANS

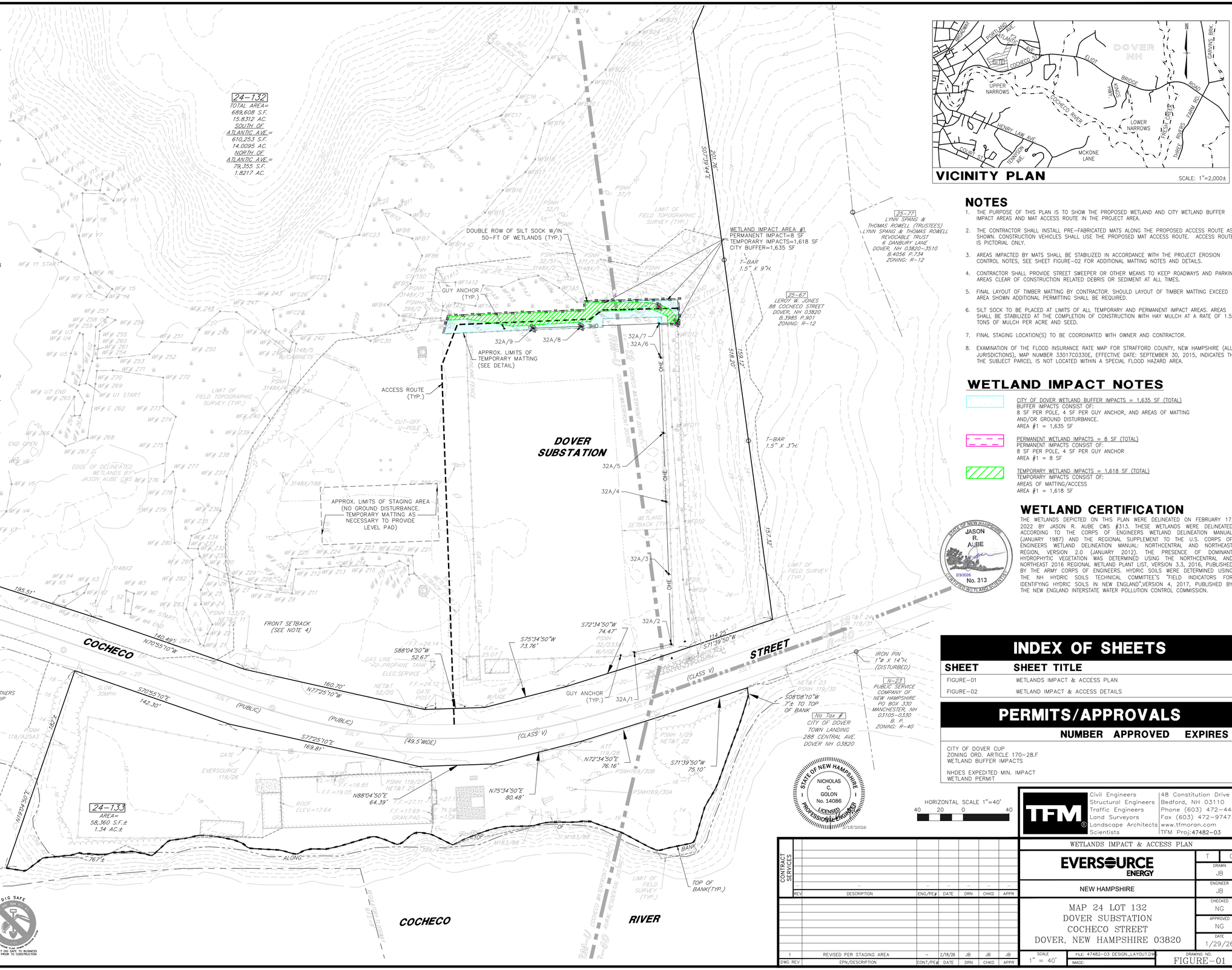
1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H, FEB. 1925, R–6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELEC. CO. DOVER DIV., 12–31–35, B–8122. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330–55.2. NOT RECORDED.
4. PLAN OF LOT AT 19–23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4–F2–20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7–F4–32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8–F2–13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19–23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A–141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32–117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40–82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51–98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P54–42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI–CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69–42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92–7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129–1 & 130 109 & 119–121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115–8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.

N

NH STATE PLANE(83/86)(2011)

EVERSOURCE (VER. 05/2016)

WETLANDS (TEMP)



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED WETLAND AND CITY WETLAND BUFFER IMPACT AREAS AND MAT ACCESS ROUTE IN THE PROJECT AREA.
2. THE CONTRACTOR SHALL INSTALL PRE–FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE AS SHOWN. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE. ACCESS ROUTE IS PICTORIAL ONLY.
3. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE SHEET FIGURE–02 FOR ADDITIONAL MATTING NOTES AND DETAILS.
4. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS AND PARKING AREAS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
5. FINAL LAYOUT OF TIMBER MATTING BY CONTRACTOR. SHOULD LAYOUT OF TIMBER MATTING EXCEED AREA SHOWN ADDITIONAL PERMITTING SHALL BE REQUIRED.
6. SILT SOCK TO BE PLACED AT LIMITS OF ALL TEMPORARY AND PERMANENT IMPACT AREAS. AREAS SHALL BE STABILIZED AT THE COMPLETION OF CONSTRUCTION WITH HAY MULCH AT A RATE OF 1.5 TONS OF MULCH PER ACRE AND SEED.
7. FINAL STAGING LOCATION(S) TO BE COORDINATED WITH OWNER AND CONTRACTOR.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.

WETLAND IMPACT NOTES

CITY OF DOVER WETLAND BUFFER IMPACTS = 1,635 SF (TOTAL)
BUFFER IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR, AND AREAS OF MATTING AND/OR GROUND DISTURBANCE.
AREA #1 = 1,635 SF

PERMANENT WETLAND IMPACTS = 8 SF (TOTAL)
PERMANENT IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR
AREA #1 = 8 SF

TEMPORARY WETLAND IMPACTS = 1,618 SF (TOTAL)
TEMPORARY IMPACTS CONSIST OF:
AREAS OF MATTING/ACCESS
AREA #1 = 1,618 SF

WETLAND CERTIFICATION

THE WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON FEBRUARY 17, 2022 BY JASON R. AUBE CWS #313. THESE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE U.S. CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012). THE PRESENCE OF DOMINANT HYDROPHYTIC VEGETATION WAS DETERMINED USING THE NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST, VERSION 3.3, 2016, PUBLISHED BY THE ARMY CORPS OF ENGINEERS. HYDRIC SOILS WERE DETERMINED USING THE NH HYDRIC SOILS TECHNICAL COMMITTEE'S "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND",VERSION 4, 2017, PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.

STATE OF NEW HAMPSHIRE
JASON R. AUBE
2/3/2026
No. 313
CERTIFIED WETLAND SCIENTIST

INDEX OF SHEETS

SHEET	SHEET TITLE
FIGURE–01	WETLANDS IMPACT & ACCESS PLAN
FIGURE–02	WETLAND IMPACT & ACCESS DETAILS

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
CITY OF DOVER CUP ZONING ORD. ARTICLE 170–28.F WETLAND BUFFER IMPACTS			
NHDES EXPEDITED MIN. IMPACT WETLAND PERMIT			

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
2/18/2026

HORIZONTAL SCALE 1"=40'
40 20 0 40

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com
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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	REVISED PER STAGING AREA	–	2/18/26	JB	JB	JB

DWG REV | EPN/DESCRIPTION | CONT/PE# | DATE | DRN | CHKD | APPR

WETLANDS IMPACT & ACCESS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	1/29/26
SCALE	1" = 40'
FILE:	47482–03 DESIGN_LAYOUT.DWG
IMAGE:	
DRAWING NO.	FIGURE–01

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EVERSOURCE DEL 05/2016

GENERAL NOTES

1. THE CONTRACTOR SHALL INSTALL PRE-FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE UNLESS OTHERWISE DIRECTED. ACCESS ROUTE IS PICTORIAL ONLY AND NOT INTENDED TO BE A CONSTRUCTED DRIVE.
2. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE DETAILS FOR ADDITIONAL MAT INFORMATION.
3. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
4. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
5. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
8. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF DOVER AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
12. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES NECESSARY TO CONTROL EROSION THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES/EPA STANDARDS. THE DETAILS PROVIDED REPRESENT MINIMUM PERMITTED CONTROLS ONLY AND SHALL BE SUPPLEMENTED BY THE CONTRACTOR AS NECESSARY.
14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
20. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
21. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION).

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. EROSION CONTROLS INDICATED ON THESE PLANS SHALL BE CONSIDERED MINIMUM STANDARDS, ADDITIONAL CONTROLS MAY BE REQUIRED TO ENSURE PERMIT COMPLIANCE AND SHALL BE ADDED AS DEEMED NECESSARY BY THE OWNER/ENGINEER.
2. INSTALLATION OF EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. HAY MULCH OR JUTE MATTING SHALL BE USED FOR TEMPORARY STABILIZATION AS NECESSARY. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
7. SILT SOCK OR SILT FENCE SHALL BE USED FOR CONTAINMENT OF TEMPORARY SOIL STOCK PILES ASSOCIATED WITH POLE INSTALLATION, AS NECESSARY.
8. ALL WORK SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMP) AS OUTLINED IN THE NH DEPT. OF NATURAL AND CULTURAL RESOURCES BEST MANAGEMENT PRACTICES MANUAL, UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES IN NEW HAMPSHIRE, LATEST EDITION.
9. TIMBER MATS SHALL BE REMOVED AT COMPLETION OF WORK AND REMAIN IN PLACE NO LONGER THAN ONE GROWING SEASON.
10. ALL WORK SHALL BE DONE IN COMPLIANCE WITH APPLICABLE CONDITIONS IN ENV-WT 307.
11. DURING CONSTRUCTION, CONTRACTOR SHALL AVOID OR MINIMIZE CONSTRUCTION ACCESS OVER, OR WORK IN OR UPON ORGANIC SOILS AND IN ACCORDANCE WITH ENV-WT 313.03
12. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.

STORM WATER MANAGEMENT NOTES

1. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL TEMPORARILY BE STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 S.F. TALL FESCUE, 0.20 LBS/1,000 S.F. CREEPING RED FESCUE, AND 0.20 LBS/1,000 S.F. BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

2. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   PRE-FABRICATED MATS – WILL BE INSTALLED ALONG THE PROPOSED ACCESS PATH AS NOTED ON THE PLANS.

   SILT SOCK OR SEDIMENT FENCE – WILL BE CONSTRUCTED DOWNSTREAM OF TEMPORARY STOCKPILE AREAS AND WHERE ADDITIONAL SEDIMENT CONTROL IS DEEMED NECESSARY DURING CONSTRUCTION.

   a. THE SILT SOCK SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSPECTED FOR GAPS OR TEARS IN THE FABRIC, WHICH SHALL BE REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES ONE THIRD OF THE HEIGHT OF THE SILT SOCK.

   b. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8 INCHES OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

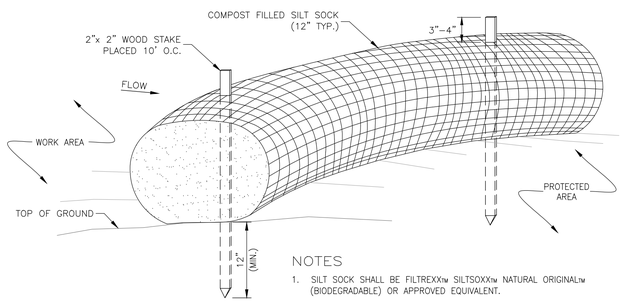
3. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH CITY AND STATE REGULATIONS.

CONSTRUCTION SEQUENCE NOTES

1. INSTALL TEMPORARY EROSION CONTROL FACILITIES.
2. INSTALL PROPOSED POLES AND OVERHEAD SERVICE LINES.
3. ALL SLOPES DISTURBED DURING POLE INSTALLATION SHALL BE STABILIZED IMMEDIATELY. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

   ALL DISTURBED AREAS SHALL BE RESTORED WITH THE FOLLOWING SEED MIX:
   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).
4. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER SIGNIFICANT STORM EVENTS.
5. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED AND TEMPORARY SOIL STOCKPILES FROM POLE INSTALLATIONS HAVE BEEN APPROPRIATELY DISPOSED OF.
6. REMOVE EXISTING UTILITY POLES AND OVERHEAD SERVICE LINES, AS NECESSARY. POLES TO BE FLUSH CUT AND ABANDONED UNLESS DIRECTED OTHERWISE BY OWNER.



NOTES
1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE IN NON-WETLAND AREAS, AS DETERMINED BY THE ENGINEER.

SILT SOCK

FOR POLE INSTALLATION CONTAINMENT — NOT TO SCALE

NH FISH & GAME SPECIES INFORMATION (NHB25-1598)

1. CLIFF SWALLOW (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), AND SPOTTED TURTLE (STATE THREATENED) MAY OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON THIS SHEET.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION.
3. IF CLIFF SWALLOWS ARE OBSERVED TO DISPLAY NESTING BEHAVIOR (FOR EXAMPLE: CALLING, SWOOPING, AGITATED, TERRITORIAL BEHAVIOR), NHFG ENCOURAGES CONTACTING THE WILDLIFE DIVISION BY PHONE AT 603-271-2461 OR BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
4. OBSERVATIONS OF SPOTTED TURTLE SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) OR JOSH MEGYESY (978-578-0802).
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON THIS SHEET.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JUNE 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
7. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
   A. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
9. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
10. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION.
11. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO THE INVASIVE SPECIES.

WATCH FOR RARE TURTLES

NHFG Wildlife Biologist Contacts:
Melissa Winters 603-479-1129 and Josh Megyesy 978-578-0802

- Turtles may be attracted to disturbed ground during nesting season (May 15th – June 30th).
- Turtles are most active from April 15th - October 15th.



Spotted turtle (State Threatened)

Small, mostly aquatic with black or dark brown with yellow spots.

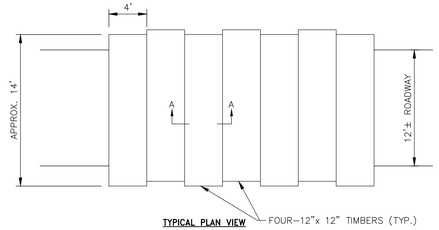
Fairly flat shell compared to Blanding's turtle.

Spots vary in color and number.

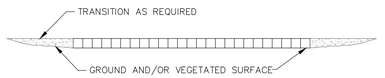
Semi-aquatic - uses both wetland and terrestrial habitats.

Blanding's and spotted turtles are protected by state laws. It is illegal to capture, harass or harm these species, including their nests. Handle ONLY if necessary to move out of harms way. Move to the nearest location in the direction they were moving and contact NHFG. Do not disturb nests.

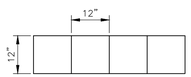
Report sightings in accordance with NHFG permit conditions. Contact NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) and Josh Megyesy 978-578-0802 (group text preferred) if a turtle is observed nesting or a nest site is suspected within the project area. Please report promptly, noting specific location, project site and date – Photographs strongly encouraged to be included with report.



TYPICAL PLAN VIEW — FOUR-12"x 12" TIMBERS (TYP.)



TYPICAL SECTION VIEW



SECTION A-A
TYPICAL MAT SECTION
(BOLTED TOGETHER)

PRE-FABRICATED MAT

NOTES
1. MATS TO BE INSTALLED TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTORS MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF MATS MAY BE USED.

GUIDELINES
1. PLACEMENT OF MATS SHOULD BE IN A LOCATION THAT WOULD MINIMIZE THE LENGTH NEEDED FOR CROSSING (SEE BEST MANAGEMENT PRACTICES MANUAL FOR UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATER BODIES IN NH, MARCH 2019, CHAPTER 3, BMP 8: SWAMP MATS).
2. MATS MAY BE USED TO CROSS SMALL STREAMS PROVIDED THE MAT DOES NOT DISTURB THE BED OR BANKING.
3. WHERE POSSIBLE, MATS SHOULD BE PLACED SO THAT THEY ARE NOT OVER TOPPED WITH WATER AND EQUIPMENT CAN WORK IN THE DRY.
4. MATS SHALL BE REMOVED FROM WETLAND AREAS ONCE THE CROSSING OR MAINTENANCE ACTIVITY IS COMPLETED.

LIMITATIONS
1. MATS SHALL NOT BE PLACED SO THAT THEY RESTRICT THE NATURAL FLOW OF WATER.
2. MATS THAT HAVE BEEN PLACED IN AREAS IF INVASIVE SPECIES SHALL NOT BE USED AGAIN UNTIL THEY HAVE BEEN CLEANED AND INSPECTED.

INSTALLATION
1. INSTALL AND REMOVE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, IF APPLICABLE.
2. EVERY EFFORT SHOULD BE MADE TO MINIMIZE IMPACT TO WETLAND AREAS DURING INSTALLATION, USE AND REMOVAL.

INSPECTIONS

INSPECT AFTER EACH USE:
1. LOOK FOR ANY DEFECTS OR STRUCTURAL PROBLEMS.
2. INSPECT FOR ANY PLANT MATERIAL LEFT ON MATS, REMOVE IMMEDIATELY.

PRE-FABRICATED MAT

NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 2/18/2026

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj:47482-03

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

WETLAND IMPACT & ACCESS DETAILS

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	2/18/26
SCALE	NOT TO SCALE
FILE: 47482-03 COVER & DETAILS.DWG	
IMAGE:	
DRAWING NO.	FIGURE-02

2/18/2026 2:42 PM jbenger F:\TFM Projects\47482 Eversource Dover, NH\47482-03 Dover SS Expansion Civil Services\47482-03 cSW\PRODUCTION\47482-03 Cover & Details.dwg

The State of New Hampshire

DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

March 6, 2026
Olivia Boyer
TFMoran
170 Commerce Way, Suite 102
Portsmouth, NH 03801

RE: Plant and Wildlife Conservation Measures
NHB25-1598
Cocheco Street, Dover, NH

Dear Olivia Boyer:

The New Hampshire Department of Environmental Services Ecological Review Section reviewed materials submitted for ecological review under NHB25-1598. The project proposes to install a temporary (mobile) transformer within the existing substation yard. In order to facilitate the required electrical connections, two (2) temporary poles, and three (3) of the associated guy wires will be installed from outside of the existing substation fence, located on the northern side of the substation, requiring exterior access for installation. A temporary staging area is to be located just west of the substation with an access route starting at the Cocheco St. entrance and terminating at the northeast corner of the substation.

The conservation measures included in this letter are based on the species screening completed June 13, 2025, and the materials provided for ecological review on February 17, 2026. Materials provided include site plans dated January 29, 2026, prepared by TFMoran.

Wildlife and critical habitat

The following conservation measures are recommended by the Ecological Review Section to avoid and minimize impacts to cliff swallow, New England cottontail, and Spotted turtle. These measures will need to be provided as written below along with the associated materials to NHDES Wetlands Permit Reviewers to comply with **NHDES Expedited Minimum Impact Wetlands Permit** administrative rules.

NHB25-1598 wildlife conservation measures:

1. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG biologist contact information. Please refer to the NHFG website for updated Protected Species Flyers.

a. Protected species information (e.g. identification, observation and reporting of observations, when to contact the NHFG biologists immediately) should be communicated during meetings prior to work commencement throughout the construction phase of the project. *See cover sheet or sheet immediately proceeding. Include flyers on plan sheet set.*

2. Shrub cover shall not be removed beyond the limits of the construction area. Staging of equipment/material and vehicle parking shall not occur in shrub cover or wetlands.

3. For project activities occurring during the active season for turtles (between April 15th and October 15th), searches and sweeps shall be conducted by a trained individual(s) immediately before the start of work daily, ahead of equipment movement, and prior to placing matting. Trained individuals in this case are environmental professionals who have gone through training specific to utility projects for turtles.

4. All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps should not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches.

5. In the event a protected species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with and implementation of corrective actions recommended by the Ecological Review Section unless the protected species is discovered within the active work zone in direct harm from project activities. If this situation occurs:
   a. Site operators shall be allowed to relocate wildlife encountered.
   b. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading.
   c. NHFG biologists shall be contacted immediately if this action occurs.

6. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation. Photographs of the observed species and nearby elements of habitat or areas of land disturbance should be provided to NHFG in digital format at the above email address for verification, as feasible.

7. The Ecological Review Section, its employees and authorized agents, shall have access to the property during the term of the permit.

The following additional conservation measures are recommended to comply with RSA 212-A and are not required for permitting.

1. Turtles may be attracted to disturbed ground during nesting season (May 15th through July 15th). Nesting areas may include rights-of-way that are not hard-packed gravel and other sandy/gravel work areas. If a nest is observed or suspected, operators shall contact NHFG immediately for further consultation.
    a. The nest or suspected nest shall be marked (surrounding roped-off or cone buffered) and avoided. This shall be communicated to all personnel on site.
    b. Site activities shall not occur in the area immediately surrounding the nest or suspected nest until further guidance is provided by NHFG.
    c. To minimize the potential for nesting to occur within the project site:
        i. Minimize ground disturbance activities during the active nesting season. Limit clearing areas and disturbing ground until ready to start active construction for a project component.
        ii. Minimize access or make areas less attractive to wildlife for nesting during the active nesting season.
            1. Avoid stockpiling of materials that may be used for nesting (soil, sandy mounds) and/or:
            2. Cover soil/sandy mounds or open sandy/gravely areas within the active project site with tarps or other construction materials at the end of the work day (note turtles can move into a site overnight to nest – be observant for of tracks and nesting signs).

2. These Conservation Measures do not constitute compliance with the federal Endangered Species Act (ESA). There may be occurrences of federally listed species in New Hampshire that are not included on the DataCheck Letter. Please visit the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website (IPaC; https://ipac.ecosphere.fws.gov/) for an official list of federally listed species that may be present in your project area. If a federal agency is involved in your project through funding, permit, or other authorization, coordinate your IPaC results with your point of contact at the agency for further ESA review. If there is no federal agency nexus to your project, and you determine through IPaC, habitat evaluations, etc. that a project may cause take of a federally listed species, we recommend coordinating with the USFWS' New England Field Office (newengland@fws.gov; 603-223-2541).

Plants and exemplary natural communities

The following conservation measures are recommended by the Ecological Review Section to avoid and minimize impacts to Georgia bulrush (*Scirpus georgianus*), eastern grasswort (*Lilaeopsis chinensis*), greater fringed-gentian (*Gentianopsis crinita*), seaside brookweed (*Samolus valerandi* ssp. *parviflorus*), and low brackish riverbank marsh. These measures will need to be provided as written below along with the associated materials to NHDES Wetlands Permit Reviewers to comply with **NHDES Expedited Minimum Impact Wetlands Permit** administrative rules.

NHB25-1598 plant conservation measures:

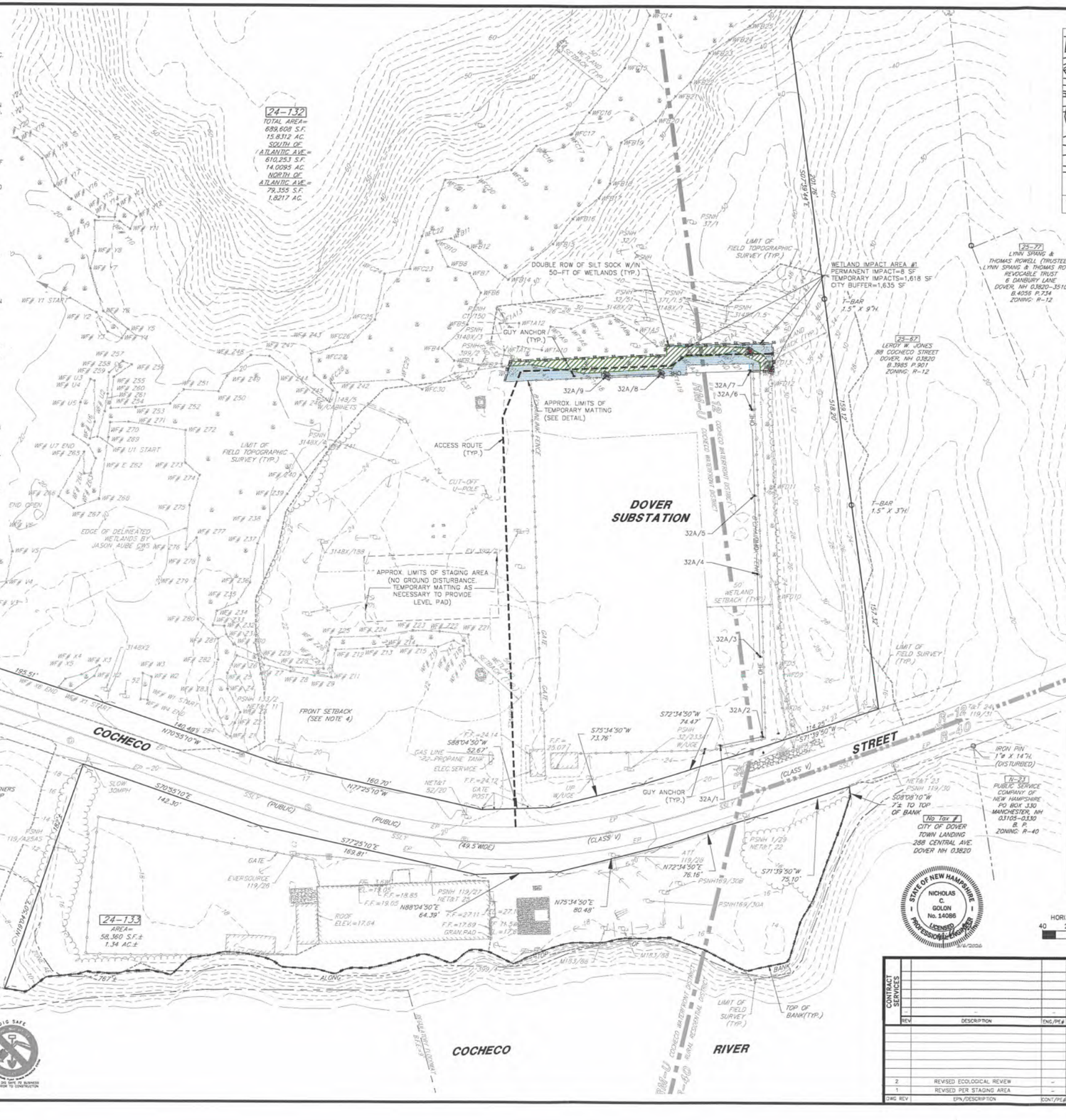
REFERENCE PLANS

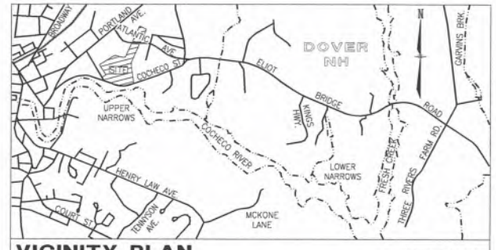
1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H, FEB. 1925, R-6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELEC. CO. DOVER DIV., 12-31-35, B-8122. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC, CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330-55.2. NOT RECORDED.
4. PLAN OF LOT AT 19-23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4-F2-20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE, DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7-F4-32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8-F2-13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19-23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A-141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE, 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32-117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40-82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE, DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51-98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P54-42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TR-CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69-42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92-7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129-1 & 130 109 & 119-121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115-8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.

N

NH STATE PLANE(83/86)(2011)

EVERSOURCE VER: 05/2016





VICINITY PLAN SCALE: 1"=2,000±

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED WETLAND AND CITY WETLAND BUFFER IMPACT AREAS AND MAT ACCESS ROUTE IN THE PROJECT AREA.
2. THE CONTRACTOR SHALL INSTALL PRE-FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE AS SHOWN. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE. ACCESS ROUTE IS PICTORIAL ONLY.
3. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE SHEET FIGURE-02 FOR ADDITIONAL MATTING NOTES AND DETAILS.
4. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS AND PARKING AREAS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
5. FINAL LAYOUT OF TIMBER MATTING BY CONTRACTOR. SHOULD LAYOUT OF TIMBER MATTING EXCEED AREA SHOWN ADDITIONAL PERMITTING SHALL BE REQUIRED.
6. SILT SOCK TO BE PLACED AT LIMITS OF ALL TEMPORARY AND PERMANENT IMPACT AREAS. AREAS SHALL BE STABILIZED AT THE COMPLETION OF CONSTRUCTION WITH HAY MULCH AT A RATE OF 1.5 TONS OF MULCH PER ACRE AND SEED.
7. FINAL STAGING LOCATION(S) TO BE COORDINATED WITH OWNER AND CONTRACTOR.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.

WETLAND IMPACT NOTES

CITY OF DOVER WETLAND BUFFER IMPACTS = 1,635 SF (TOTAL)
BUFFER IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR, AND AREAS OF MATTING AND/OR GROUND DISTURBANCE.
AREA #1 = 1,635 SF

PERMANENT WETLAND IMPACTS = 8 SF (TOTAL)
PERMANENT IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR
AREA #1 = 8 SF

TEMPORARY WETLAND IMPACTS = 1,618 SF (TOTAL)
TEMPORARY IMPACTS CONSIST OF:
AREAS OF MATTING/ACCESS
AREA #1 = 1,618 SF

WETLAND CERTIFICATION

THE WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON FEBRUARY 17, 2022 BY JASON R. AUBE CWS #313. THESE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE U.S. CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012). THE PRESENCE OF DOMINANT HYDROPHYTIC VEGETATION WAS DETERMINED USING THE NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST, VERSION 3.3, 2016, PUBLISHED BY THE ARMY CORPS OF ENGINEERS. HYDRIC SOILS WERE DETERMINED USING THE NH HYDRIC SOILS TECHNICAL COMMITTEE'S "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND", VERSION 4, 2017, PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.

STATE OF NEW HAMPSHIRE — JASON R. AUBE — 2/3/2026 — No. 313 — WETLAND SCIENTIST

INDEX OF SHEETS

SHEET	SHEET TITLE
FIGURE-01	WETLANDS IMPACT & ACCESS PLAN
FIGURE-02 & FIGURE-03	WETLAND IMPACT & ACCESS DETAILS

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
CITY OF DOVER CUP ZONING ORD. ARTICLE 170-28.F WETLAND BUFFER IMPACTS			
NHDES EXPEDITED MIN. IMPACT WETLAND PERMIT			

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 2/6/2026

HORIZONTAL SCALE 1"=40'
40 20 0 40

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DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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www.tfmoran.com
TFM Proj:47482-03

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
-	-	-	-	-	-	-
2	REVISED ECOLOGICAL REVIEW	-	3/6/26	JB	JB	NG
1	REVISED PER STAGING AREA	-	2/18/26	JB	JB	JB
DWG REV	BY/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

WETLANDS IMPACT & ACCESS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	1/29/26
SCALE	1" = 40'
FILE: 47482-03 DESIGN_LAYOUT.DWG	
IMAGE:	
DRAWING NO.	FIGURE-01

2/26/2026 5:37 PM - jbelonger - F:\TFM Projects\47482 Eversource - Dover, NH\47482-03 Dover SS Expansion Civil Services\47482-03_C3D\PRODUCTION\47482-03 Design Layout.dwg - WETLANDS (TEMP)

GENERAL NOTES

1. THE CONTRACTOR SHALL INSTALL PRE-FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE UNLESS OTHERWISE DIRECTED. ACCESS ROUTE IS PICTORIAL ONLY AND NOT INTENDED TO BE A CONSTRUCTED DRIVE.
2. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE DETAILS FOR ADDITIONAL MAT INFORMATION.
3. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
4. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
5. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
8. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF DOVER AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
12. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES NECESSARY TO CONTROL EROSION THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES/EPA STANDARDS. THE DETAILS PROVIDED REPRESENT MINIMUM PERMITTED CONTROLS ONLY AND SHALL BE SUPPLEMENTED BY THE CONTRACTOR AS NECESSARY.
14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
20. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
21. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION).

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. EROSION CONTROLS INDICATED ON THESE PLANS SHALL BE CONSIDERED MINIMUM STANDARDS. ADDITIONAL CONTROLS MAY BE REQUIRED TO ENSURE PERMIT COMPLIANCE AND SHALL BE ADDED AS DEEMED NECESSARY BY THE OWNER/ENGINEER.
2. INSTALLATION OF EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. HAY MULCH OR JUTE MATTING SHALL BE USED FOR TEMPORARY STABILIZATION AS NECESSARY. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
7. SILT SOCK OR SILT FENCE SHALL BE USED FOR CONTAINMENT OF TEMPORARY SOIL STOCK PILES ASSOCIATED WITH POLE INSTALLATION, AS NECESSARY.
8. ALL WORK SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMP) AS OUTLINED IN THE NH DEPT. OF NATURAL AND CULTURAL RESOURCES BEST MANAGEMENT PRACTICES MANUAL, UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES IN NEW HAMPSHIRE, LATEST EDITION.
9. TIMBER MATS SHALL BE REMOVED AT COMPLETION OF WORK AND REMAIN IN PLACE NO LONGER THAN ONE GROWING SEASON.
10. ALL WORK SHALL BE DONE IN COMPLIANCE WITH APPLICABLE CONDITIONS IN ENV-WT 307.
11. DURING CONSTRUCTION, CONTRACTOR SHALL AVOID OR MINIMIZE CONSTRUCTION ACCESS OVER, OR WORK IN OR UPON ORGANIC SOILS AND IN ACCORDANCE WITH ENV-WT 313.03
12. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.

STORM WATER MANAGEMENT NOTES

1. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL TEMPORARILY BE STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 S.F. TALL FESCUE, 0.20 LBS/1,000 S.F. CREEPING RED FESCUE, AND 0.20 LBS/1,000 S.F. BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.
2. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   PRE-FABRICATED MATS – WILL BE INSTALLED ALONG THE PROPOSED ACCESS PATH AS NOTED ON THE PLANS.

   SILT SOCK OR SEDIMENT FENCE – WILL BE CONSTRUCTED DOWNSTREAM OF TEMPORARY STOCKPILE AREAS AND WHERE ADDITIONAL SEDIMENT CONTROL IS DEEMED NECESSARY DURING CONSTRUCTION.

   a. THE SILT SOCK SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSPECTED FOR GAPS OR TEARS IN THE FABRIC, WHICH SHALL BE REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES ONE THIRD OF THE HEIGHT OF THE SILT SOCK.

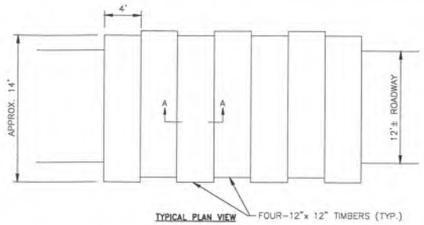
   b. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8 INCHES OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.
3. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH CITY AND STATE REGULATIONS.

CONSTRUCTION SEQUENCE NOTES

1. INSTALL TEMPORARY EROSION CONTROL FACILITIES.
2. INSTALL PROPOSED POLES AND OVERHEAD SERVICE LINES.
3. ALL SLOPES DISTURBED DURING POLE INSTALLATION SHALL BE STABILIZED IMMEDIATELY. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

   ALL DISTURBED AREAS SHALL BE RESTORED WITH THE FOLLOWING SEED MIX:
   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).
4. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER SIGNIFICANT STORM EVENTS.
5. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED AND TEMPORARY SOIL STOCKPILES FROM POLE INSTALLATIONS HAVE BEEN APPROPRIATELY DISPOSED OF.
6. REMOVE EXISTING UTILITY POLES AND OVERHEAD SERVICE LINES, AS NECESSARY. POLES TO BE FLUSH CUT AND ABANDONED UNLESS DIRECTED OTHERWISE BY OWNER.



PRE-FABRICATED MAT

PRE-FABRICATED MAT

NOT TO SCALE

NOTES

1. MATS TO BE INSTALLED TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTORS MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF MATS MAY BE USED.

GUIDELINES

1. PLACEMENT OF MATS SHOULD BE IN A LOCATION THAT WOULD MINIMIZE THE LENGTH NEEDED FOR CROSSING (SEE BEST MANAGEMENT PRACTICES MANUAL FOR UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATER BODIES IN NH, MARCH 2019, CHAPTER 3, BMP 8: SWAMP MATS).
2. MATS MAY BE USED TO CROSS SMALL STREAMS PROVIDED THE MAT DOES NOT DISTURB THE BED OR BANKING.
3. WHERE POSSIBLE, MATS SHOULD BE PLACED SO THAT THEY ARE NOT OVER TOPPED WITH WATER AND EQUIPMENT CAN WORK IN THE DRY.
4. MATS SHALL BE REMOVED FROM WETLAND AREAS ONCE THE CROSSING OR MAINTENANCE ACTIVITY IS COMPLETED.

LIMITATIONS

1. MATS SHALL NOT BE PLACED SO THAT THEY RESTRICT THE NATURAL FLOW OF WATER.
2. MATS THAT HAVE BEEN PLACED IN AREAS IF INVASIVE SPECIES SHALL NOT BE USED AGAIN UNTIL THEY HAVE BEEN CLEANED AND INSPECTED.

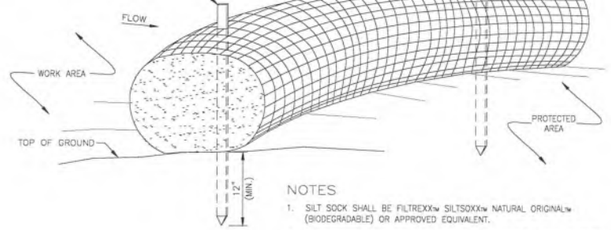
INSTALLATION

1. INSTALL AND REMOVE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, IF APPLICABLE.
2. EVERY EFFORT SHOULD BE MADE TO MINIMIZE IMPACT TO WETLAND AREAS DURING INSTALLATION, USE AND REMOVAL.

INSPECTIONS

INSPECT AFTER EACH USE:

1. LOOK FOR ANY DEFECTS OR STRUCTURAL PROBLEMS.
2. INSPECT FOR ANY PLANT MATERIAL LEFT ON MATS, REMOVE IMMEDIATELY.



NOTES

1. SILT SOCK SHALL BE FILTREXX℠ SILTSOXX℠ NATURAL ORIGINAL℠ (BIODEGRADABLE) OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE IN NON-WETLAND AREAS, AS DETERMINED BY THE ENGINEER.

SILT SOCK

FOR POLE INSTALLATION CONTAINMENT

NOT TO SCALE

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER

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TFM Proj:47482-03

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	REVISED PER ECOLOGICAL REVIEW	14086	3/6/2026	JB	JB	NG

DWG REV	ERN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

WETLAND IMPACT & ACCESS DETAILS

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	2/18/26
SCALE	NOT TO SCALE
FILE	47482-03 COVER & DETAILS
IMAGE	
DWG	
DRAWING NO.	FIGURE-02

EVERSOURCE VER: 05/2016

3/6/2026 3:19 PM - jbelanger - F:\TFM Projects\47482 Eversource - Dover, NH\47482-03 Dover SS Expansion Civil Services\47482-03_CSD\PRODUCTION\47482-03 Cover & Details.dwg - DETAILS-1 (WETLANDS)

PLANT & WILDLIFE CONSERVATION MEASURES (NHB25-1598)

1. CLIFF SWALLOW (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), AND SPOTTED TURTLE (STATE THREATENED) MAY OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON THIS SHEET.

   1.a. PROTECTED SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT THE NHFG BIOLOGISTS IMMEDIATELY) SHOULD BE COMMUNICATED DURING MEETINGS PRIOR TO WORK COMMENCEMENT THROUGHOUT THE CONSTRUCTION PHASE OF THE PROJECT. SEE FLYERS THIS SHEET.

2. SHRUB COVER SHALL NOT BE REMOVED BEYOND THE LIMITS OF THE CONSTRUCTION AREA. STAGING OF EQUIPMENT/MATERIAL AND VEHICLE PARKING SHALL NOT OCCUR IN SHRUB COVER OR WETLANDS.

3. FOR PROJECT ACTIVITIES OCCURRING DURING THE ACTIVE SEASON FOR TURTLES (BETWEEN APRIL 15TH AND OCTOBER 15TH), SEARCHES AND SWEEPS SHALL BE CONDUCTED BY A TRAINED INDIVIDUAL(S) IMMEDIATELY BEFORE THE START OF WORK DAILY, AHEAD OF EQUIPMENT MOVEMENT, AND PRIOR TO PLACING MATTING. TRAINED INDIVIDUALS IN THIS CASE ARE ENVIRONMENTAL PROFESSIONALS WHO HAVE GONE THROUGH TRAINING SPECIFIC TO UTILITY PROJECTS FOR TURTLES.

4. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHOULD NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES.

5. IN THE EVENT A PROTECTED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY THE ECOLOGICAL REVIEW SECTION UNLESS THE PROTECTED SPECIES IS DISCOVERED WITHIN THE ACTIVE WORK ZONE IN DIRECT HARM FROM PROJECT ACTIVITIES. IF THIS SITUATION OCCURS:

   5.a. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED.
   5.b. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING.
   5.c. NHFG BIOLOGISTS SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.

6. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271- 2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE CONTAINING "NHB25-1598, EVERSOURCE DOVER SUBSTATION, WILDLIFE SPECIES OBSERVATION". PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHOULD BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.

7. THE ECOLOGICAL REVIEW SECTION, ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

THE FOLLOWING ADDITIONAL CONSERVATION MEASURES ARE RECOMMENDED TO COMPLY WITH RSA 212-A AND ARE NOT REQUIRED FOR PERMITTING.

1. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON (MAY 15TH THROUGH JULY 15TH). NESTING AREAS MAY INCLUDE RIGHTS-OF-WAY THAT ARE NOT HARD-PACKED GRAVEL AND OTHER SANDY/GRAVEL WORK AREAS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT NHFG IMMEDIATELY FOR FURTHER CONSULTATION.

   1.a. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED-OFF OR CONE BUFFERED) AND AVOIDED. THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ON SITE.
   1.b. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA IMMEDIATELY SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
   1.c. TO MINIMIZE THE POTENTIAL FOR NESTING TO OCCUR WITHIN THE PROJECT SITE:
      1.c.1. MINIMIZE GROUND DISTURBANCE ACTIVITIES DURING THE ACTIVE NESTING SEASON. LIMIT CLEARING AREAS AND DISTURBING GROUND UNTIL READY TO START ACTIVE CONSTRUCTION FOR A PROJECT COMPONENT.
      1.c.2. MINIMIZE ACCESS OR MAKE AREAS LESS ATTRACTIVE TO WILDLIFE FOR NESTING DURING THE ACTIVE NESTING SEASON.
         1.c.2.1. AVOID STOCKPILING OF MATERIALS THAT MAY BE USED FOR NESTING (SOIL, SANDY MOUNDS) AND/OR:
         1.c.2.2. COVER SOIL/SANDY MOUNDS OR OPEN SANDY/GRAVELY AREAS WITHIN THE ACTIVE PROJECT SITE WITH TARPS OR OTHER CONSTRUCTION MATERIALS AT THE END OF THE WORK DAY (NOTE TURTLES CAN MOVE INTO A SITE OVERNIGHT TO NEST – BE OBSERVANT FOR OF TRACKS AND NESTING SIGNS).

NHB25-1598 PLANT CONSERVATION MEASURES:

1. NO WORK SHALL OCCUR ALONG THE BANKS OF THE COCHECO RIVER, AS PROPOSED.
2. WETLAND MATS SHALL BE REMOVED AS SOON AS PRACTICABLE.
3. THE MAJORITY OF WETLAND IMPACTS (WITH THE EXCEPTION OF PERMANENT IMPACTS FOR THE INSTALLATION OF TWO POLES AND GUY ANCHORS) SHALL BE TEMPORARY.
4. WORK IN WETLANDS SHALL OCCUR AS CLOSE TO APRIL (THE PROPOSED START TIME) AS PRACTICABLE.

NEW HAMPSHIRE STATE THREATENED

CLIFF SWALLOW

Report Sightings: For environmental review projects, contact the Wildlife Division at (603) 271 – 2461 or as otherwise noted in permit documents. For non-urgent reports, submit observations to Ebird.org. Photographs and exact locations are strongly encouraged.



Species Information:
- 5 inches long with a 10 – 11 inch wingspan.
- White forehead and a buffy rump.
- Short, square tail distinguishes from Barn Swallows who have long, forked tails.
- Found on or near houses, barns, bridges, and other structures in Coos County, Lakes Region, and Seacoast.
- Migration to New Hampshire and nesting occurs between May – August.
- Nests are built on vertical surfaces, are gourd-shaped, and made of mud.
- Nests are grouped close together.
- Do not remove or disturb nests.





This species is protected under RSA 209:8, RSA 209:10, and Fis 1000.

DO NOT DISTURB OR HANDLE WILDLIFE UNLESS AUTHORIZED BY NH FISH AND GAME

9/2/25

NEW HAMPSHIRE STATE ENDANGERED

NEW ENGLAND COTTONTAIL

Report Sightings: For environmental review project, contact Wildlife Biologist Heidi Holman at (603) 616 – 3324, heidi.l.holman@wildlife.nh.gov, or the Wildlife Division at (603) 271 – 2461. Otherwise, observations can be sent to nhrabbitreports.org. Photographs and locations are strongly encouraged.



Specific Information:
- Adults are 15 – 17 inches in length.
- Brown and gray coat that does not change color with seasons.
- Black spot between the eyes is sometimes visible.
- Often mistaken for Eastern Cottontails.
- Found in shrublands and young-growth or early-successional forests.
- Mating begins in March, with nests present throughout the summer.
- Young are weaned around 28 days and continue growing throughout their first winter.
- Do not hibernate and use habitat all year.





This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

DO NOT DISTURB OR HANDLE WILDLIFE UNLESS AUTHORIZED BY NH FISH AND GAME

11/12/25

NEW HAMPSHIRE STATE THREATENED

SPOTTED TURTLE

Report Sightings: Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to RAARP@wildlife.nh.gov. Photographs and exact locations are strongly encouraged.



Specific Information:
- Adults are 3 – 5 inches long
- Shell is black or brown, fairly flat, and with yellow spots.
- Uses variety of wetlands and moves extensively over land.
- Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
- Turtles are most active from April 15 – October 15.
- During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.





This species is protected under RSA 212-A and Fis 1000.

DO NOT DISTURB OR HANDLE WILDLIFE UNLESS AUTHORIZED BY NH FISH AND GAME

11/12/25

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DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	REVISED PER ECOLOGICAL REVIEW	14086	3/6/2026	JB	JB	NG

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110
Phone (603) 472-4488, Fax (603) 472-9747
www.tfmoran.com
TFM Proj:47482-03

WETLAND IMPACT & ACCESS DETAILS

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION EXPANSION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	1/29/26

SCALE: NOT TO SCALE | FILE: 47482-03 COVER & DETAILS.DWG | IMAGE:

DRAWING NO. FIGURE-03

EVERSOURCE VER: 05/2016

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1. No work shall occur along the banks of the Cocheco River, as proposed.

2. Wetland mats shall be removed as soon as practicable.

3. The majority of wetland impacts (with the exception of permanent impacts for the installation of two poles and guy anchors) shall be temporary.

4. Work in wetlands shall occur as close to April (the proposed start time) as practicable.

This ecological review decision is based on the presumption that the information submitted as part of the application is true, complete and not misleading. If after the issuance of conservation measures new information is received, the ecological review decision may be considered invalid, and a new ecological review request may need to be submitted.

Sincerely,

Madeline Severance
Environmental Reviewer
Ecological Review Section
Land Resources Management Program
New Hampshire Department of Environmental Services

REFERENCE PLANS

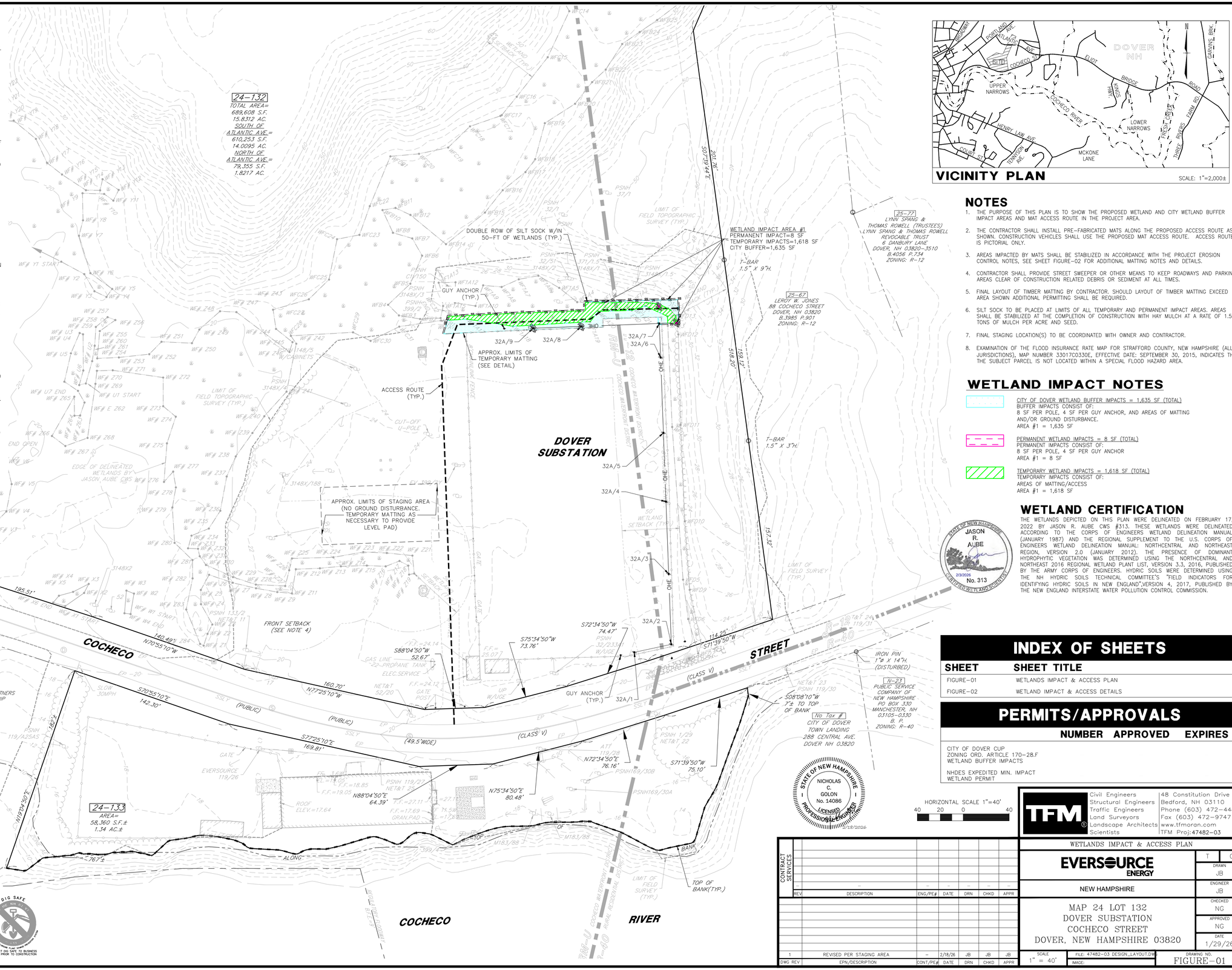
1. PLAN OF LAND AT POWER STATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H, FEB. 1925, R–6585. NOT RECORDED.
2. LAND AT DOVER SUBSTATION THE TWIN STATE GAS & ELEC. CO. DOVER DIV., 12–31–35, B–8122. NOT RECORDED.
3. PLAN OF LAND AT DOVER SUBSTATION TWIN STATE GAS & ELECTRIC CO. DOVER N.H. NEW ENGLAND PUBLIC SERVICE COMPANY ENG. DEPT. APRIL 27, 1927, 330–55.2. NOT RECORDED.
4. PLAN OF LOT AT 19–23 ROGERS STREET MARIA D. JORDAN DOVER NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES JAN. 25, 1958. NOT RECORDED.
5. PLAN OF LOT EVELYN PICHETTE ELMWOOD AVENUE DOVER, N.H. G.L. DAVIS & ASSOCIATES OCT. 1981. NOT RECORDED.
6. STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT PLANS OF PROPOSED STATE AID CONSTRUCTION PROJECT NO. 1644 ELLIOT BRIDGE ROAD (ATLANTIC AVE) LAYOUT CITY OF DOVER COUNTY OF STRAFFORD.
7. ATLANTIC HEIGHTS DEVELOP. DOVER, NEW HAMPSHIRE CHRISTENSEN, LAWLESS & PARADIS FROM PLAN BY GERARD A. CRAWFORD, 1955. S.C.R.D. PLAN NO. P4–F2–20.
8. PLAN OF BACK LOTS OFF ELMWOOD AVE. DOVER, NEW HAMPSHIRE G.L. DAVIS & ASSOCIATES AUG. 1960. S.C.R.D. PLAN NO. P7–F4–32.
9. ATLANTIC HEIGHTS DOVER N.H. OWNED BY MAYNARD LAND CO. C.F.C AUGUST 1909 BY C. A. THAYER. S.C.R.D. PLAN NO. P8–F2–13.
10. PLAN OF LAND OF MARK W. AND PAMELA L. WALTZ 19–23 ROGERS STREET DOVER, NEW HAMPSHIRE SURVEY FOR SUBDIVISION BY C & S ASSOCIATES 12/23/81 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P22A–141.
11. PLAN OF SUBDIVISION OF LAND OF VASSILIOS & NINA GATZOULAS FOR SPINELLI CORPORATION DOVER, NEW HAMPSHIRE 8/27/84 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P32–117.
12. COCHECO STREET LAYOUT FOR THE CITY OF DOVER IN DOVER, N.H. AUGUST 1, 1990 BY BRUCE L. POHOPEK. S.C.R.D. PLAN NO. P40–82.
13. ALTA/ACSM LAND TITLE SURVEY ROYAL OAKS APARTMENTS PREPARED FOR MOUNT CHASE REALTY TRUST 149 PORTLAND AVENUE DOVER, NEW HAMPSHIRE 3/25/1998 BY CIVIL CONSULTANTS. S.C.R.D. PLAN NO. P51–98.
14. SUBDIVISION OF LAND FOR NORMAN AND HELEN GAGNE CROSS STREET AND ATLANTIC AVENUE DOVER, NEW HAMPSHIRE JANUARY 1988 BY KEM LAND SURVEY, INC. S.C.R.D. PLAN NO. P54–42.
15. PROPOSED SUBDIVISION AND LOT LINE REVISION LAND OF TRI–CITY BUILDERS, INC. STF DEVELOPMENT CORP. AND GEORGE & JEANNE SNELL ATLANTIC AVENUE & GRANITE STREET DOVER, N.H. JANUARY 30, 2003 AND LAST REVISED 4/21/03 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P69–42.
16. CONDOMINIUM SITE PLAN LAND OF STF DEVELOPMENT CORP. ATLANTIC AVENUE & PORTLAND AVENUE DOVER, N.H. TAX MAP 25, LOT 56 APRIL 27, 2007 AND LAST REVISED 10/5/07 BY BERRY SURVEYING & ENGINEERING. S.C.R.D. PLAN NO. P92–7.
17. LOT LINE ADJUSTMENT PLAN PREPARED FOR 109 PORTLAND AVENUE CONDOMINIUMS AND TIMOTHY A. & MARILYN F. DONNELLY TAX MAP 24, LOT NOS. 129–1 & 130 109 & 119–121 PORTLAND AVENUE CITY OF DOVER COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE FEBRUARY 3, 2017 BY MCENEANEY SURVEY ASSOCIATES, INC. & ENGINEERING. S.C.R.D. PLAN NO. P115–8.
18. 1902 PLAN AND PROFILE OF ROGERS STREET. ON FILE AT THE CITY CLERKS OFFICE.

N

NH STATE PLANE(83/86)(2011)

EVERSOURCE (VER. 05/2016)

WETLANDS (TEMP)



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED WETLAND AND CITY WETLAND BUFFER IMPACT AREAS AND MAT ACCESS ROUTE IN THE PROJECT AREA.
2. THE CONTRACTOR SHALL INSTALL PRE–FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE AS SHOWN. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE. ACCESS ROUTE IS PICTORIAL ONLY.
3. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE SHEET FIGURE–02 FOR ADDITIONAL MATTING NOTES AND DETAILS.
4. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS AND PARKING AREAS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
5. FINAL LAYOUT OF TIMBER MATTING BY CONTRACTOR. SHOULD LAYOUT OF TIMBER MATTING EXCEED AREA SHOWN ADDITIONAL PERMITTING SHALL BE REQUIRED.
6. SILT SOCK TO BE PLACED AT LIMITS OF ALL TEMPORARY AND PERMANENT IMPACT AREAS. AREAS SHALL BE STABILIZED AT THE COMPLETION OF CONSTRUCTION WITH HAY MULCH AT A RATE OF 1.5 TONS OF MULCH PER ACRE AND SEED.
7. FINAL STAGING LOCATION(S) TO BE COORDINATED WITH OWNER AND CONTRACTOR.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.

WETLAND IMPACT NOTES

CITY OF DOVER WETLAND BUFFER IMPACTS = 1,635 SF (TOTAL)
BUFFER IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR, AND AREAS OF MATTING AND/OR GROUND DISTURBANCE.
AREA #1 = 1,635 SF

PERMANENT WETLAND IMPACTS = 8 SF (TOTAL)
PERMANENT IMPACTS CONSIST OF:
8 SF PER POLE, 4 SF PER GUY ANCHOR
AREA #1 = 8 SF

TEMPORARY WETLAND IMPACTS = 1,618 SF (TOTAL)
TEMPORARY IMPACTS CONSIST OF:
AREAS OF MATTING/ACCESS
AREA #1 = 1,618 SF

WETLAND CERTIFICATION

THE WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON FEBRUARY 17, 2022 BY JASON R. AUBE CWS #313. THESE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE U.S. CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012). THE PRESENCE OF DOMINANT HYDROPHYTIC VEGETATION WAS DETERMINED USING THE NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST, VERSION 3.3, 2016, PUBLISHED BY THE ARMY CORPS OF ENGINEERS. HYDRIC SOILS WERE DETERMINED USING THE NH HYDRIC SOILS TECHNICAL COMMITTEE'S "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND",VERSION 4, 2017, PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.

STATE OF NEW HAMPSHIRE
JASON R. AUBE
2/3/2026
No. 313
CERTIFIED WETLAND SCIENTIST

INDEX OF SHEETS

SHEET	SHEET TITLE
FIGURE–01	WETLANDS IMPACT & ACCESS PLAN
FIGURE–02	WETLAND IMPACT & ACCESS DETAILS

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
CITY OF DOVER CUP ZONING ORD. ARTICLE 170–28.F WETLAND BUFFER IMPACTS			
NHDES EXPEDITED MIN. IMPACT WETLAND PERMIT			

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
2/18/2026

HORIZONTAL SCALE 1"=40'
40 20 0 40

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com
TFM Proj:47482–03

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR
1	REVISED PER STAGING AREA	–	2/18/26	JB	JB	JB

DWG REV | EPN/DESCRIPTION | CONT/PE# | DATE | DRN | CHKD | APPR

WETLANDS IMPACT & ACCESS PLAN

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	1/29/26
SCALE	1" = 40'
FILE:	47482–03 DESIGN_LAYOUT.DWG
IMAGE:	
DRAWING NO.	FIGURE–01

2/18/2026 4:00 PM Designer - F:\TFM Projects\47482 Eversource - Dover NH\47482–03 - Dover SS Expansion Civil Services\47482–03 CSV\PRODUCTION\47482–03 Design Layout.dwg

EVERSOURCE DEL 05/2016

GENERAL NOTES

1. THE CONTRACTOR SHALL INSTALL PRE-FABRICATED MATS ALONG THE PROPOSED ACCESS ROUTE. CONSTRUCTION VEHICLES SHALL USE THE PROPOSED MAT ACCESS ROUTE UNLESS OTHERWISE DIRECTED. ACCESS ROUTE IS PICTORIAL ONLY AND NOT INTENDED TO BE A CONSTRUCTED DRIVE.
2. AREAS IMPACTED BY MATS SHALL BE STABILIZED IN ACCORDANCE WITH THE PROJECT EROSION CONTROL NOTES, SEE DETAILS FOR ADDITIONAL MAT INFORMATION.
3. CONTRACTOR SHALL PROVIDE STREET SWEEPER OR OTHER MEANS TO KEEP ROADWAYS CLEAR OF CONSTRUCTION RELATED DEBRIS OR SEDIMENT AT ALL TIMES.
4. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
5. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
8. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF DOVER AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
12. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES NECESSARY TO CONTROL EROSION THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES/EPA STANDARDS. THE DETAILS PROVIDED REPRESENT MINIMUM PERMITTED CONTROLS ONLY AND SHALL BE SUPPLEMENTED BY THE CONTRACTOR AS NECESSARY.
14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
20. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
21. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION).

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. EROSION CONTROLS INDICATED ON THESE PLANS SHALL BE CONSIDERED MINIMUM STANDARDS, ADDITIONAL CONTROLS MAY BE REQUIRED TO ENSURE PERMIT COMPLIANCE AND SHALL BE ADDED AS DEEMED NECESSARY BY THE OWNER/ENGINEER.
2. INSTALLATION OF EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. HAY MULCH OR JUTE MATTING SHALL BE USED FOR TEMPORARY STABILIZATION AS NECESSARY. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
7. SILT SOCK OR SILT FENCE SHALL BE USED FOR CONTAINMENT OF TEMPORARY SOIL STOCK PILES ASSOCIATED WITH POLE INSTALLATION, AS NECESSARY.
8. ALL WORK SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMP) AS OUTLINED IN THE NH DEPT. OF NATURAL AND CULTURAL RESOURCES BEST MANAGEMENT PRACTICES MANUAL, UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES IN NEW HAMPSHIRE, LATEST EDITION.
9. TIMBER MATS SHALL BE REMOVED AT COMPLETION OF WORK AND REMAIN IN PLACE NO LONGER THAN ONE GROWING SEASON.
10. ALL WORK SHALL BE DONE IN COMPLIANCE WITH APPLICABLE CONDITIONS IN ENV-WT 307.
11. DURING CONSTRUCTION, CONTRACTOR SHALL AVOID OR MINIMIZE CONSTRUCTION ACCESS OVER, OR WORK IN OR UPON ORGANIC SOILS AND IN ACCORDANCE WITH ENV-WT 313.03
12. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.

STORM WATER MANAGEMENT NOTES

1. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 21 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SQUARE FEET. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL TEMPORARILY BE STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 S.F. TALL FESCUE, 0.20 LBS/1,000 S.F. CREEPING RED FESCUE, AND 0.20 LBS/1,000 S.F. BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

2. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   PRE-FABRICATED MATS – WILL BE INSTALLED ALONG THE PROPOSED ACCESS PATH AS NOTED ON THE PLANS.

   SILT SOCK OR SEDIMENT FENCE – WILL BE CONSTRUCTED DOWNSTREAM OF TEMPORARY STOCKPILE AREAS AND WHERE ADDITIONAL SEDIMENT CONTROL IS DEEMED NECESSARY DURING CONSTRUCTION.

   a. THE SILT SOCK SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSPECTED FOR GAPS OR TEARS IN THE FABRIC, WHICH SHALL BE REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES ONE THIRD OF THE HEIGHT OF THE SILT SOCK.

   b. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8 INCHES OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

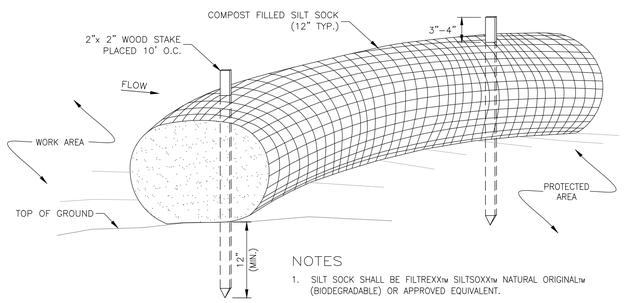
3. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH CITY AND STATE REGULATIONS.

CONSTRUCTION SEQUENCE NOTES

1. INSTALL TEMPORARY EROSION CONTROL FACILITIES.
2. INSTALL PROPOSED POLES AND OVERHEAD SERVICE LINES.
3. ALL SLOPES DISTURBED DURING POLE INSTALLATION SHALL BE STABILIZED IMMEDIATELY. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

   ALL DISTURBED AREAS SHALL BE RESTORED WITH THE FOLLOWING SEED MIX:
   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).
4. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER SIGNIFICANT STORM EVENTS.
5. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED AND TEMPORARY SOIL STOCKPILES FROM POLE INSTALLATIONS HAVE BEEN APPROPRIATELY DISPOSED OF.
6. REMOVE EXISTING UTILITY POLES AND OVERHEAD SERVICE LINES, AS NECESSARY. POLES TO BE FLUSH CUT AND ABANDONED UNLESS DIRECTED OTHERWISE BY OWNER.



NOTES
1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE IN NON-WETLAND AREAS, AS DETERMINED BY THE ENGINEER.

SILT SOCK

FOR POLE INSTALLATION CONTAINMENT — NOT TO SCALE

NH FISH & GAME SPECIES INFORMATION (NHB25-1598)

1. CLIFF SWALLOW (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), AND SPOTTED TURTLE (STATE THREATENED) MAY OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON THIS SHEET.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION.
3. IF CLIFF SWALLOWS ARE OBSERVED TO DISPLAY NESTING BEHAVIOR (FOR EXAMPLE: CALLING, SWOOPING, AGITATED, TERRITORIAL BEHAVIOR), NHFG ENCOURAGES CONTACTING THE WILDLIFE DIVISION BY PHONE AT 603-271-2461 OR BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
4. OBSERVATIONS OF SPOTTED TURTLE SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) OR JOSH MEGYESY (978-578-0802).
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON THIS SHEET.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JUNE 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
7. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB25-1598, EVERSOURCE DOVER SUBSTATION WILDLIFE OBSERVATION.
   A. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
9. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
10. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION.
11. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO THE INVASIVE SPECIES.

WATCH FOR RARE TURTLES

NHFG Wildlife Biologist Contacts:
Melissa Winters 603-479-1129 and Josh Megyesy 978-578-0802

- Turtles may be attracted to disturbed ground during nesting season (May 15th – June 30th).
- Turtles are most active from April 15th - October 15th.



Spotted turtle (State Threatened)

Small, mostly aquatic with black or dark brown with yellow spots.

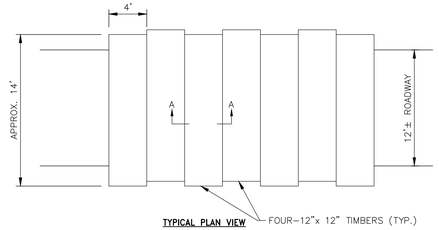
Fairly flat shell compared to Blanding's turtle.

Spots vary in color and number.

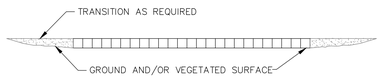
Semi-aquatic - uses both wetland and terrestrial habitats.

Blanding's and spotted turtles are protected by state laws. It is illegal to capture, harass or harm these species, including their nests. Handle ONLY if necessary to move out of harms way. Move to the nearest location in the direction they were moving and contact NHFG. Do not disturb nests.

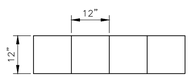
Report sightings in accordance with NHFG permit conditions. Contact NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) and Josh Megyesy 978-578-0802 (group text preferred) if a turtle is observed nesting or a nest site is suspected within the project area. Please report promptly, noting specific location, project site and date – Photographs strongly encouraged to be included with report.



TYPICAL PLAN VIEW — FOUR-12"x 12" TIMBERS (TYP.)



TYPICAL SECTION VIEW



SECTION A-A
TYPICAL MAT SECTION
(BOLTED TOGETHER)

PRE-FABRICATED MAT

NOTES
1. MATS TO BE INSTALLED TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTORS MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF MATS MAY BE USED.

GUIDELINES
1. PLACEMENT OF MATS SHOULD BE IN A LOCATION THAT WOULD MINIMIZE THE LENGTH NEEDED FOR CROSSING (SEE BEST MANAGEMENT PRACTICES MANUAL FOR UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATER BODIES IN NH, MARCH 2019, CHAPTER 3, BMP 8: SWAMP MATS).
2. MATS MAY BE USED TO CROSS SMALL STREAMS PROVIDED THE MAT DOES NOT DISTURB THE BED OR BANKING.
3. WHERE POSSIBLE, MATS SHOULD BE PLACED SO THAT THEY ARE NOT OVER TOPPED WITH WATER AND EQUIPMENT CAN WORK IN THE DRY.
4. MATS SHALL BE REMOVED FROM WETLAND AREAS ONCE THE CROSSING OR MAINTENANCE ACTIVITY IS COMPLETED.

LIMITATIONS
1. MATS SHALL NOT BE PLACED SO THAT THEY RESTRICT THE NATURAL FLOW OF WATER.
2. MATS THAT HAVE BEEN PLACED IN AREAS IF INVASIVE SPECIES SHALL NOT BE USED AGAIN UNTIL THEY HAVE BEEN CLEANED AND INSPECTED.

INSTALLATION
1. INSTALL AND REMOVE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, IF APPLICABLE.
2. EVERY EFFORT SHOULD BE MADE TO MINIMIZE IMPACT TO WETLAND AREAS DURING INSTALLATION, USE AND REMOVAL.

INSPECTIONS

INSPECT AFTER EACH USE:
1. LOOK FOR ANY DEFECTS OR STRUCTURAL PROBLEMS.
2. INSPECT FOR ANY PLANT MATERIAL LEFT ON MATS, REMOVE IMMEDIATELY.

PRE-FABRICATED MAT

NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 2/18/2026

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com
TFM Proj:47482-03

CONTRACT SERVICES

REV	DESCRIPTION	ENG/PE#	DATE	DRN	CHKD	APPR

DWG REV	EPN/DESCRIPTION	CONT/PE#	DATE	DRN	CHKD	APPR

WETLAND IMPACT & ACCESS DETAILS

EVERSOURCE ENERGY

NEW HAMPSHIRE

MAP 24 LOT 132
DOVER SUBSTATION
COCHECO STREET
DOVER, NEW HAMPSHIRE 03820

T	0
DRAWN	JB
ENGINEER	JB
CHECKED	NG
APPROVED	NG
DATE	2/18/26
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FILE: 47482-03 COVER & DETAILS.DWG	
IMAGE:	
DRAWING NO.	FIGURE-02

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CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0005

Application Type:	Conditional Use Permit
Applicant(s):	Equinox Properties, LLC
Owner(s):	Equinox Properties, LLC
Location:	24 Winter Street (Map 24, Lot 34)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the Central Business District Residential Sub-District (CBD-R) minimum lot coverage of 40%, where the applicant proposes 13% (7.25% existing).

UNITS PROPOSED: One (1) lot – no change. Four (4) units proposed, one (1) existing.

AGENDA ITEM #: 4-B

ACREAGE: 0.27 ± ac., 11,564 s.f.

ZONING DISTRICT: CBD-R

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Railroad tracks

PERMITS REQUIRED FOR THIS CASE: Four City of Dover CUPs from required minimum lot coverage, and front built-to, side, and rear setback requirements.

WAIVERS REQUESTED: None

ZBA ACTION: N/A for proposal

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

ATTACHMENTS: Application and narrative, CUP Plan

Summary of Request and Background

The applicant is requesting a CUP for relief of the CBD-R minimum lot coverage of 40%, where the applicant proposes 13% (7.25% existing).

The site, located at the end of 24 Winter Street, is just north of a quarter of an acre and currently holds a single-family home. The applicant is proposing a four (4) unit building on the site with a four (4) car garage beneath. The surrounding neighborhood hosts a mixture of residential densities, ranging from single-family homes to similar four-unit structures. Within the CBD-R, there is no specific density limit, rather, density is limited inherently by structure height, lot setback requirements, and parking.

The lot, although relatively large for the area, is unique in that it contains a substantial amount of area containing steep slopes, a significant portion of which is man-made, meaning the lot's buildable area is constrained to a large degree.

Pursuant to underlying zoning regulations, all new development within the CBD-R zone requires a minimum lot coverage of 40% or more. The applicant in this case is proposing approximately 13% where 7.25% currently exists.

The Technical Review Committee reviewed the application at their February 19, 2026 meeting. *(minutes attached)*

Consistency with Land Use Regulations

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.
(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.
(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.
(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.
(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.
(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.
(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.
(h) That the preservation and renewal of historic buildings shall be

See reverse →

facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Given the similarities between the proposal and other four-unit structures within the neighborhood, coupled with the topographic constraints the lot presents, staff feels the criteria of the Conditional Use Permit have been met.

Consistency with Land Use Regulations – Central Business District, Residential Sub-District

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the CBD-R. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

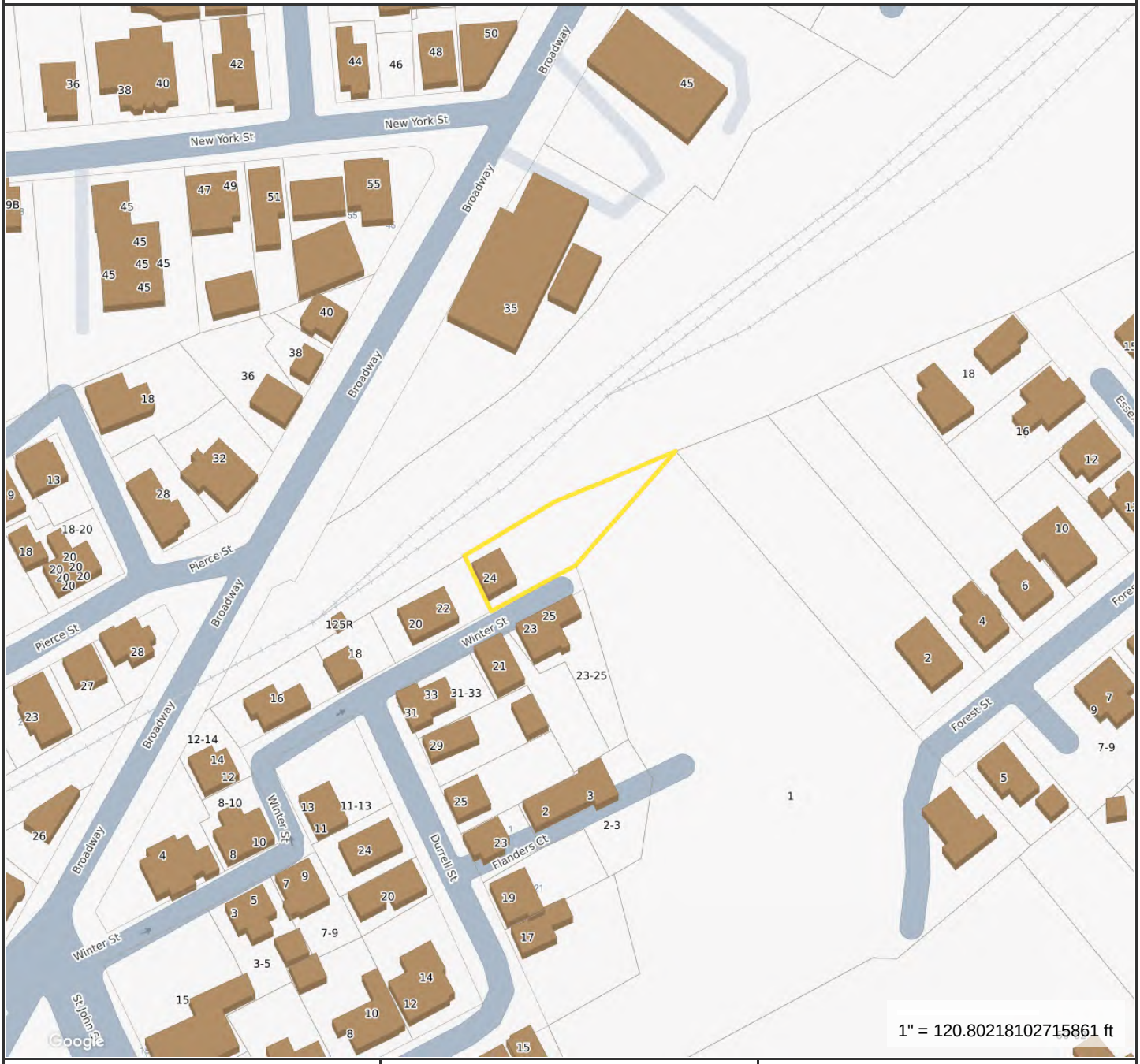
Staff agrees with the applicant that the above three criteria have been met.

Staff Recommendation:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following conditions:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Provide physical and digital copies (including CAD) of complete plan set which additionally shall include:
   1.1. The owner's signatures;
   1.2. The Planning File #COND-2026-0005;
   1.3. The stamp and signature of the LLS on the final plans; and
2. Receive Conditional Use Permits from the CBD-R District's Front Build-to Line, Side Setback, and Rear Setback (COND-2026-0012, 13, and 14)
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0005 24 WINTER STREET



Property Information

Location	24 WINTER ST
Owner	EQUINOX PROPERTIES LLC
Land Use	101R
Zoning Code	CBD-R
Property Id	24034-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0005
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/03/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Proposing to develop the site with a 4-unit building.

Parcel: 24034-000000 Main	**Address:** 24 Winter St Dover, NH Main	**Zone:** RM-U(Residential - Urban Density) CBD-R(Central Business District - Reside

Plan Preparer	Applicant	Owner
Berry Surveying & Engineering	Berry Surveying & Engineering	William Goldstein
335 Second Crown Point Road	335 Second Crown Point Road	Home: (603) 742-5300
Barrington, NH 03825	Barrington, NH 03825	Mobile: (603) 531-8158
Business: (603) 332-2863	Business: (603) 332-2863	
Mobile: (603) 781-3403	Mobile: (603) 781-3403	

Permit Custom Fields

Select Permit Type	Central Business District - Residential	General Purpose	New Construction	Project Zone	Residential
What is the parcel zoned?	CBD-R	New Change in Impervious/Paved Area (sq ft)	1258	Work	New Building with less coverage than required, within the front build-to, within the side setback and within the rear setback.
permitstatefed	none				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Chris_Berry_2/3/2026.jpg	02/03/2026 10:13	Berry, Chris		Uploaded via CSS
Permit Snapshot Report.pdf	02/03/2026 10:14	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
2026.02.19_PlanningTechnicalReviewCommittee.Agenda.Rev.pdf	02/06/2026 14:44	Blonigen, Rachel		TRC Agenda
2026.02.19_PlanningTechnicalReviewCommittee.24Winter_COND-2026-0005.pdf	03/02/2026 15:32	Blonigen, Rachel		TRC Draft Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000450	Planning Impervious Paved Area Fee	$88.06	$0.00
	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000450	**$288.06**	**$0.00**
	Grand Total for Permit	**$288.06**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			02/03/2026 11:03
Confirm application complete v.1	Generic Action		02/03/2026 11:03
~~Conditional Use Review v.1~~	Receive Submittal		02/03/2026 11:03
Planning Board v.1		02/03/2026 11:04	
Planning Board Agenda v.1	Task	02/03/2026 11:04	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		

Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Equinox Properties, LLC Telephone # 603-742-5300

Address of Applicant: 8 Grove Street, Dover, NH 03820

E-Mail Address: billtgolds@aol.com

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: Same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # .34

Address of Property: 24 Winter Street

Zoning District(s) CBD-Res Overlay District(s) Conservation

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Redevelopment of the site for a proposed 4-Unit Building.

- Minimum Lot Coverage less than 40% Existing 7.25% Proposed 13%
- 8-15' Front Build-To Existing 6.3' Proposed 6.6' to Structure (5.6' cantilever)
- 10' Side Setback Existing 2.9' Proposed 5.6'
- 15' Rear Setback Existing 9.9' Proposed 5.1' to Deck, 10' to Structure

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: None

Name of Professional That Prepared Plans: Berry Surveying & Engineering, Christopher R. Berry, LLS

Address 335 Second Crown Point Road, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 1624 E-mail address: crberry@berrysurveying.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 2-3-26

Signature of Applicant (if different from owner): _____ Date: 2-3-26

Signature of Agent: _____ Date: 2-3-26

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-26

COND-2026-0005 **24 WINTER STREET**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
04052-000000	32 BROADWAY	MARTUSCELLO ANTHONY R	MARTUSCELLO VICKY L	315 LONG HILL RD	DOVER	NH	03820-6109
04054-000000	38 BROADWAY	SULLIVAN PETER D & LINDA M CO-TRUSTEES	SULLIVAN PETER & LINDA REV LIV TRUST	81 MOUNT VERNON	DOVER	NH	03820
24036-000000	18 WINTER ST	BELL CONNOR PATRICK		18 WINTER ST	DOVER	NH	03820
24046-000000	11 WINTER ST	FIRST NANJING GROUP 2 LLC		6 EXETER FARMS RD	EXETER	NH	03833-4885
24022-000000	4 FOREST ST	SHEEHAN WAYNE M &	SHEEHAN SHERRIE R	PO BOX 454	CENTRAL VLG	CT	06332-0454
24026-000000	19 DURRELL ST	FIRST NANJING GROUP LLC		19 DURRELL ST	EXETER	NH	03833-4885
24028-000000	25 DURRELL ST	CLARK ANDREW	JORDAN GABRIELLE	25 DURRELL ST	DOVER	NH	03820-3236
24035-000000	20 WINTER ST	FRUDA 21 LLC		28 VILLAGE GREEN DR	OGUNQUIT	ME	03907
24037-000000	16 WINTER ST	BOUDREAU ANNETTE M		16 WINTER ST	DOVER	NH	03820
24031-000000	31 DURRELL ST	HOLOWACHUK JUSTIN		154 TRENTON ST	EAST BOSTON	MA	02128-2537
24047-000000	24 DURRELL ST	WELTIN CHELSEA R &	WELTIN TOBIN G	24 DURRELL ST	DOVER	NH	03820
24023-000000	2 FOREST ST	VALDEZ CHARLI G		41 CLINTON ST	PORTSMOUTH	NH	03801
24027-A00000	2-3 FLANDERS CT	INFLECTION PROPERTY INVESTMENTS LLC	C/O ALLEN GROUP LLC	5 NELSON ST	DOVER	NH	03820
24061-000000	1 FOREST ST	1-3 FOREST STREET LLC		PO BOX 372	GREENLAND	NH	03840
24002-I00000	45 BROADWAY	FOOTWEAR HOLDINGS LLC		35 BROADWAY	DOVER	NH	03820
04050-000000	28 PIERCE ST	MARTUSCELLO ANTHONY R	MARTUSCELLO VICKY L	315 LONG HILL RD	DOVER	NH	03820-6109
24027-000000	23 DURRELL ST	CENTI-PIZZUTILL DORIANA		23 DURRELL ST	DOVER	NH	03820
24030-000000	29 DURRELL ST	ELIZABETH LITTLE		29 DURRELL ST	DOVER	NH	03820
24002-E00000	35 BROADWAY	FOOTWEAR HOLDINGS LLC		35 BROADWAY	DOVER	NH	03820
04055-000000	40 BROADWAY	SULLIVAN PETER D & LINDA M CO-TRUSTEES	SULLIVAN PETER & LINDA REV LIV TRUST	81 MOUNT VERNON ST	DOVER	NH	03820
04053-000000	36 BROADWAY	FORBES ROBERT A		36 HARRISON AVE	PORTSMOUTH	NH	03801
24032-000000	21 WINTER ST	FRUDA 21 LLC		28 VILLAGE GREEN DR	OGUNQUIT	ME	03907
24002-A00000	121 OAK ST	BOSTON & MAINE RR		500 WATER STREET J-910	JACKSONVILLE	FL	32202
24020-000000	18 ESSEX ST	PAGE DIANE D & STEPHEN E, TRUSTEES	PAGE STEPHEN E & DIANE D LIVING TRUST	18 ESSEX ST	DOVER	NH	03820
24021-000000	6 FOREST ST	MCMANUS JAMES M		214 MIDDLE RD	DOVER	NH	03820
24033-000000	23 WINTER ST	SMITHNECK CAPITAL LLC		7 1/2 HORTON ST	NEWBURYPORT	MA	01950
24034-000000	24 WINTER ST	EQUINOX PROPERTIES LLC		8 GROVE ST STE 100	DOVER	NH	03820
		BERRY SURVEYING & ENGINEERING		335 SECOND CROWN POI	BARRINGTON	NH	03825

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com
January 5, 2026 Rev: 3-3-26

City of Dover Planning Board
Attention: Donna Benton, Director of Planning and Community Development
288 Central Ave
Dover, NH 03820

Re: Conditional Use Permits Request
Lot Redevelopment
Equinox Properties LLC
24 Winter Street
Tax Map 25, Lots 34

Chairperson & Members of the Dover Planning Board:

Pursuant to Zoning Regulations (Chapter 170-20 B,) Berry Surveying & Engineering (BS&E), on behalf of Equinox Properties LLC respectfully requests the City of Dover Planning Board approve the following Conditional Use Permits on the existing lot of record at the end of Winter Street.

• Minimum Lot Coverage less than 40%	Existing 7.25%	Proposed 13%
• 8-15' Front Build-To	Existing 6.3'	Proposed 6.6' to Structure (5.6' cantilever)
• 10' Side Setback	Existing 2.9'	Proposed 5.6'
• 15' Rear Setback	Existing 9.9'	Proposed 5.1' to Deck, 10' to Structure

Background:

The existing parcel contains a single-family home at the end of Winter Street which is located in the CBD-Residential Sub-District. With the exception of abutting rail line, the entire area contains multi-family residential uses which are permitted uses in the underlying zone. The site contains a small gravel parking area with an unknown number of spaces. Public utilities are available at the site. Much of the site is unusable due to the man-made fill slope to the ravine at the rear of the site.

1. Identification of Conditional Use Permits

The proposal is to remove the existing single-family home onsite and construct a four-unit townhouse style structure each with a dedicated garages. A small overflow / visitor parking area is proposed in the area of the existing gravel parking area. The redevelopment is being proposed in the most reasonable way possible in that in some instances CBD requirements cannot be met due to lot constraints while others are more nearly conforming to the requirements.

Minimum Lot Coverage: The minimum lot coverage requirement is not met the existing or proposed condition, however the proposed condition proposes a larger increase in coverage. Though the parcel is "large" it is the remnant parcel of subdivisions conducted prior to the turn

of the last century and contains steep slopes, largely man-made. Making the building larger to comply with the minimum would result in an imbalance in the ratio of building to parking and the lot dimensions are unsuitable for subsurface parking.

Front Build-To: The existing building face is non-compliant with the front build-to requirement and the proposed structure face is set in approximately the same place.

Side Setback: The existing structure side setback to the western boundary line is non-complaint. The proposed building becomes more compliant however does not meet the 10' side setback.

Rear Setback: The existing structure is 9.9' from the rear boundary line where 15' is required. The proposed structure is 10' from the rear boundary line however there are deck structures that sit within 5' of the rear line.

Below we show the project's compliance with the standards required to grant a Conditional Use Permit, and we provide justification for its approval.

2. Compliance with the following standards

a) That both public and private buildings and landscaping shall contribute to the physical definition of rights of way as civic spaces.

- **The proposed structure constitutes a redevelopment that provides additional street definition along more of the frontage of the site. This is done with a longer mass, with modern building design, in addition to a logical and operationally useful layout, while reducing congestion on the adjacent Winter Street.**

b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

- **The site proposes adequate parking onsite while reducing the on-street demand currenting found on Winter Street. This increases walkability as well as municipal operation.**

c) That the design of streets and buildings shall reinforce safe environments.

- **The design of the modern building has superior neighborhood optics when compared to the existing housing stock. This provides for a warmer invitation for residents.**

d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

- **The proposed development is located in a neighborhood that contains varying New England building and roof styles as well as varying window styles. The proposed structure proposes a gable roof with conventional mullion layout.**

e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy efficient methods.

- **The new structures will be built to the current building codes keeping energy efficiency in mind. The design of the building offers amenities not found on the rest of the street.**

f) That civic buildings and public gathering places shall be provided as locations that reinforce community identity and activity.
   - **While the building is not Civic in nature or use, the potential for connection in a micro community is developed through the use of open common spaces while offering distinctly separate personal use areas within the building.**

g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the city.
   - **This is not a civic building but provides a new construction infill density in an area of the city that contains a residential neighborhood with aged and underutilized housing stock.**

h) That the preservation and renewal of historic buildings shall be facilitated.
   - **There are no historic buildings as part of the application.**

i) That the harmonious and orderly evolution of urban areas shall be secured through the adoption of these regulations.
   - **A harmonious and orderly evolution of the urban area is secured in the redevelopment of the project site in the manner in which it is presented. Three additional residential units are provided on an underutilized parcel of land that provides a modern use and design while becoming more compliant with some of the requirements of the Zone.**

BERRY SURVEYING & ENGINEERING
335 Second Crown Pt. Rd., Barrington, NH 03825
(603) 332-2863 / (603) 335-4623 FAX
www.BerrySurveying.Com

Section B (2)
(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

- **The proposed use is multi-family residential within a neighborhood that is comprised of multi-family residential. The project is also located in the CBD-Residential sub-district.**

(b) The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

- **The proposed use will create a modest amount of residential traffic in the existing residential neighborhood. The proposal removes the need for on street parking.**

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

- **The proposed use is multi-family residential which does not create any additional noise or odors beyond what is found in the underlying district.**

3. Justification for approval of Conditional Use Permits

Redevelopment of the subdistrict is what the ordinance aims to do. Based on the site's constraints in size, width, and usable area, the proposed building is the most reasonable use of the property.

Thank you for your time and attention to this matter, and we hope you look favorably upon the requests.

Respectfully Submitted,

BERRY SURVEYING & ENGINEERING

Christopher R. Berry, LLS
Principal, President

BERRY SURVEYING & ENGINEERING
335 Second Crown Pt. Rd., Barrington, NH 03825
(603) 332-2863 / (603) 335-4623 FAX
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CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – COND-2026-0005

Application Type:	Conditional Use Permit
Applicant(s):	Berry Surveying & Engineering
Owner(s):	Equinox Properties LLC
Location:	24 Winter St. (Tax Map 24, Lot 34)
Date:	February 19, 2026

INTENT: Proposal is four (4) Conditional Use Permits (CUPs) requesting relief from the minimum lot coverage and from the front built-to, side, and rear setback requirements to construct a four-unit structure.

UNITS/LOTS PROPOSED: Four (4) units

AGENDA ITEM #: 2

ACREAGE: 0.27± ac. (or 11,564± s.f.)

ZONING DISTRICT: Central Business District Residential Sub-District (CBD-R)

EXISTING/PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Railroad tracks

ZBA ACTION: None.

PERMITS REQUIRED: Four City of Dover Conditional Use Permits (CUP) from required minimum lot coverage, and front built-to, side, and rear setback requirements.

WAIVERS REQUESTED: None.

ATTENDANCE:
Members:
Donna Benton, Planning
Erin Bassegio, Zoning
Matthew Gibbons, Engineering
Alex Mitrushi, Police Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Chris Berry, Berry Surveying & Engineering

Meeting resumed at: 11:03 a.m.

PLAN REVIEW:
Planning:
- Signed CUP application form missing from submission.
- CUP applications must be individually submitted to portal.
- Please include criteria from §170-20B(2) in narrative.

Engineering:
- General Comments:
  - Existing water main is 2”
  - Add stormwater treatment to parking lot before discharging down to ravine
  - Tap sewer main after SMH
  - Sewer main is shown in bold incorrectly, existing main is 8” PVC

Police:
- No comments.

Inspection Services:
- No comments.

Fire Department:
- No comments.

Business Development:
- No comments.

Planning Board:
- No comments.

Next Steps: Revise plans per comments above and resubmit for Planning Board.

Adjournment: J. Burdin moved to adjourn the meeting at 11:08 a.m. Seconded by A. Mitrushi. Vote: U/A.

DRAFT

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
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3-3-26

City of Dover Planning Board
Attention: Donna Benton, Director of Planning and Community Development
288 Central Ave
Dover, NH 03820
Re: TRC #1 Reply Memo
Conditional Use Permits Request
Lot Redevelopment
Equinox Properties LLC
24 Winter Street
Tax Map 25, Lots 34

Mrs. Benton,

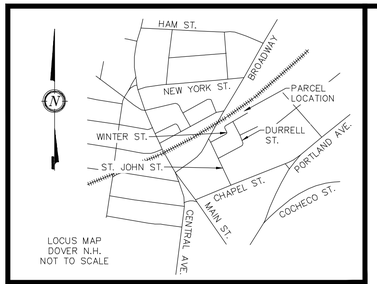
Below are the comments in *Italic* in the same order as received from the TRC, and our response below in **Bold.**

- *Signed CUP application form missing from submission.*
  - **Signed application is now bound to the project Narrative**
- *CUP applications must be individually submitted to portal.*
  - **A separate application has now been uploaded and or provided in PDF by email.**
- *Please include criteria from §170-20B(2) in narrative.*
  - **These criteria were added to the project narrative.**
- *Existing water main is 2"*
  - **Water line has now been annotated on the proposed CUP Plan.**
- *Add stormwater treatment to parking lot before discharging down to ravine*
  - **A small sediment trap – infiltration sump has been added to the plan with level lip.**
- *Tap sewer main after SMH*
  - **Sewer tap location has been modified as suggested.**
- *Sewer main is shown in bold incorrectly, existing main is 8" PVC*
  - **Partially addressed. An annotation has been added to the plan noting it to be an 8" PVC, however it is unclear how it is otherwise incorrect. With further clarity we can modify.**

Respectfully Submitted,

BERRY SURVEYING & ENGINEERING

Christopher R. Berry, LLS
Principal, President



LOCUS MAP
DOVER N.H.
NOT TO SCALE

WETLAND NOTES:

WETLANDS WERE DELINEATED BY JOHN P. HAYES, III. IN JUNE 2024 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

STATE OF NEW HAMPSHIRE · JOHN P. HAYES, III · CWS 18 · CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, III CWS #18

"DOWNEASTER" TRACK LINE

BOSTON & MAINE RAILROAD

N/F BOSTON AND MAINE R.R.
500 WATER STREET, J-910
JACKSONVILLE, FL 32202
TAX MAP 24, LOT 2

N/F FRUDA 21, LLC
28 VILLAGE GREEN DRIVE
OGUNQUIT, ME 03907
TAX MAP 24, LOT 35
S.C.R.D. BOOK 5074, PAGE 739

N/F FRUDA 21, LLC
28 VILLAGE GREEN DRIVE
OGUNQUIT, ME 03907
TAX MAP 24, LOT 32
S.C.R.D. BOOK 4997, PAGE 379

N/F SMITHNECK CAPITAL LLC
7 1/2 HORTON STREET
NEWBURYPORT, MA 01950
TAX MAP 24, LOT 33
S.C.R.D. BOOK 5102, PAGE 341

N/F VALDEZ, CHARLI G.
241 CLINTON STREET
PORTSMOUTH, NH 03801
TAX MAP 24, LOT 23
S.C.R.D. BOOK 4675, PAGE 229

N/F 1-3 FOREST STREET, LLC
P.O. BOX 372
GREENLAND, NH 03840
TAX MAP 24, LOT 61
S.C.R.D. BOOK 4659, PAGE 874

TAX MAP 24, LOT 34
TOTAL LOT AREA:
11,564 Sq.Ft.
0.27 Ac.
BUILDABLE AREA:
5,747 Sq.Ft.
0.13 Ac.

WINTER STREET
(PAVED 16'±)
(PUBLIC)

EXISTING SINGLE FAMILY HOUSE
ADDRESS: 24 WINTER STREET

EXISTING HOUSE

EXISTING HOUSE

EXISTING HOUSE

EXISTING CONCRETE PAD

EXISTING GRAVEL DRIVEWAY

EXISTING GRAVEL DRIVEWAY

EXISTING GRAVEL DRIVEWAY

EXISTING GRAVEL DRIVEWAY

CONCRETE STEPS & SIDEWALK

CONCRETE STEPS & SIDEWALK

GAS METER W/BOLLARDS

WOODEN RETAINING WALL

WOODEN RETAINING WALL

RAIL ROAD TIES

20" LOCUST TREE

ELECTRIC METER

3/4" REBAR W/ID CAP ~TBS~ (TYP)

9"x8" STONE BOUND ~FND~ (FLUSH)

APPROXIMATE LOCATION OF EXISTING WATERLINE

SMH RIM ELEV. 70.89

DMH RIM ELEV. 71.10

7" BIRCH TREE T.B.R.

8" PVC

TOP OF STEEP SLOPE > 2,000 Sq.Ft. CONSERVATION DISTRICT

EXISTING TREELINE

BUILDING SETBACK LINE (TYP)

OPEN

WOODED

EXISTING TREELINE (TYP)

GUARDRAIL

GUY WIRES

UP 6 COJS
TBM SPIKE IN POLE
N:256277.51
E:1196279.08
ELEV. 70.01

UP
NET 66/3S

EXISTING DRAINAGE EASEMENT TO CITY OF DOVER S.C.R.D. PLAN #114-88 & #115-48

CONCRETE DRAINAGE STRUCTURE

EASEMENT BY PRESCRIPTION

5' GRANITE CULVERT STRUCTURE

S 80°03'39" E 34.62'
N 87°53'23" E 34.32'
N 82°30'56" E 21.17'
S 68°38'23" E 6.80'
S 39°54'44" E 33.00'
S 79°44'21" W 139.47'
N 59°15'49" E 49.21'
N 59°15'49" E 21.64'
R=203.00' L=21.25
N 57°26'21" E 25.97'
S 15°42'18" W 50.96'
N 74°54'42" E 40.46'

N 16°07'00" W
MAGNETIC

N 83°53'00" E
NAD83 NH STATE PLANE

16'±

LEGEND:

- 3/4" REBAR W/ID CAP (TBS)
- IRON BOUND/IRON ROD (FND)
- STONE BOUND (FND)
- UTILITY POLE W/GUY WIRE
- ABUTTING PROPERTY LINE
- OHU — OVERHEAD UTILITIES
- ESL — EXISTING SEWER LINE
- EXISTING DRAINAGE EASEMENT
- GUARD RAIL
- 69 — MINOR CONTOUR LINE
- 70 — MAJOR CONTOUR LINE
- BUILDING SETBACK LINE
- TOP OF STEEP SLOPES
- EXISTING TREE LINE
- TEMPORARY BENCHMARK (TBM)
- SEWER MANHOLE (SMH)
- DRAIN MANHOLE (DMH)

FND	FOUND
TYP	TYPICAL
TBS	TO BE SET
E.O.P.	EDGE OF PAVEMENT
E.O.G.	EDGE OF GRAVEL
T.B.R.	TO BE REMOVED
S.C.R.D.	STRAFFORD COUNTY REGISTRY OF DEEDS

- GRAVEL AREA
- 20% OR GREATER SLOPES

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR NOR THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.

SOILS:

SfE – SUFFIELD, SILT LOAM, 15 TO 35 PERCENT SLOPES

SEE: USDA/NRCS WEBSOIL

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW WAYS ARE SHOWN.

3-3-26

CHRISTOPHER R. BERRY L.L.S. 1624 DATE

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

NOTES:

1.) OWNER: EQUINOX PROPERTIES, LLC
8 GROVE STREET, SUITE 100
DOVER, NH 03820

2.) TAX MAP 24, LOT 34

3.) LOT AREA: 11,564 Sq. Ft., 0.27 Ac.

4.) S.C.R.D. BOOK 4869, PAGE 221

5.) ZONING: CBD-RESIDENTIAL SUB-DISTRICT
CONSERVATION DISTRICT
SETBACKS:
FRONT PRIMARY BUILD TO ~ 8-15'
FRONT SECONDARY BUILD TO ~ 8-10'
SIDE ~ 10'
REAR ~ 15'
MIN. LOT SIZE: N/A
MIN. LOT COVERAGE: 40%
MIN. LOT FRONTAGE: 75'
FRONTAGE BUILD-OUT: 40% MIN.
BUILDING HEIGHT: 3 STORY MAX., 2 STORY MIN.

6.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF TAX MAP 24, LOT 34 AS OF THE DATE OF THE SURVEY.

7.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN. FLOOD HAZARD REF: FEMA, COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

8.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

9.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST, 2024 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

10.) ON-SITE TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED IN AUGUST, 2024. OFF-SITE TOPOGRAPHY IS SHOWN USING NH COASTAL 2019 DEM.

11.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

CITY OF DOVER PLANNING DEPARTMENT FILE #COND-2026-0005

REVISION	DATE	DESCRIPTION
#1	3-3-26	UPDATE PER TRC COMMENT

EXISTING CONDITIONS PLAN
LAND OF
EQUINOX PROPERTIES LLC
24 WINTER STREET
DOVER, N.H.
TAX MAP 24, LOT 34

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : JANUARY 5, 2026
FILE NO. : DB 2024 - 067

STATE OF NEW HAMPSHIRE · No. 1624 · LICENSED LAND SURVEYOR · CHRISTOPHER R. BERRY · SIGNATURE

SHEET 1 OF 2

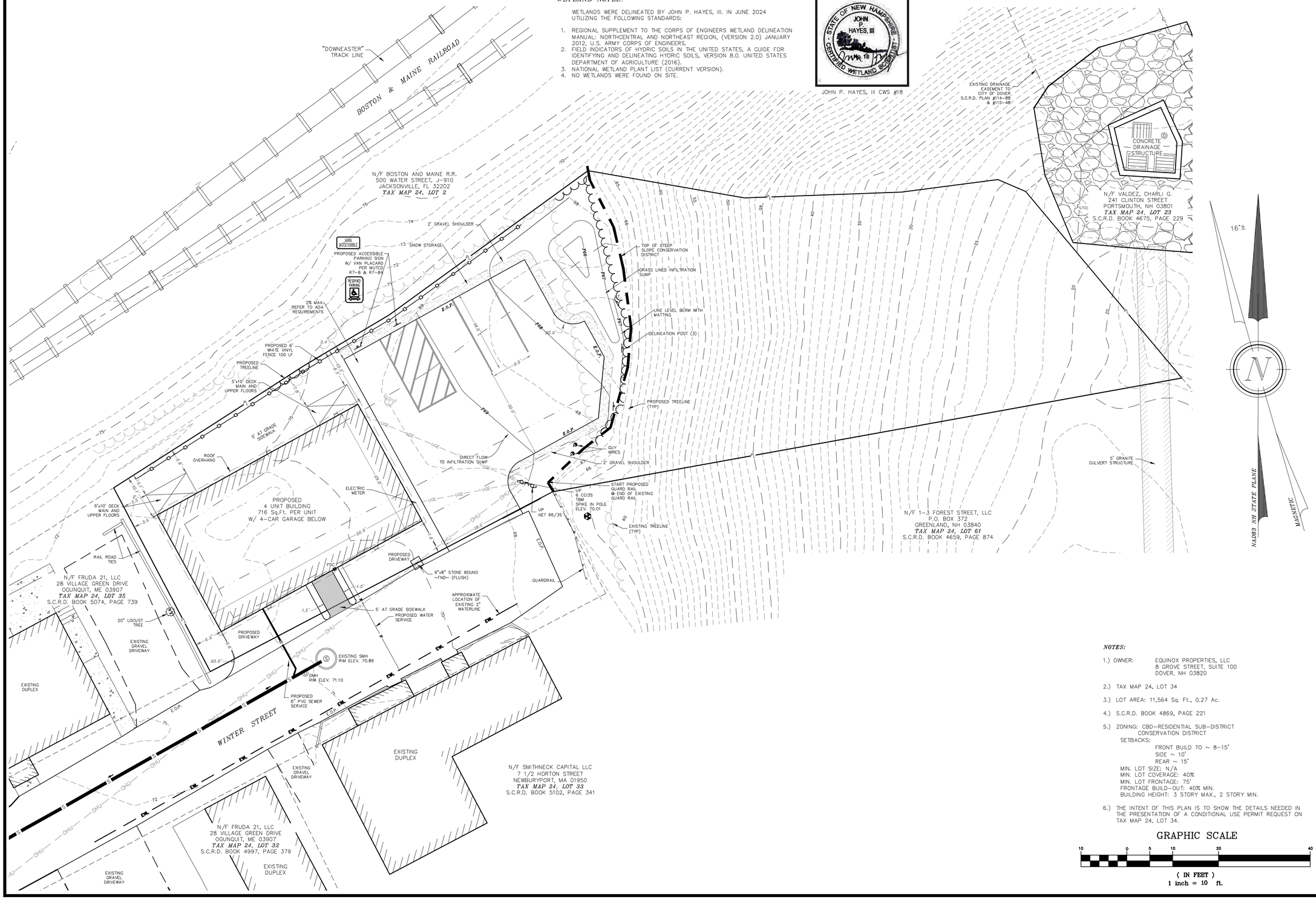
WETLAND NOTES:

WETLANDS WERE DELINEATED BY JOHN P. HAYES, III. IN JUNE 2024 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

STATE OF NEW HAMPSHIRE · JOHN P. HAYES, III · CWS 18 · CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, III CWS #18



NOTES:

1.) OWNER: EQUINOX PROPERTIES, LLC
8 GROVE STREET, SUITE 100
DOVER, NH 03820

2.) TAX MAP 24, LOT 34

3.) LOT AREA: 11,564 Sq. Ft., 0.27 Ac.

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5.) ZONING: CBD-RESIDENTIAL SUB-DISTRICT
CONSERVATION DISTRICT
SETBACKS:
FRONT BUILD TO ~ 8-15'
SIDE ~ 10'
REAR ~ 15'
MIN. LOT SIZE: N/A
MIN. LOT COVERAGE: 40%
MIN. LOT FRONTAGE: 75'
FRONTAGE BUILD-OUT: 40% MIN.
BUILDING HEIGHT: 3 STORY MAX., 2 STORY MIN.

6.) THE INTENT OF THIS PLAN IS TO SHOW THE DETAILS NEEDED IN THE PRESENTATION OF A CONDITIONAL USE PERMIT REQUEST ON TAX MAP 24, LOT 34.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

CITY OF DOVER PLANNING DEPARTMENT FILE #COND-2026-0005

REVISION	DATE	DESCRIPTION
#1	3-3-26	UPDATE PER TRC COMMENT

CONDITIONAL USE LAYOUT PLAN
LAND OF
EQUINOX PROPERTIES LLC
24 WINTER STREET
DOVER, N.H.
TAX MAP 24, LOT 34

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : JANUARY 5, 2026
FILE NO. : DB 2024 - 067

4 UNITS

APARTMENT BUILDING

24 WINTER STREET

DOVER, NEW HAMPSHIRE

CODE SUMMARY

Project: 3-Story Residential Building
Location: Dover, New Hampshire
Date: September 2025
Prepared By: Nick Isaak, AIA

Applicable Codes & Standards (NH Adoptions)

2021 IBC – International Building Code (with New Hampshire amendments)

2021 IRC – International Residential Code (with New Hampshire amendments)

NFPA 101 (2018) – Life Safety Code

NFPA 13R – Sprinkler Systems in Low-Rise Residential Occupancies

NFPA 72 – Fire Alarm Code

2023 NEC – National Electrical Code

2018 IECC – International Energy Conservation Code (per NH adoption)

ASCE 7-16 – Structural Loads

Building Description

Stories: 3

Floor Area: 1,450 SF per floor (4,350 SF total)

Construction Type: Type V-B (unprotected wood frame)

Sprinklers: NFPA 13R throughout

Occupancy (IBC):

First floor garage → Group S-2

Second & third floors → Two 1-BR apartments each → Group R-2 (4 units total)

Occupancy (NFPA 101):

Apartments → Residential, Apartment Occupancy (Ch. 30)

Garage → Storage, Low Hazard (Ch. 42)

Height & Area

Allowable (V-B, R-2, sprinklered): 4 stories / 60 ft (IBC Table 504.4)

Proposed: 3 stories / ~35 ft → Complies

Allowable area: >7,000 SF per story (Table 506.2)

Proposed: 1,450 SF → Complies

Fire Protection

NFPA 13R sprinklers provided (IBC §903.3.1.2; NFPA 101 §30.3.5)

Dwelling unit separations: 1-hr walls/floors (IBC §420; NFPA 101 §30.3.3)

Garage separation: 1-hr horizontal assembly (IBC §508.4; NFPA 101 §30.3.3.2)

Smoke alarms: NFPA 72 (IBC §907.2.11; NFPA 101 §30.3.4.5)

CO detection: Required with garage (IBC §915; NFPA 101 §9.8.1.4)

Means of Egress

Occupant Load: ~8 occupants per floor (IBC Table 1004.1.2; NFPA 101 §7.3.1.2)

Number of Exits: 1

IBC: Single exit permitted ≤4 units/story in sprinklered R-2 (§1006.3.4(2))

NFPA 101: Single exit permitted ≤4 units/story with direct access (§30.2.4.1)

Travel Distance: ≤125 ft permitted (IBC Table 1017.2; NFPA 101 §30.2.6.2)

Stairs: Min. 36 in clear width, 1-hr shaft (IBC §1011, §1023; NFPA 101 §7.2.2)

Corridors: Rating not required for ≤10 occ. in sprinklered bldg (IBC §1020.1 Ex.; NFPA 101 §30.3.6.1)

Accessibility

One accessible entrance required (IBC §1105; NFPA 101 §30.2.2.3)

Upper floors exempt without elevator

Structural & Energy
Per IBC Ch. 16 & ASCE 7-16 (snow, wind, seismic) – stamped by NH PE

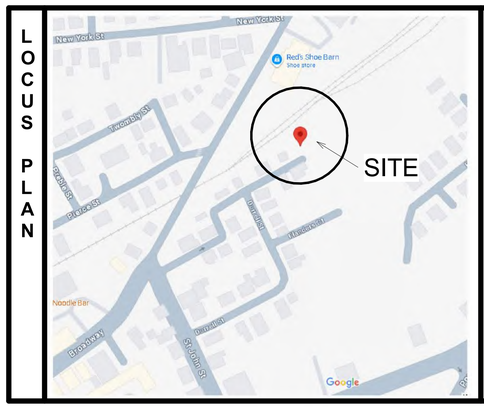
IECC 2018 compliance required for building envelope & MEP

Summary

✓ Height/area compliant
✓ NFPA 13R sprinklers provided
✓ 1-hr separations (units, garage/dwelling)
✓ Single exit per story permitted (IBC §1006.3.4(2); NFPA 101 §30.2.4.1)
✓ Smoke/CO detection required
✓ Structural design per ASCE 7



1 3D View 1





PROJECT SUMMARY:

THE PROPOSED PROJECT IS A NEW 3 STORY APARTMENT BUILDING. THE BUILDING FOOTPRINT IS 1,450 SF AND THE TOTAL BUILDING AREA IS 4,350 SF. THE UPPER TWO FLOORS ARE PROPOSED AS RESIDENTIAL APARTMENTS (**R-2**) USE AND THE FIRST FLOOR IS GARAGE. THE BUILDING IS DESIGNED TO **TYPE VB** CONSTRUCTION. THE STRUCTURE IS A WOOD FRAME AND THE FLOORS ARE WOOD. THE BUILDING IS SPRINKLERED. THE PROJECT WILL ALSO INCLUDE ALL NECESSARY LANDSCAPE AND SITE IMPROVEMENTS.

SURVEY INFORMATION:

ALL REFERENCES TO EASEMENTS, PROPERTY LINES, WET LANDS, EXISTING CONDITIONS, BUILDING LOCATION, ETC. WERE OBTAINED FROM CIVIL DRAWINGS PROVIDED BY BERRY ENGINEERING

DRAWING LIST

SHEET NUMBER	SHEET NAME
CS1	COVER SHEET
CS2	CODE, ABBREV. & LEGENDS
CS3	SPECIFICATIONS
A0.01	FLOOR, CEILING, ROOF ASSEMBLIES
A0.02	WALL TYPES
A0.03	ASSEMBLY DETAILS
A0.04	FIRE PENETRATION SCHEDULE
A0.05	UNIT PLANS (ANSI)
A0.06	FOUNDATION DETAILS
A0.07	FRAMING DETAILS
A0.08	FRAMING PLANS
A0.09	SITE PLAN
A1.00	BASEMENT - FLOORPLAN
A1.01	LEVEL 1 - FLOORPLAN
A1.02	LEVEL 2 - FLOORPLAN
A1.03	ROOF PLAN
A2.01	ELEVATIONS
A3.01	SECTIONS
A6.25	WINDOW FLASHING SEQUENCE WRB
A7.00	INTERIOR DETAILS

OWNER/DEVELOPER

KAB REALTY MANAGEMENT
8 GROVE STREET
DOVER, NH
CONTACT: BILL GOLDSTEIN
PHONE: 603.742.5300

ARCHITECT

ISAAK DESIGN, PLLC
35 OYSTER RIVER RD.
DURHAM, NH 03824
CONTACT: NICK ISAAK, AIA
PHONE: 603.969.6711

CIVIL

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT RD.
BARRINGTON, NH 03825
CONTACT: CHRIS BERRY, P.E.
PHONE: 603.332.2863

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LICENSED ARCHITECT
NICHOLAS ISAAK III
No. 3202
THE STATE OF NEW HAMPSHIRE

ARCHITECT
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No.	Description	Date

24 WINTER STREET
DOVER, NH

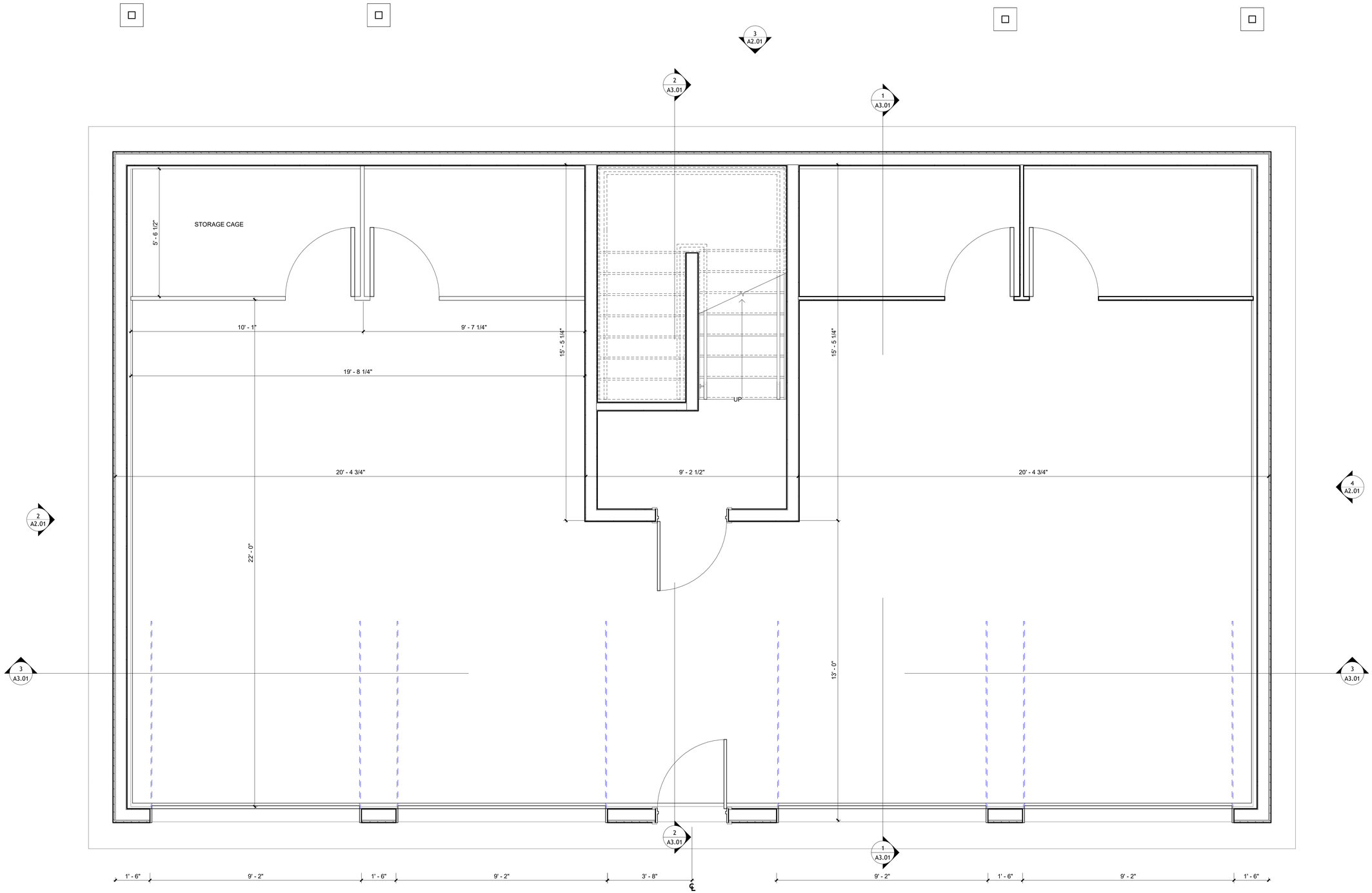
COVER SHEET

Project number	2442
Date	9/18/25
Drawn by	NI
Checked by	NI

CS1

Scale 1/4" = 1'-0"

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1 BASEMENT - FLOORPLAN
1/2" = 1'-0"

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A2.01

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URBAN DESIGN
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No.	Description	Date

24 WINTER STREET
DOVER, NH

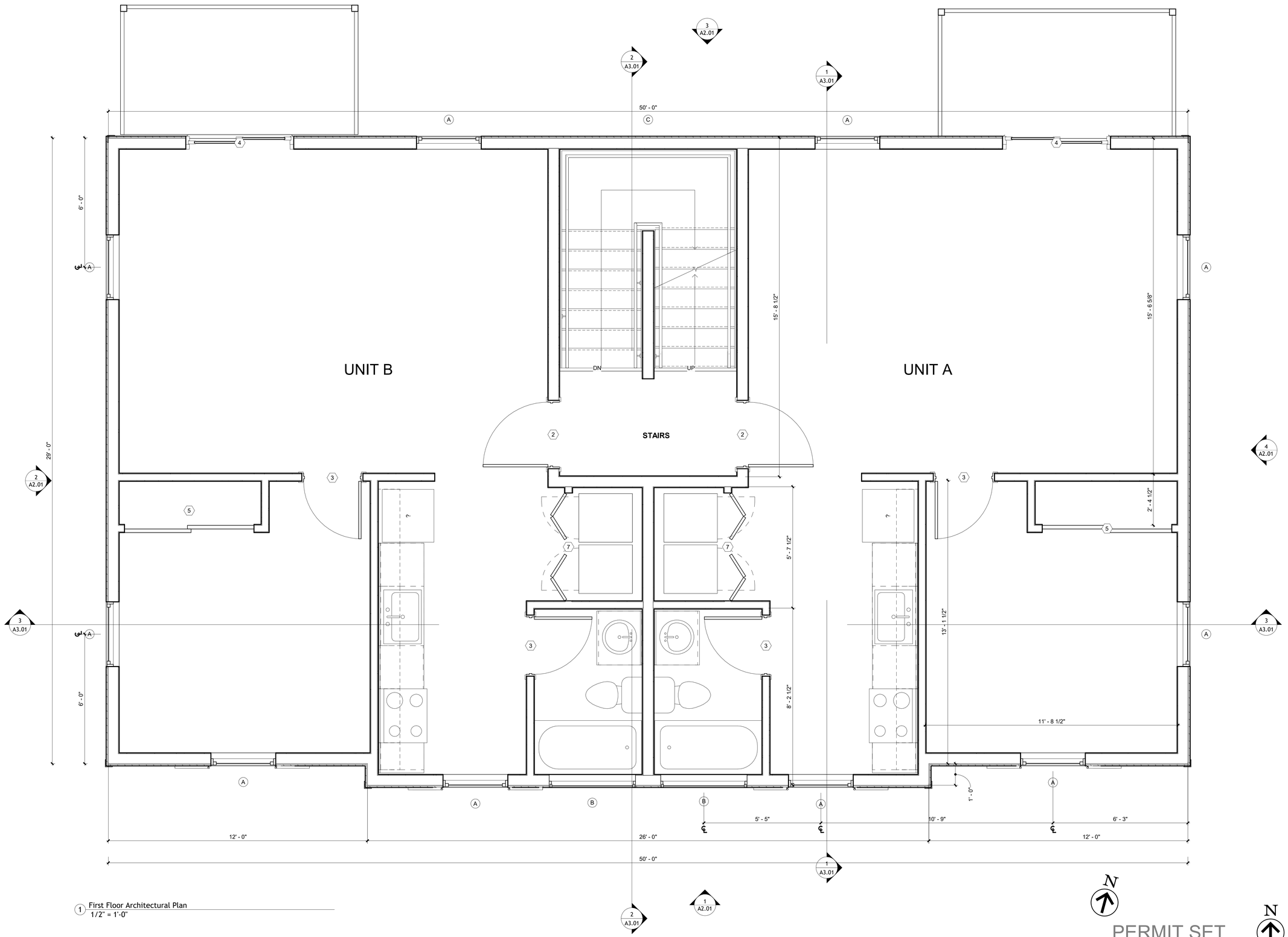
BASEMENT - FLOORPLAN

Project number	2442
Date	9/18/25
Drawn by	Author
Checked by	Checker

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Scale 1/2" = 1'-0"

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1 First Floor Architectural Plan
1/2" = 1'-0"

PERMIT SET

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No.	Description	Date

24 WINTER STREET
DOVER, NH

LEVEL 1 - FLOORPLAN

Project number	2442
Date	9/18/25
Drawn by	Author
Checked by	Checker
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1 Second Floor Architectural Plan
1/2" = 1'-0"

PERMIT SET

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No.	Description	Date

24 WINTER STREET
DOVER, NH

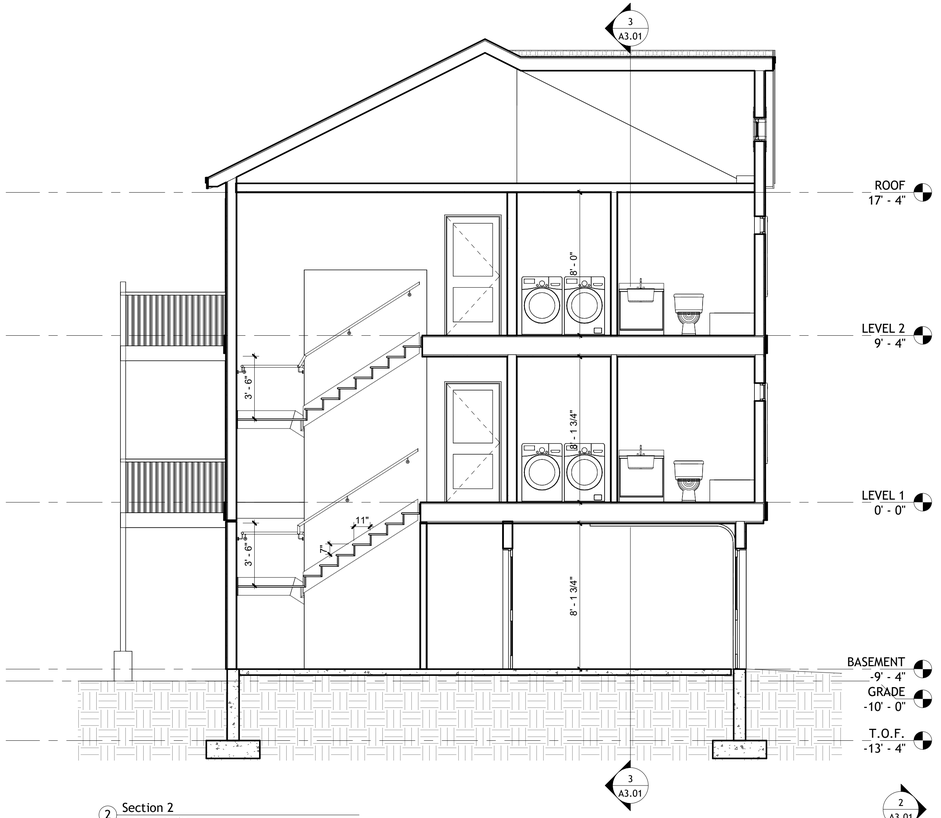
LEVEL 2 - FLOORPLAN

Project number	2442
Date	9/18/25
Drawn by	Author
Checked by	Checker

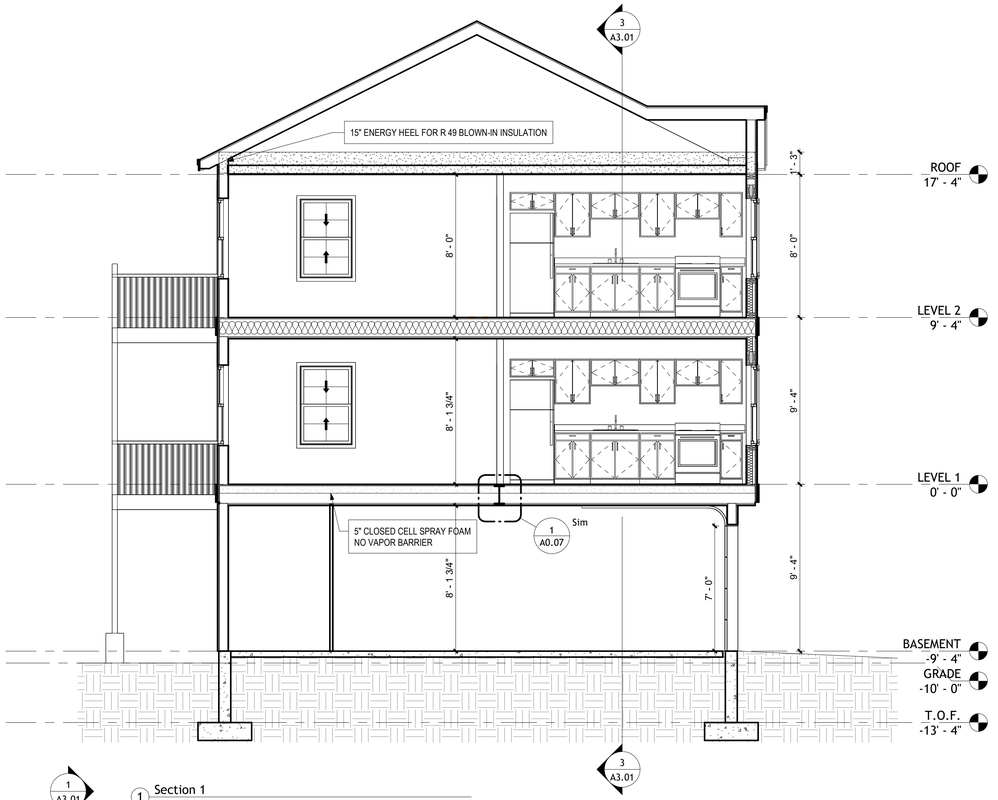
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2 Section 2
1/4" = 1'-0"



1 Section 1
1/4" = 1'-0"



3 Section 3
1/4" = 1'-0"

PERMIT SET

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No.	Description	Date

24 WINTER STREET
DOVER, NH

SECTIONS

Project number	2442
Date	9/18/25
Drawn by	NI
Checked by	Checker

A3.01

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CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0012

Application Type:	Conditional Use Permit
Applicant(s):	Equinox Properties, LLC
Owner(s):	Equinox Properties, LLC
Location:	24 Winter Street (Map 24, Lot 34)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the Central Business District Residential Sub-District (CBD-R) build-to line requirements of 8-15 feet, where a build-to line of 6.6-5.6 feet is proposed due to the building's cantilever.

UNITS PROPOSED: One (1) lot – no change. Four (4) units proposed, one (1) existing.

AGENDA ITEM #: 4-C

ACREAGE: 0.27 ± ac., 11,564 s.f.

ZONING DISTRICT: CBD-R

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Railroad tracks

PERMITS REQUIRED FOR THIS CASE: Four City of Dover CUPs from required minimum lot coverage, and front built-to, side, and rear setback requirements.

WAIVERS REQUESTED: None

ZBA ACTION: N/A for proposal

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

ATTACHMENTS: Application and narrative, CUP Plan

Summary of Request and Background

The applicant is requesting a CUP for relief of the CBD-R build-to line requirements of 8-15 feet, where a build-to line of 6.6-5.6 feet is proposed due to the building's cantilever.

The site, located at the end of 24 Winter Street, is just north of a quarter of an acre and currently holds a single-family home. The applicant is proposing a four (4) unit building on the site with a four (4) car garage beneath. The surrounding neighborhood hosts a mixture of residential densities, ranging from single-family homes to similar four-unit structures.

The lot contains a substantial amount of area containing steep slopes, a significant portion of which is man-made, meaning the lot's buildable area is constrained to a large degree.

Pursuant to underlying zoning regulations, all new primary structures within the CBD-R zone requires a build-to line of 8-15 feet, or the distance range in which the façade of the building must fall from the front boundary line. Per this CUP request, the applicant is proposing a build-to line of approximately 5.6' – 6.6', due to the building's positioning on the lot. Currently, the existing single-family home lies just under 7' from the front property line, constituting a legal nonconformance. In this case, the applicant seeks to maintain a similar build-to line to what is currently existing.

The Technical Review Committee reviewed the application at their February 19, 2026 meeting. *(minutes attached)*

Consistency with Land Use Regulations

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

See reverse →

(h) That the preservation and renewal of historic buildings shall be facilitated.
(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.
(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

This project is similar to other lots in the immediate area in terms of building massing and distance to the front property line. Coupled with the topographic constraints the lot presents, staff is in favor of granting this Conditional Use Permit.

Consistency with Land Use Regulations – Central Business District, Residential Sub-District

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the CBD-R. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.
(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.
(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

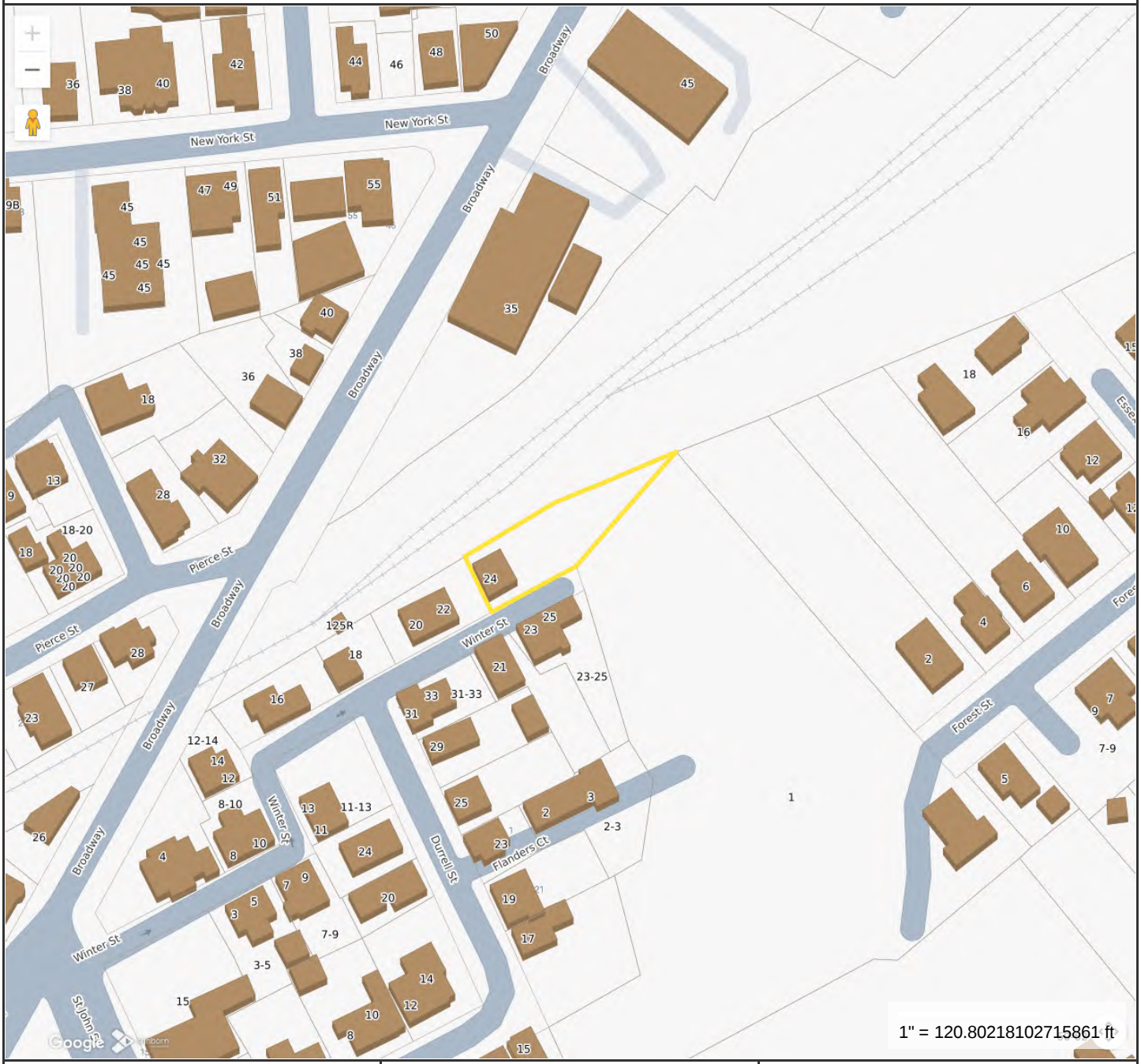
Staff agrees with the applicant that the above three criteria have been met.

Staff Recommendation:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following conditions:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Provide physical and digital copies (including CAD) of complete plan set, which additionally shall include:
   1.1. The owner's signatures;
   1.2. The Planning File #COND-2026-0012;
   1.3. The stamp and signature of the LLS on the final plans; and
2. Receive Conditional Use Permits from the CBD-R District's Front Build-to Line, Side Setback, and Rear Setback (COND-2026-0005, 13, and 14)
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0012 24 WINTER STREET



Property Information

Location	24 WINTER ST
Owner	EQUINOX PROPERTIES LLC
Land Use	101R
Zoning Code	CBD-R
Property Id	24034-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0012
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/04/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: 8-15' front build-to existing 6.3'; proposed 6.6' to structure (5.6' cantilever)

Parcel:	24034-000000 Main	**Address:**	24 Winter St Dover, 03820 Main	**Zone:**	CBD-R(Central Business District - Reside RM-U(Residential - Urban Density)

Plan Preparer
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Owner
William Goldstein
Home: (603) 742-5300
Mobile: (603) 531-8158

Permit Custom Fields

Select Permit Type	Central Business District - Residential	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	CBD-R	New Change in Impervious/Paved Area (sq ft)	0	Work	Redevelopment of the site for a proposed 4-unit building
permitstatefed	None				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Permit Snapshot Report.pdf	03/04/2026 16:02	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
NOT INVOICED	Planning General Application Fee	$200.00	$0.00
	Total for Invoice NOT INVOICED	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/04/2026 16:27
Confirm application complete v.1	Generic Action		03/04/2026 16:27
~~Conditional Use Review v.1~~	Receive Submittal		03/04/2026 16:27
Planning Board v.1		03/04/2026 16:27	
Planning Board Agenda v.1	Task	03/04/2026 16:27	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		

Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Equinox Properties, LLC Telephone # 603-742-5300

Address of Applicant: 8 Grove Street, Dover, NH 03820

E-Mail Address: billtgolds@aol.com

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: Same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # .34

Address of Property: 24 Winter Street

Zoning District(s) CBD-Res Overlay District(s) Conservation

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Redevelopment of the site for a proposed 4-Unit Building.

- Minimum Lot Coverage less than 40% Existing 7.25% Proposed 13%
- 8-15' Front Build-To Existing 6.3' Proposed 6.6' to Structure (5.6' cantilever)
- 10' Side Setback Existing 2.9' Proposed 5.6'
- 15' Rear Setback Existing 9.9' Proposed 5.1' to Deck, 10' to Structure

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: None

Name of Professional That Prepared Plans: Berry Surveying & Engineering, Christopher R. Berry, LLS

Address 335 Second Crown Point Road, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 1624 E-mail address: crberry@berrysurveying.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 2-3-26

Signature of Applicant (if different from owner): _____ Date: 2-3-26

Signature of Agent: _____ Date: 2-3-26

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-26

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0013

Application Type:	Conditional Use Permit
Applicant(s):	Equinox Properties, LLC
Owner(s):	Equinox Properties, LLC
Location:	24 Winter Street (Map 24, Lot 34)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the Central Business District Residential Sub-District (CBD-R) side setback minimum of 10 feet, where a setback of 5.6 feet is proposed (2.9 existing existing).

UNITS PROPOSED: One (1) lot – no change. Four (4) units proposed, one (1) existing.

AGENDA ITEM #: 4-D

ACREAGE: 0.27 ± ac., 11,564 s.f.

ZONING DISTRICT: CBD-R

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Railroad tracks

PERMITS REQUIRED FOR THIS CASE: Four City of Dover CUPs from required minimum lot coverage, and front built-to, side, and rear setback requirements.

WAIVERS REQUESTED: None

ZBA ACTION: N/A for proposal

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

ATTACHMENTS: Application and narrative, CUP Plan

Summary of Request and Background

The applicant is requesting a Conditional Use Permit (CUP) for relief of the Central Business District Residential Sub-District's (CBD-R) side setback minimum of 10 feet, where a setback of 5.6 feet is proposed (2.9 existing existing).

The site, located at the end of 24 Winter Street, is just north of a quarter of an acre and currently holds a single-family home. The applicant is proposing a four (4) unit building on the site with a four (4) car garage beneath. The surrounding neighborhood hosts a mixture of residential densities, ranging from single-family homes to similar four-unit structures.

The lot contains a substantial amount of area containing steep slopes, a significant portion of which is man-made, meaning the lot's buildable area is constrained to a large degree.

Per underlying CBD-R regulations, all primary structures must have a minimum side setback of 10'. Currently, the existing single-family home constitutes a legal nonconforming structure, as it currently sits approximately 2.9' from the side boundary line. The applicant is seeking a side setback range of 5.6' – 6.2'.

The Technical Review Committee reviewed the application at their February 19, 2026 meeting. *(minutes attached)*

Consistency with Land Use Regulations

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

See reverse →

(h) That the preservation and renewal of historic buildings shall be facilitated.
(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.
(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Staff would note that the majority of the structures in this neighborhood are noncompliant with underlying zoning setbacks. Coupled with the topographic constraints the lot presents, staff is in favor of granting this Conditional Use Permit.

Consistency with Land Use Regulations – Central Business District, Residential Sub-District

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the CBD-R. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.
(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.
(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

Staff agrees with the applicant that the above three criteria have been met.

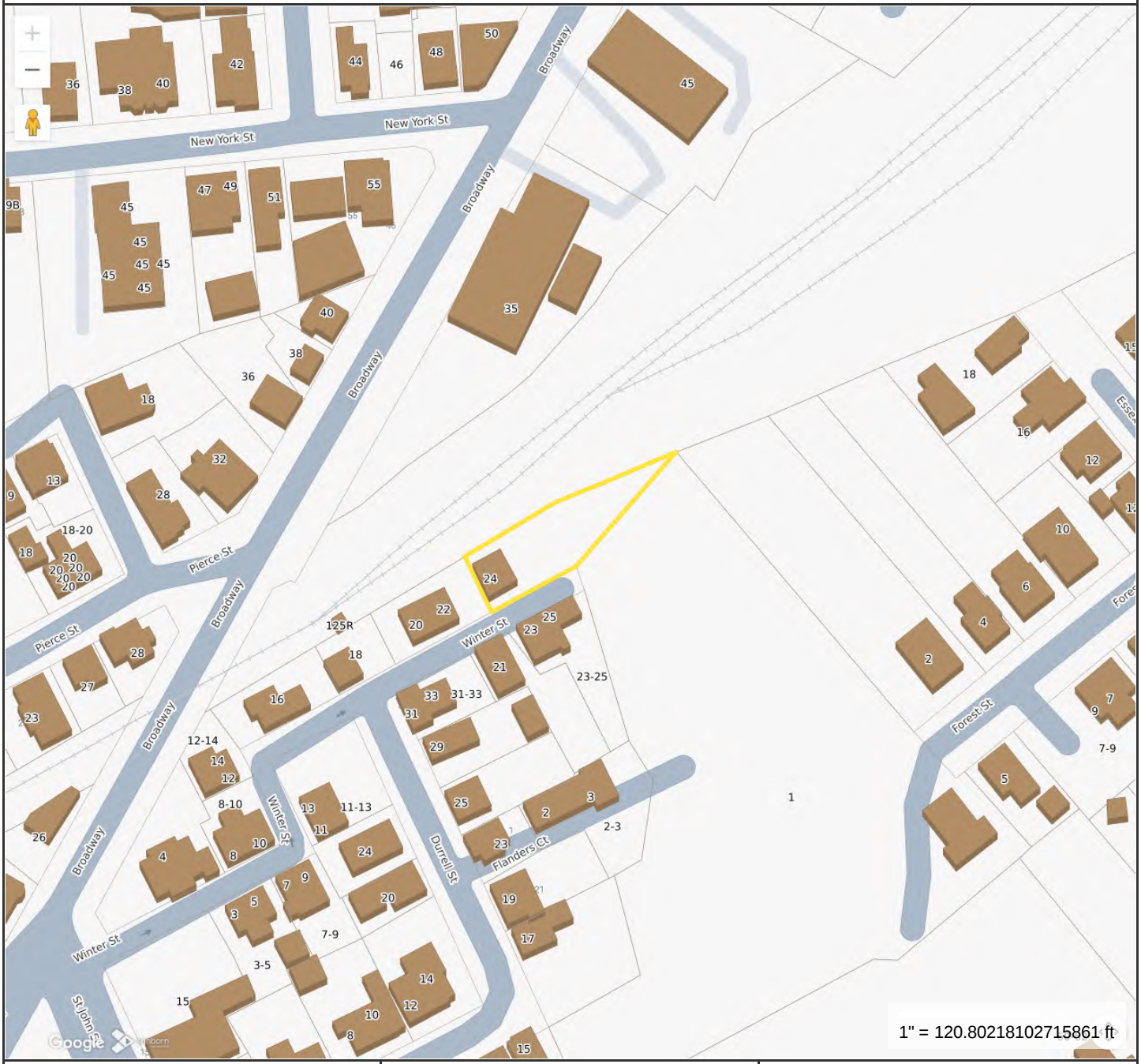
Staff Recommendation:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following conditions:

Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Provide physical and digital copies (including CAD) of complete plan set, which additionally shall include:
   1.1. The owner's signatures;
   1.2. The Planning File #COND-2026-0013;
   1.3. The stamp and signature of the LLS on the final plans; and
2. Receive Conditional Use Permits from the CBD-R District's Front Build-to Line, Side Setback, and Rear Setback (COND-2026-0005, 12, and 14)
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0013 24 WNTER STREET



Property Information

Location	24 WINTER ST
Owner	EQUINOX PROPERTIES LLC
Land Use	101R
Zoning Code	CBD-R
Property Id	24034-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0013
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/04/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	
Description:	10' side setback, existing 2.9', proposed 5.6'				

Parcel: 24034-000000 Main	**Address:** 24 Winter St Dover, 03820 Main	**Zone:** CBD-R(Central Business District - Reside RM-U(Residential - Urban Density)

Plan Preparer
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Owner
William Goldstein
Home: (603) 742-5300
Mobile: (603) 531-8158

Permit Custom Fields

Select Permit Type	Central Business District - Residential	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	CBD-R	New Change in Impervious/Paved Area (sq ft)	0	Work	Develop the site with a 4-unit building.
permitstatefed	none				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Permit Snapshot Report.pdf	03/04/2026 16:54	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee		Fee Amount	Amount Paid
INV-2026000745	Planning General Application Fee		$200.00	$0.00
		Total for Invoice INV-2026000745	$200.00	$0.00
INV-2026000746	Planning Legal Notice		$120.00	$0.00
		Total for Invoice INV-2026000746	$120.00	$0.00
		Grand Total for Permit	**$320.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/04/2026 16:56
Confirm application complete v.1	Generic Action		03/04/2026 16:56
~~Conditional Use Review v.1~~	Receive Submittal		03/04/2026 16:56
Planning Board v.1		03/04/2026 16:56	
Planning Board Agenda v.1	Task	03/04/2026 16:56	03/11/2026 10:02
Invoice for Notices v.1	Task	03/11/2026 10:02	03/11/2026 10:02
Send Notices v.1	Task	03/11/2026 10:03	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		

Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Equinox Properties, LLC Telephone # 603-742-5300

Address of Applicant: 8 Grove Street, Dover, NH 03820

E-Mail Address: billtgolds@aol.com

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: Same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # .34

Address of Property: 24 Winter Street

Zoning District(s) CBD-Res Overlay District(s) Conservation

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Redevelopment of the site for a proposed 4-Unit Building.

- Minimum Lot Coverage less than 40% Existing 7.25% Proposed 13%
- 8-15' Front Build-To Existing 6.3' Proposed 6.6' to Structure (5.6' cantilever)
- 10' Side Setback Existing 2.9' Proposed 5.6'
- 15' Rear Setback Existing 9.9' Proposed 5.1' to Deck, 10' to Structure

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: None

Name of Professional That Prepared Plans: Berry Surveying & Engineering, Christopher R. Berry, LLS

Address 335 Second Crown Point Road, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 1624 E-mail address: crberry@berrysurveying.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 2-3-26

Signature of Applicant (if different from owner): _____ Date: 2-3-26

Signature of Agent: _____ Date: 2-3-26

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-26

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0014

Application Type:	Conditional Use Permit
Applicant(s):	Equinox Properties, LLC
Owner(s):	Equinox Properties, LLC
Location:	24 Winter Street (Map 24, Lot 34)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the Central Business District Residential Sub-District (CBD-R) rear setback minimum of 15 feet, where a setback of 5.1 feet is proposed (9.9 feet existing).

UNITS PROPOSED: One (1) lot – no change. Four (4) units proposed, one (1) existing.

AGENDA ITEM #: 4-E

ACREAGE: 0.27 ± ac., 11,564 s.f.

ZONING DISTRICT: CBD-R

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Railroad tracks

PERMITS REQUIRED FOR THIS CASE: Four City of Dover CUPs from required minimum lot coverage, and front built-to, side, and rear setback requirements.

WAIVERS REQUESTED: None

ZBA ACTION: N/A for proposal

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

ATTACHMENTS: Application and narrative, CUP Plan

Summary of Request and Background

The applicant is requesting a Conditional Use Permit (CUP) for relief of the Central Business District Residential Sub-District's (CBD-R) rear setback minimum of 15 feet, where a setback of 5.1 feet is proposed (9.9 feet existing).

The site, located at the end of 24 Winter Street, is just north of a quarter of an acre and currently holds a single-family home. The applicant is proposing a four (4) unit building on the site with a four (4) car garage beneath. The surrounding neighborhood hosts a mixture of residential densities, ranging from single-family homes to similar four-unit structures.

The lot contains a substantial amount of area containing steep slopes, a significant portion of which is man-made, meaning the lot's buildable area is constrained to a large degree.

Per underlying CBD-R regulations, all primary structures must have a minimum side setback of 10'. Currently, the existing single-family home constitutes a legal nonconforming structure, as it currently sits approximately 9.9' – 11.8' from the rear boundary line. The applicant is seeking a rear setback range of approximately 5', but only for the four (4) decks associated with each unit – the majority of the building itself will remain the required 10' from the rear property boundary.

The Technical Review Committee reviewed the application at their February 19, 2026 meeting. *(minutes attached)*

Consistency with Land Use Regulations

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.
(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.
(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.
(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.
(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.
(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.
(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

See reverse →

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0014

Application Type:	Conditional Use Permit
Applicant(s):	Equinox Properties, LLC
Owner(s):	Equinox Properties, LLC
Location:	24 Winter Street (Map 24, Lot 34)
Meeting Date:	March 24, 2026

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Staff would note that several of the surrounding structures in this neighborhood are non-compliant with underlying rear setbacks. Coupled with the topographic constraints the lot presents, staff is in favor of granting this Conditional Use Permit.

Consistency with Land Use Regulations – Central Business District, Residential Sub-District

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the CBD-R. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

Staff agrees with the applicant that the above three criteria have been met.

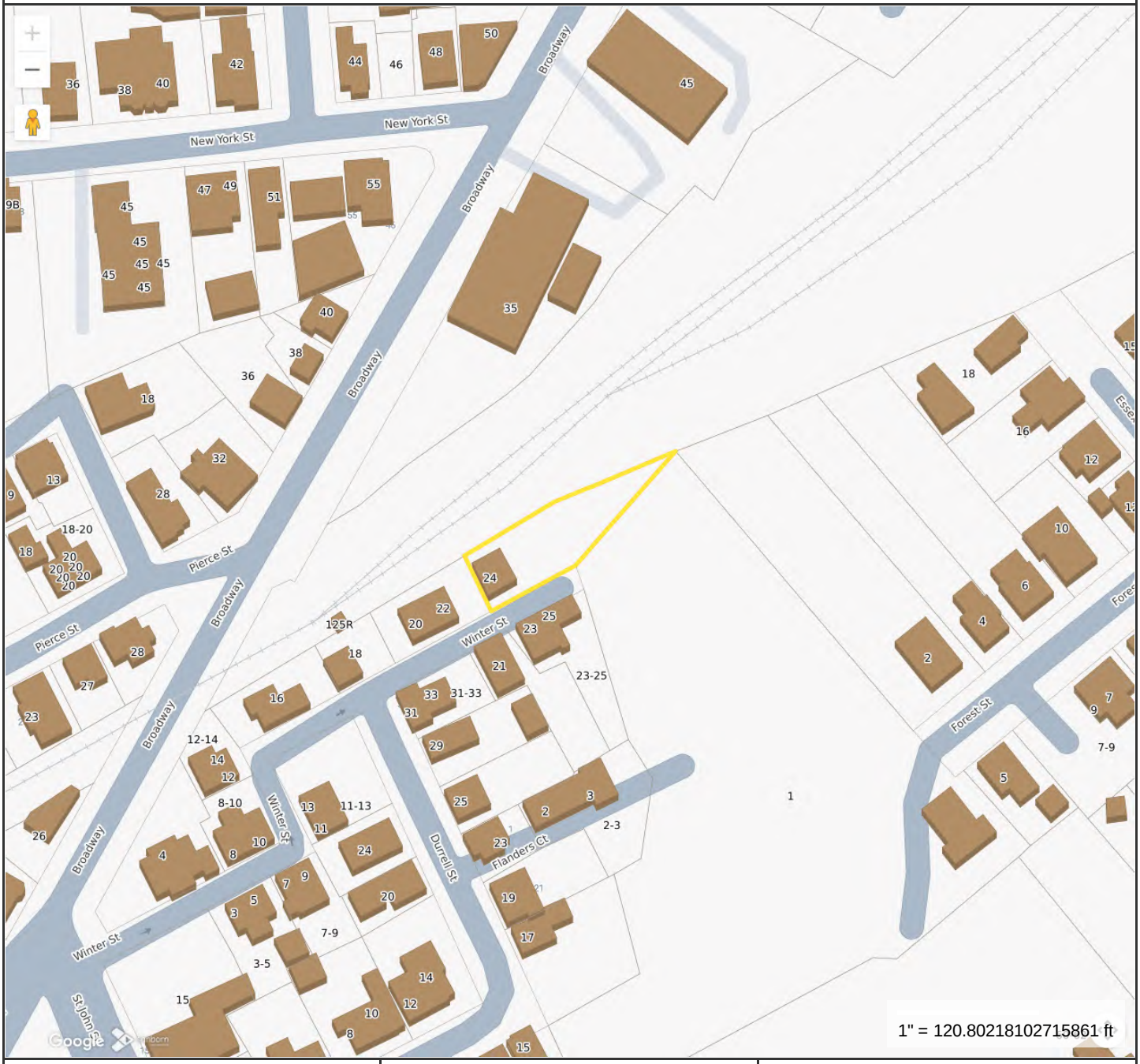
Staff Recommendation:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following conditions:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Provide physical and digital copies (including CAD) of complete plan set, which additionally shall include:
   1.1. The owner's signatures;
   1.2. The Planning File #COND-2026-0014;
   1.3. The stamp and signature of the LLS on the final plans; and
2. Receive Conditional Use Permits from the CBD-R District's Front Build-to Line, Side Setback, and Rear Setback (COND-2026-0005, 12, and 13)
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0014 24 WINTER STREET



Property Information

Location	24 WINTER ST
Owner	EQUINOX PROPERTIES LLC
Land Use	101R
Zoning Code	CBD-R
Property Id	24034-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0014
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/04/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: 15' rear setback, existing 9.9', proposed 5.1' to deck, 10' to structure

Parcel: 24034-000000 Main	**Address:** 24 Winter St Dover, 03820 Main	**Zone:** RM-U(Residential - Urban Density) CBD-R(Central Business District - Reside

Plan Preparer
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Owner
William Goldstein
Home: (603) 742-5300
Mobile: (603) 531-8158

Permit Custom Fields

Select Permit Type	Central Business District - Residential	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	CBD-R	New Change in Impervious/Paved Area (sq ft)	0	Work	Develop the site with a 4-unit building.

Attachment File Name	Added On	Added By	Attachment Group	Notes
Permit Snapshot Report.pdf	03/04/2026 17:27	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
NOT INVOICED	Planning General Application Fee	$200.00	$0.00
	Total for Invoice NOT INVOICED	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/05/2026 12:30
Confirm application complete v.1	Generic Action		03/05/2026 12:30
~~Conditional Use Review v.1~~	Receive Submittal		03/05/2026 12:30
Planning Board v.1		03/05/2026 12:30	
Planning Board Agenda v.1	Task	03/05/2026 12:30	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
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Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		

PERMIT SNAPSHOT REPORT (COND-2026-0014)

Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Equinox Properties, LLC Telephone # 603-742-5300

Address of Applicant: 8 Grove Street, Dover, NH 03820

E-Mail Address: billtgolds@aol.com

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: Same

PROPERTY INFORMATION

Assessor's Map # 24 Lot(s) # .34

Address of Property: 24 Winter Street

Zoning District(s) CBD-Res Overlay District(s) Conservation

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☒ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Redevelopment of the site for a proposed 4-Unit Building.

- Minimum Lot Coverage less than 40% Existing 7.25% Proposed 13%
- 8-15' Front Build-To Existing 6.3' Proposed 6.6' to Structure (5.6' cantilever)
- 10' Side Setback Existing 2.9' Proposed 5.6'
- 15' Rear Setback Existing 9.9' Proposed 5.1' to Deck, 10' to Structure

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: None

Name of Professional That Prepared Plans: Berry Surveying & Engineering, Christopher R. Berry, LLS

Address 335 Second Crown Point Road, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 1624 E-mail address: crberry@berrysurveying.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 2-3-26

Signature of Applicant (if different from owner): _____ Date: 2-3-26

Signature of Agent: _____ Date: 2-3-26

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 2-3-26

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #TRAN-2026-0003

Application Type:	Transfer of Development Rights
Applicant(s):	Corey MacKoul
Owner(s):	Corey MacKoul
Location:	89 Stark Ave. (Assessor's Map 17, Lot 38)
Meeting Date:	March 24, 2026

INTENT: Proposal is to purchase two (2) residential units through Transfer of Development Rights (TDR).

AGENDA ITEM #: 4-F

FILE: TRAN-2026-0003

LOTS/UNITS PROPOSED: Two residential units are being proposed through TDR (one unit existing, four units total)

OWNER/APPLICANT: Corey MacKoul

LOCATION: 89 Stark Ave. (Assessor's Map 17, Lot 38)

ACREAGE: 0.88± acres (38,452 s.f.)

ZONING DISTRICT: R-12

EXISTING/PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential

WAIVERS REQUESTED: N/A

ZBA ACTION: None.

PERMITS REQUIRED: N/A

TECHNICAL REVIEW COMMITTEE: N/A

CONSERVATION COMMISSION: N/A

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

ATTACHMENTS: TDR Plan, Application Materials.

Summary of Request and Background:
The applicant is proposing to purchase two residential units through TDR, for a project total of four residential units, with one single-family home currently existing on site.

Within the R-12 District, underlying zoning requires that single-family density is used for TDR, unless two-family structures are proposed. As the proposal includes four single-family units, the single-family formula was used, resulting in a base density of two units, requiring the purchase of an additional two units via TDR to get to the four units being proposed.

Staff has reviewed the proposal and supplied a TDR memo to the applicant.

Review by the Technical Review Committee was not required for the TDR proposal, but would be required for Site Review.

Consistency with Land Use Regulations - TDR
§170-29 provides for additional density to be purchased through Transfer of Development Rights, provided that four criteria are met: The proposal is consistent with the Master Plan; is compatible with the land uses on neighboring lots; is created on property served by public water and sanitary sewer; and is not seeking relief caused by additional density.

Staff notes that the applicant identified consistency with goals within the Vision and Conservation and Open Space Chapter of the Master Plan. The applicant specifically noted consistency with goals for balanced housing and in-fill development in walkable areas served by municipal services.

The applicant described the project site and proposal within the context of the surrounding area and the underlying R-12 District, highlighting that the site is surrounded by a mixture of single-family and two-family homes.

Staff notes the applicant is proposing a density ratio of one unit per ±9,613 square feet of developable land, a comparable figure to densities on surrounding lots, and less dense than parcels located at 73, 81, and 90 Stark Ave. and 1 Woodland Ave.

The lot is served by municipal water and sewer services and does not contain any protected wetlands, wetland buffers, or Conservation District area, and the parcel falls outside of all Groundwater Protection zones.

STAFF RECOMMENDATION - TDR:
Staff supports this request in-part, preferring to see a total of three (3) units rather than four (4). That said, staff appreciates the proposal of single-family homes with parking for each, the number of spaces being above and beyond what regulations mandate, in addition to the

See reverse →

provided traffic memorandum which clarifies sight distances and traffic not being impacted. Prior to final approvals, however, staff would like to receive clarification on the final lot coverage being proposed.

Therefore, the Planning Department recommends the Planning Board accept the application, open the public hearing, make findings, and vote to approve the TDR request or request further information. Should the Board vote to grant the TDR request, staff recommend it does so with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Granting TDR:

1. A Site Plan application is required to be submitted for review and approval by the TRC and Planning Board;
2. Payment of TDR fees;
3. Payment of water/sewer investment fees at time of request for service;
4. Revise and submit plan set to include:
   - 4.1. Owners' signatures;
   - 4.2. Correct locus plan sheet (*Court St. shown instead);*
   - 4.3. Surveyed plan signed and stamped by a LLA;
   - 4.4. The following note:
     - 4.4.1. "This site plan uses the Transfer of Development Rights ordinance which allows for relief to the setbacks, lot area, frontage, density and intensity of the development. The Board granted TDR relief to purchase two units for a maximum total of four units on the subject lot."

To: Tritech Engineering
From: Donna Benton, AICP
Cc: Corey MacKoul
Date: March 12, 2026
Revised: March 19, 2026
Re: TDR 89 Stark Ave.

ISSUE:
In February 2020, the Board recommended amendments to the Transfer of Development Rights (TDR) Ordinance. In June 2020, the Planning Board approved the amendments and on July 22, 2020, the City Council ratified them. One element is the requirement for staff to draft a review statement on the need for a sketch plan. Since then the criteria for TDR has also been amended.

INTENT:
This memo will serve as part of the staff report.

GOALS:
Provide background on balancing development vs. conservation needs and current housing shortage, and describe the TDR applications in Dover.

Background
On behalf of your client, you submitted a TDR plan for a residential project consisting of four (4) single-family dwelling units, two (2) of which are to be purchased via TDR.

The subject parcel, Assessor's Map 17, Lot 38, resides within the Medium Density Residential (R-12) District. The R-12 District allows for a mix of commercial and residential uses.

Within the R-12 District, underlying zoning requires that single-family density is used for TDR, unless duplexes are proposed. As the proposal includes four (4) single-family units, the single-family formula was used, resulting in a base density of two (2) units, requiring the purchase of an additional two (2) units via TDR.

Staff performed this review based upon the information below, and is now providing the required staff report (Chapter 170-29 E.(4)a).

Project Information

Project:	89 Stark Ave., TDR
Where:	89 Stark Ave. (Assessor's Map 17, Lot 38)
What:	Four (4) units total. Two (2) units requested to be purchased through TDR.
Acres:	0.88± ac. (38,452± s.f.)
Zone:	R-12 District
Public Water:	Lot is served by municipal water.
Public Sewer:	Lot is served by municipal sewer.
Units:	Four (4) total units are proposed, with one (1) unit currently existing. As the proposal is for four single-family units, the single-family density formula was applied, with a yield of two (2) base units, requiring the purchase of two (2) TDR units.
Relief:	As presented, no additional relief outside of TDR has been identified as required for this project.

Staff Comment
When reviewing projects, staff review the context, discuss options with the applicant, and advise on the feasibility of requesting the purchase or exchange before or after designing a fully laid out plan.

In reviewing this project, we note:

- Traffic
    - The site is to be accessed via a private accessway (approx. 145' long)
    - The Stark Avenue neighborhood is primarily medium-density residential in use but the transition to Dover Point Road functions as a collector roadway linking the Dover Point peninsula to downtown Dover, carrying steady moderate traffic typical of a commuter corridor feeding the Spaulding Turnpike and central Dover. As such, Staff requests a standard Traffic Memorandum demonstrating the project's impact.
    - The property has immediate sidewalk access, providing a direct pedestrian link to the downtown core.
    - The site sits centrally within the Medium Density Residential (R-12) District. This is evidenced by significant amount of single-family homes surrounding the property.

- COAST bus service is available at numerous stops along the corridor, providing direct access toward downtown Dover and the surrounding region.

- Layout/topography
  - The site currently holds one (1) single-family home. The site is surrounded, primarily, by single-family homes, though the transition of Stark Ave. to Central Ave. and Dover Point Rd. situates the site's location roughly between a 0.33 mile distance to both the downtown mixed-use zoning districts to the north and commercial and mixed-use zoning districts to the south.
  - The applicant is proposing a ratio of 1 unit per 9,613 square feet of developable land (four units).
  - Staff would request the applicant verify and provide the cumulative lot coverage of the proposed development. As a reference, the maximum lot coverage requirement for the underlying R-12 District is 30%.
  - As the proposal provides a two-car garage for each of the three (3) units, and two (2) exterior parking spaces for the existing single-family home, staff notes that the parking requirement for this proposal has been satiated.
  - Staff would recommend trying to move the proposed bioretention area further away from an existing dwelling.
  - The proposed structures are very near the lot's side setback, with the existing single-family dwelling being nonconforming in terms of front and side setbacks.

- Environmental
  - The majority of the lot is moderately wooded. The applicant's proposal includes the removal of many of the trees on the lot although the plan indicates the rear-most 80' – 100' of the lot will remain wooded. The remaining vegetation (applicant to confirm) sufficiently screens the abutter to the rear (Map 17, Lot 38A), and in conjunction, the applicant is proposing a 6' tall stockade fence to screen the abutters to either side.
  - To staff's knowledge, the parcel does not contain any protected wetlands, wetland buffers, or Conservation District area, and the parcel falls outside of all Groundwater Protection zones.
  - The R-12 District is characterized by its medium density, requiring a minimum lot size of 12,000 square feet, 100 feet of frontage, and a maximum underlying density of 2 units per lot, with varying lot size requirements for 2-family structures, depending on whether they're newly constructed, or converted from an existing single-family home.

Staff Recommendation

Staff supports this request in-part, preferring to see a total of three (3) units rather than four (4). That said, staff appreciates the proposal of single-family homes with parking for each above and beyond what regulations mandate. On March 18th, staff received the requested standard traffic memorandum. In addition, renderings of the proposed single-family units and potentially a streetscape rendering.

PLAN SNAPSHOT REPORT TRAN-2026-0003
FOR CITY OF DOVER, N.H.

Plan Type:	Transfer	**Project:**		**App Date:**	02/27/2026
Work Class:	Transfer of Development Rights	**District:**	None	**Exp Date:**	05/03/2026
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: The applicant proposes to develop the parcel with 3 additional single family units, of which 2 of these units are proposed to be purchased through the Transfer Development Rights ordinance.

Parcel: 17038-000000 Main	**Address:** 89 Stark Av Dover, NH Main	**Zone:** R-12(Residential - Medium Density)

Applicant
Tritech Engineering Corp.
755 Central Avenue
Dover, NH 03820
Business: (603) 742-8107

Owner
Koul Contracting LLC
Corey MacKoul
8 HULL AV
DOVER, 03820
Mobile: (603) 630-4113

Plan Custom Fields

Parcel Map/Lot	17/38	Parcel Zoning Overlay		Parcel Zoning	R-12
trandevdetail	The applicant proposes to develop the parcel with 3 additional single family units, of which 2 of these units are proposed to be purchased through the Transfer Development Rights ordinance.	Deed Book	5248	Deed Page	342
Property Address	89 Stark Avenue	Deed Date	03/07/2025	Owner Name	Corey MacKoul
Existing Parcel Size (Ac)	0.883	Owner Address	8 Hull Avenue Dover, NH 03820	Owner Phone	6036304113
Existing Parcel Size (sqft)	38463.5	Owner EMail	corey@koulcontracting.com	Parcel Feedback	
Reference Plan ID Number:		Request Type	Residential	trandevpermits	NHDES Sewer Connection Permit - Not yet applied for.
Project Zone	Residential	New Change in Impervious/Paved Area (sq ft)	9750	Quantity of Non-Restricted Units	2
Relief Sought	Unit increase				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Robert_Stowell_2/27/2026.jpg	02/27/2026 12:25	Stowell, Robert		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000681	Planning Transfer of Dev Rights Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000681	$200.00	$0.00
NOT INVOICED	Transfer of Dev Rights Fee - Non-Restricted	$36,000.00	$0.00
	Planning Impervious Paved Area Fee	$682.50	$0.00
	Total for Invoice NOT INVOICED	$36,682.50	$0.00
	Grand Total for Plan	**$36,882.50**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		02/27/2026 15:53	
Confirm application complete v.1	Generic Action		02/27/2026 15:54
Technical Review Committee Meeting Agenda v.1	Task	02/27/2026 15:53	

PLAN SNAPSHOT REPORT (TRAN-2026-0003)

Land Use Plan Technical Review v.1	Receive Submittal
Technical Review Committee Meeting v.1	Hold Meeting
Planning Board v.1	
Planning Board Agenda v.1	Task
Invoice for Notices v.1	Task
Send Notices v.1	Task
Planner Creates Staff Recommendations v.1	Plan Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Plan Activity
NOD Sent to Applicant v.1	Create Report
Final Plan v.1	
Land Use Plan Stamped and Signed v.1	Generic Action
Recording v.1	Task
Document Archival v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Building Official Notifies Address v.1	Generic Action
Pre-Con Meeting v.1	Hold Meeting
Create/Link to Records v.1	
Create / Link to Permit - Building Major v.1	Create Sub Permit
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit

City of Dover, New Hampshire
TRANSFER OF DEVELOPMENT RIGHTS APPLICATION

[Revision Date: September 26, 2024]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Corey MacKoul Telephone # 603-630-4113

Address of Applicant: 8 Hull Avenue, Dover, NH

E-Mail Address: corey@koulcontracting.com

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 17 Lot(s) # 38

Address of Property: 89 Stark Avenue

Zoning District(s) R-12 Overlay District(s) _____

Existing Use of Property: Single family residential

New impervious area (in s.f.): 9,750

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

☒ Residential ☐ Residential (reduced size) ☐ Industrial | ☒ Purchase ☐ Land Preservation

Relief sought (Check All That Apply):

☐ Lot Size ☐ Frontage ☐ Setback ☒ Increase by 2 units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

The applicant proposes to develop the parcel with 3 additional single family units, of which 2 of these units are proposed to be purchased through the Transfer of Development Rights ordinance.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Discharge - not yet submitted

Name of Professional That Prepared TDR Plans: Robert J. Stowell

Address 755 Central Ave, Dover, NH Telephone #: 603-742-8107

Professional License #: 9903 E-mail address: rjs@tritecheng.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 02/27/2026

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____, PRESIDENT Date: 02/27/2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 02/27/2026

CITY OF DOVER TRANSFER OF DEVELOPMENT RIGHTS
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
17	38	Corey MacKoul	8 Hull Avenue, Dover, NH

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Robert J. Stowell	Tritech Engineering Corporation	755 Central Ave, Dover, NH
Michael Mariano	Highland Soil Services	75 Prospect Street, Somersworth, NH

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan review fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☒ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $200
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $200

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $10.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $10.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The amount due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

TRAN-2026-0003 **89 STARK AVENUE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
17037-A00000	1 HAYES LN	BOOS JAMES J JR & JENNIFER M TRUSTEES	BOOS JAMES AND JENNIFER M REVOCABLE TRUS	1 HAYES LANE	DOVER	NH	03820
17037-B00000	3 HAYES LN	POULIN ERIC A &	RANAURO EMILY K	3 HAYES LN	DOVER	NH	03820
17037-H00000	5 HAYES LN	NASBERG ALAN D		5 HAYES LANE	DOVER	NH	03820-4216
17117-000000	2 GOVERNOR SAWYER LN	FUGARAZZO JAMES S		2 GOVERNOR SAWYER LN UNIT A	DOVER	NH	03820
17037-G00000	6 HAYES LN	FORD BRUCE A & PAULA M CO-TRUSTEES	FORD BRUCE & PAULA REVOCABLE TRUST 2021	6 HAYES LN	DOVER	NH	03820
17037-C00000	4 HAYES LN	SEUBERT WILLIAM I &	PIETRAK SIDNEY	4 HAYES LN	DOVER	NH	03820
17041-000000	93 STARK AV	LANZER ROBERT A	LANZER KRISTEN A	93 STARK AVENUE	DOVER	NH	03820
17116-000000	90 STARK AV	GOVERNOR SAWYER HOUSE CONDOMINIUM	C/O XAVIER GUAY	90 STARK AVE # 3	DOVER	NH	03820
17038-A00000	3 KEATING AV	TRUFANT ERIC CARL &	TRUFANT TARA LEE	3 KEATING AVE	DOVER	NH	03820
17113-000000	1 WOODLAND RD	CUMMINGS JENNA B	CUMMINGS DAMON L & THERESA E	1 WOODLAND RD	DOVER	NH	03820
17039-001000	105 STARK AV	PYE PHILLIP RAYMOND JR		105 STARK AV	DOVER	NH	03820
17116-000001	90 STARK AV	PAQUETTE CHRISTOPHER	BELLOTTIE VALERIE	90 STARK AVE UNIT 1	DOVER	NH	03820
17116-000003	90 STARK AV	GUAY XAVIER		90 3 STARK AV	DOVER	NH	03820
17116-000004	90 STARK AV	RILEY BRITTANY		90 STARK AV APT 4	DOVER	NH	03820-4296
17039-000000	103 STARK AV	CARLONI TRAVIS R &	CARLONI MELISSA A	103 STARK AV	DOVER	NH	03820
17044-000000	73 STARK AV	CORRINGHAM JOSHUA S		12 BRIARWOOD LN	DOVER	NH	03820
17118-000000	100 STARK AV	MURPHY KEVIN J WITH RTODD	MURPHY PAMELA S WITH RTODD	100 STARK AV	DOVER	NH	03820
17037-F00000	2 HAYES LN	GERACI PAUL P &	GERACI DIANE E	2 HAYES LN	DOVER	NH	03820-4213
17040-000000	97 STARK AV	DAY GEORGE P		97 STARK AVENUE	DOVER	NH	03820
17042-000000	87 STARK AV	EASTER JOHN O		87 STARK AVENUE	DOVER	NH	03820
17117-001000	STARK AV	INFINGER SCOTT		99 TEN ROD RD	ROCHESTER	NH	03866
17043-000000	81 STARK AV	GRAY DUSTIN &	GRAY DANA	76 UPPER FACTORY RD	DOVER	NH	03820-5802
17116-000002	90 STARK AV	VANBENSCHOTEN NANCY L		90 STARK AVE UNIT 2	DOVER	NH	03820-4253
17034-A00000	8 HAYES LN	MURPHY PATRICK J	MURPHY KARA A	8 HAYES LN	DOVER	NH	03820
17037-D00000	7 HAYES LN	KNIGHT GREGORY J & GRETCHEN M TRUSTEES	KNIGHT FAMILY REVOCABLE TRUST OF 2017	7 HAYES LN	DOVER	NH	03820
17038-000000	89 STARK AV	MACKOUL COREY		8 HULL AVE	DOVER	NH	03820
		TRITECH ENGINEERING CORPORATION	ROBERT J STOWELL	755 CENTRAL AVENUE	DOVER	NH	03820
		HIGHLAND SOIL SERVICES	MICHAEL MARIANO	75 PROSPECT STREET	SOMERSWOF	NH	03878

TRITECH
ENGINEERING CORPORATION

755 Central Avenue
Dover, New Hampshire 03820

Telephone 603.742.8107
Facsimile 603.742.3830

February 27, 2026

Donna Benton, AICP
Director of Planning & Community Development
City of Dover, Planning Department
288 Central Avenue
Dover, New Hampshire 03820

Subject: TDR Application
Dover Tax Map 17 Lot 38
89 Stark Avenue
Dover, New Hampshire
Job No. 25136

Dear Donna:

On behalf of the applicant/ property owner Corey Mackoul, we are submitting this application for Transfer of Development Rights (TDR). The property is shown as City of Dover Tax Map 17 Lot 38, is located on the west side of Stark Avenue and contains 0.883 acres. The property falls within the R12 District. The original two-bedroom house was built in 1850 and will be renovated as part of this development.

The applicant proposes the further development of Tax Map 17 Lot 38. This development will include the renovation of the existing single-family house. The development will also include the construction of 3 single family homes. The TDR base density for the property is two units. Therefore, two of these homes are proposed to be purchased under the TDR ordinance. Tritech Engineering has conducted an on-site survey and completed a topographic analysis, and the results are depicted on the attached plans.

The existing house will continue to utilize the existing utilities, and we have two new parking spaces with access from the proposed road. The (3) three new homes will all utilize city water, city sewer and underground electric and telephone for Stark Avenue.

The existing curb cut onto Stark Avenue will be abandoned. The proposed road will be located slightly south from the existing driveway. Our site development plan set contains sight distance plans, sheets SD-1 & SD-2, which depict available sight distance to the south of 400 feet and to the north of 300 feet. Based on AASHTO standards, this exceeds the recommended sight distance for the posted speed limit of 30 mph.

We look forward to meeting with the Planning Board at their March 24th meeting and discussing this development plan.

Enclosed please find;

- Seven (7) Copies of this Transfer of Development Rights Submittal Letter.
- Seven (7) Copies of the Transfer of Development Rights Application.
- Seven (7) Copies of the Transfer of Development Rights Narrative.
- One (1) Copy of the Full-Size Transfer of Development Rights Site Development Plan Package.
- Six (6) Copies of the Half-Size Transfer of Development Rights Site Development Plan Package.

Please advise should you have any questions.

Very truly yours,
TRITECH ENGINEERING CORP.

Robert J. Stowell, P.E., L.L.S.
President

RJS / cmp
Enclosures
\\25136 TDR Only Ltr

TDR NARRATIVE

for

COREY MACKOUL

89 Stark Avenue
Dover New Hampshire
March 2026

Chapter 170-27.G.(8) explains the criteria the Planning Board considers when determining the applicability of TDR regulations. "Regardless of the method utilized, any other provision in this Chapter to the contrary, the density or intensity of development of a receiving parcel may be increased by the Transfer of Development Rights so long as the increase in density or intensity:

- *Is consistent with the Master Plan.*
- *Is not incompatible with the land uses on neighboring lots (eg. a multifamily building in a single family neighborhood).*
- *Is created on property served by public water and sanitary sewer.*
- *Any relief sought should not be caused by the additional density.*

Consistency with the Master Plan:

The proposed development aligns with the following key elements of Dover's Master Plan:

- High quality, low impact growth: This project supports responsible development, preserving the city's rural areas while concentrating residential and commercial activity near the urban core.
- Downtown vibrancy: By creating a walkable, family and pet friendly neighborhood, this project contributes to Dover's vision of an inviting and lively downtown area.
- Diversity of housing options: Our proposal supports the city's goal of providing housing for people of various ages, incomes, and backgrounds.

Addressing Housing Needs:

This project aligns with Dover's Master Plan, particularly the vision of "facilitating a balanced supply of safe and attractive housing for individuals and families of all incomes." Our intent is to redevelop the site using the Transfer of Development Rights (TDR) mechanism, which allows us to create a housing solution that meets the city's goals while respecting the site's characteristics.

Dover, like many municipalities, is facing a shortage of housing across all affordability levels, especially in what is commonly referred to as the "Missing Middle"- smaller-scale, higher density housing. Our proposal for an "In-Fill" development offers a solution by increasing density on a smaller footprint, prioritizing walkability, low-impact development, and affordability. This type of development is explicitly encouraged in the city's Master Plan.

A core value of the Distinctly Dover Vision states, "we are a City with an urban vibrancy, guided by intentional growth to create connected neighborhoods, attractive streetscapes, and accessible open space, while maintaining what makes Dover distinct." Attractive streetscapes will be protected through attractive architecture and landscaping. Fencing is proposed around the new units to be constructed which will provide privacy screening to abutting properties.

A main goal of the master plan is to protect ecosystems in particular parcels that protect river corridors and connect to open space areas. The goal of the City is to promote more intensive development served by public infrastructure and does not have conservation potential. While no open space is required for the project, through the TDR regulations, funds will be given to the City to invest and protect other open space lands. The site is not suitable for conservation land due to the location of the property as well as the size of the development. This area is not a prime habitat for many animals due to its proximity to Stark Ave. The area proposed for development will not impact any critical areas or habitat for protected

TDR NARRATIVE

for

COREY MACKOUL

89 Stark Avenue
Dover New Hampshire
March 2026

species. Another goal is to ensure Dover residents can access open space within a 10-minute walk from their home. There is a publicly accessible conservation and recreation land on Applevale Drive and is within walking distance.

Compatibility with the land uses on neighboring lots:

The project is located in the R-12 district. The surrounding area is comprised of primarily single family residential. We believe this single family project is in keeping with the surrounding neighborhood.

The minimum lot size in the R-12 district is 12,000 sq.ft. with a duplex allowed for lots with 18,000 sq.ft. or 1 unit per 9,000 sq.ft. With the existing lot being greater than 36,000 sq.ft., 4 units is consistent with the underlying R-12 zoning density.

73 Stark Ave, 81 Stark Ave and 1 Woodland Ave are all duplex's with an approximate density of 1 unit per 8,000 sq.ft. 90 Stark Ave is 4 unit with a density of 4,600 sq.ft. per unit.

Hayes Lane neighborhood has single family homes that are slightly smaller than the current R-12 requirements.

87 Stark Ave is a single family home with an approximate density of 10,500 sq.ft.

93 Stark Ave is currently a single family home with the potential to support a duplex for a potential density of approximately 10,500 sq.ft.

The proposed development is consistent and compatible with the surrounding neighborhood density.

The architecture of the proposed buildings will be similar to the existing units which will promote a seamless integration of the project.

Is created on property served by public water and sanitary sewer.

The development will tie into municipal water and sewer. The increase in demand will not have an effect on the municipal water and sewer systems.

Any relief sought should not be caused by the additional density.

There is no extra relief sought.

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING, AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

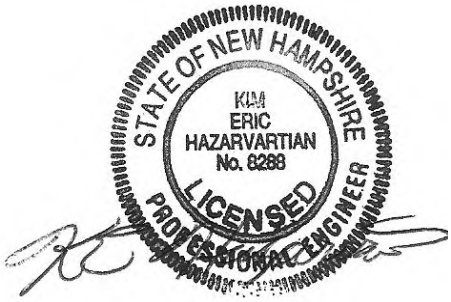
MEMORANDUM

Ref: 1784

Subject: Traffic-Assessment Memorandum
89 Stark Avenue
Dover, New Hampshire

From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
keh@teppllc.com

Date: March 18, 2026



INTRODUCTION

Tritech Engineering Corporation has retained TEPP LLC to prepare this traffic-assessment memorandum (TAM). This TAM regards the proposed redevelopment at 89 Stark Avenue in the City of Dover, New Hampshire.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit
- sight distances
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that:

- relevant sight distances at the Stark Avenue/proposed access intersection are appropriate
- the proposed project is not anticipated to add significant new traffic to the area

EXISTING SITE DESCRIPTION

The existing site:

- is along the west side of Stark Avenue
- has an area of about 0.883 acres
- includes one single-family-detached house
- has one driveway along the west side of Stark Avenue
- is bounded on the east by Stark Avenue
- is otherwise bounded by residential development

PROPOSED PROJECT DESCRIPTION

The project will:

- retain the existing dwelling unit
- add three proposed single-family-detached dwelling units
- remove the existing driveway
- provided a proposed access, south of the existing driveway, for the four dwelling units

ROAD DESCRIPTION

Stark Avenue:

- is a north-south minor-arterial street under the jurisdiction of the City of Dover
- provides connections, to and from the north, with Central Avenue, a minor-arterial street, and with central Dover
- provides connections, to and from the south, with Dover Point Road, a minor-arterial street, and with southern Dover
- has a horizontal alignment with minor-to-moderate curvature
- has a vertical alignment with minor grades
- has a speed limit of 30 miles per hour (mph)
- has asphalt-cement-concrete pavement in overall good condition
- has one travel lane per direction
- has pavement markings including double-yellow lines, separating traffic directions, and single-white edge lines
- near the site, has a sidewalk on the west side
- near the site, has utility poles on the south side, including one pole with a luminaire along the site frontage

PUBLIC TRANSIT

Cooperative Alliance for Seacoast Transportation bus-transit system Route 13 runs along Stark Avenue near the site. A southbound stop is near 67 Stark Avenue, and a northbound stop is north of 34 Stark Avenue.

The route connects with:

- to the north, central Dover and the Dover Transportation Center
- to the south, the City of Portsmouth and Hanover Station

SIGHT DISTANCES

Table 1 presents a sight-distance summary for the Stark Avenue/proposed access intersection. Table 1 shows that available sight distances provide for approach speeds on Stark Avenue that are greater than the speed limit.

Table 1. Sight-distance summary.

	Geometry[a]		Speeds (mph)	
Intersection and View	Approach Grade (%)	Available Sight Distance (ft)	Limit	SSD[b]
Stark Avenue/Proposed Access Intersection				
Stark Avenue to/from North	Down 3±	300±	30	38±
Stark Avenue to/from South	Up 4 ±	400±	30	40+

[a] Provided by Tritech Engineering Corporation.

[b] SSD design speed that available sight distance provides. AASHTO, pages 3-2 to 3-6.

TRIP GENERATION

The Institute of Transportation Engineers (ITE) publishes trip-generation information in the authoritative *Trip Generation Manual*.[1] This information is based on empirical data for a variety of land uses, including land use 210, single-family-detached housing, based on dwelling units.[2]

Table 2 shows changes in calculated weekday vehicle-trips due to the project as:

- daily, 27 (total of in and out)
- AM-street-peak hour, 2 (1 in and 1 out)

[1] ITE, *Trip Generation Manual*, 12th Edition (Washington DC, August 2025).

[2] ITE, *Trip Generation Manual*, Volume 3, pages 230 to 248.

	Weekday Vehicle-Trips[a]						
		AM-Street-Peak Hour			PM-Street-Peak Hour		
	Daily	Total	In	Out	Total	In	Out
Existing Dwelling Unit	9	1	0	1	1	1	0
Four Total Dwelling Units	36	3	1	2	4	2	2
Differences Due to Project	27	2	1	1	3	1	2

[a] Based on ITE, *Trip Generation Manual*, land use 210, single-family-detached housing.

- PM-street-peak hour, 3 (1 in and 2 out)

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations will not be sensitive to trip distribution/assignment. Trips will be split along Stark Avenue to/from the north and south and further split beyond the immediate project area.

POTENTIAL TRAFFIC IMPACTS

ITE suggests that land developments generating at least 100 peak-hour vehicle trips, in the busier direction, are candidates for consideration of traffic impact analysis.[3] Tabulated peak-hour trip generation of the project is well below this national ITE threshold. The project is not anticipated to add significant new traffic to the area.

CONCLUSION

This TAM concludes that.

- relevant sight distances at the Stark Avenue/proposed access intersection are appropriate
- the proposed project is not anticipated to add significant new traffic to the area

[3] ITE, *Manual of Transportation Engineering Studies* (Prentice Hall: Englewood Cliffs, New Jersey, 2000), page 144.

TDR
SITE DEVELOPMENT PLANS

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE

LIST OF PLANS

T-1 - TITLE SHEET
T-2 - NEIGHBORHOOD PLAN
EX-1 - EXISTING CONDITIONS PLAN (1"=30')
SN-1 - GENERAL NOTES PLAN
SP-1 - GENERAL SITE PLAN (1"=20')
SD-1 - SITE DISTANCE PLAN (1"=20')
SD-2 - SITE DISTANCE PLAN (1"=20')

OWNER / APPLICANT
COREY MACKOUL
8 HULL AVENUE
DOVER, NEW HAMPSHIRE

CIVIL ENGINEER - SURVEYOR
TRITECH ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE

WETLAND & SOIL SCIENTIST
HIGHLAND SOILS SERVICES
75 PROSPECT STREET
SOMERSWORTH, NEW HAMPSHIRE

LANDSCAPE ARCHITECT
TERRAIN
PLANNING & DESIGN LLC
31 KAST HILL ROAD
HOPKINTON, NEW HAMPSHIRE

TRAFFIC ENGINEER
TEPP, LLC.
93 STILES ROAD, SUITE 201
SALEM, NEW HAMPSHIRE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - ROBERT J. STOCKELL No. 9853 - PROFESSIONAL ENGINEER

LICENSED LAND SURVEYOR NO. 9853 ROBERT J. STOCKELL STATE OF NEW HAMPSHIRE

TITLE SHEET
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MARCH 3, 2026
JOB No. 25136

SHEET No.
T-1

TRITECH
ENGINEERING CORPORATION
735 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603.742.8107
FAX 603.742.3630

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

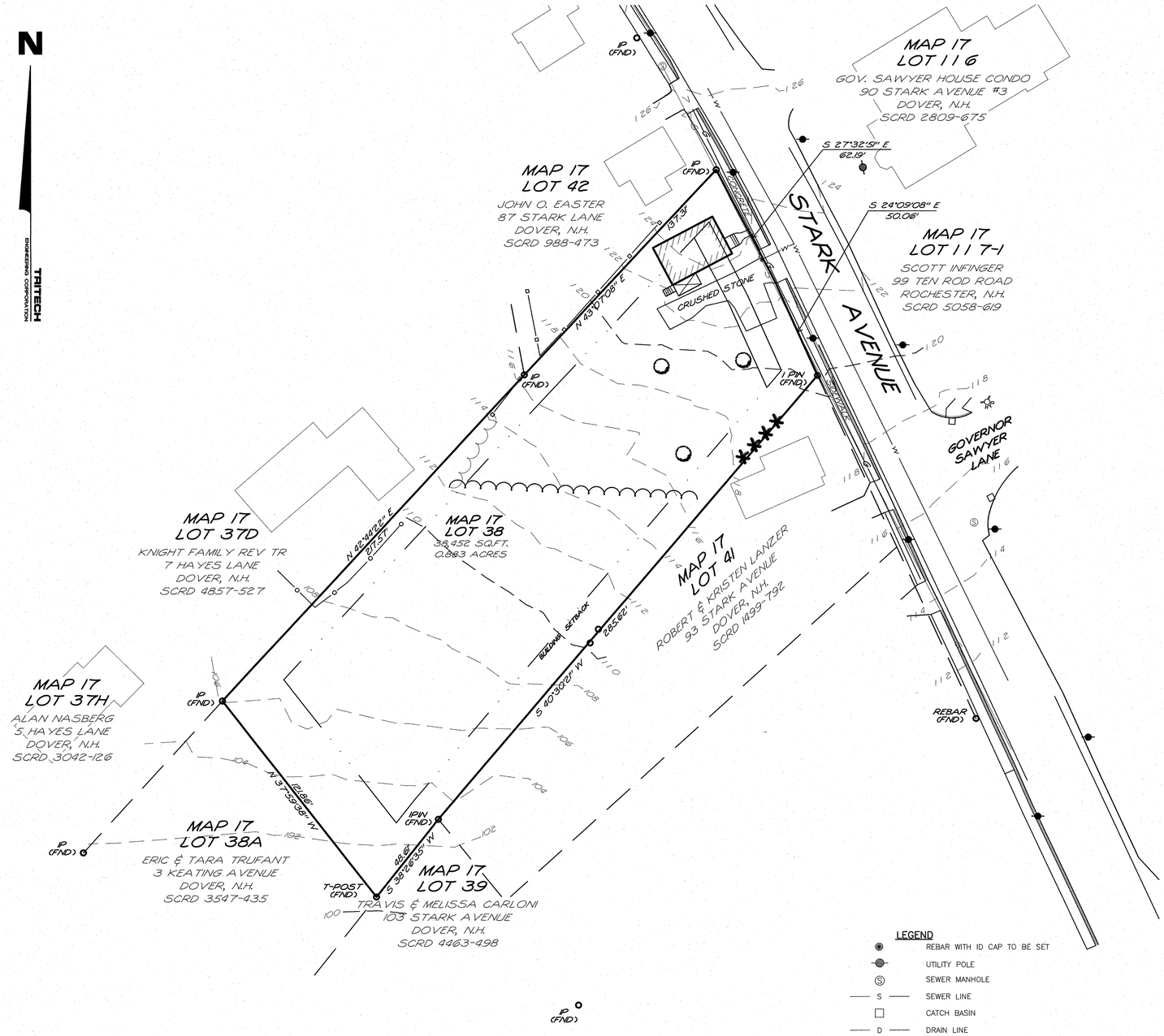
NEIGHBORHOOD PLAN

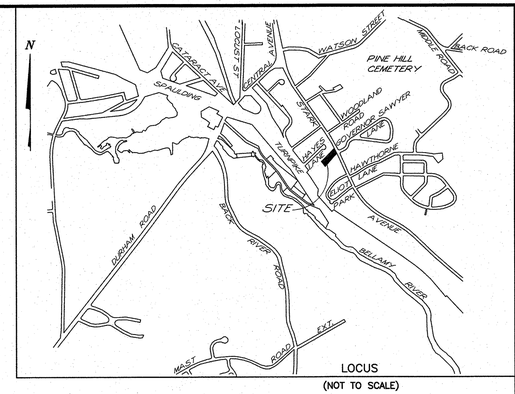
COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MARCH 3, 2026 JOB No. 25136
SCALE: 1" = 60'

SHEET No. **T-2**

(P26-0000)





NOTES

1.) INTENT: TO SHOW THE EXISTING CONDITIONS OF DOVER MAP 17 LOT 38.

2.) CURRENT OWNER OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H.

3.) SUBJECT PARCEL IS LOCATED IS THE CITY OF DOVER, COUNTY OF STRAFFORD AND THE STATE OF NEW HAMPSHIRE.

4.) TOTAL LOT AREA: 38,452 SQ.FT. – 0.883 ACRES

5.) TAX MAP 17 LOT 38

6.) PROJECT DEED REFERENCE: BOOK 5248 PAGE 342

7.) ZONING: R–12
MIN. LOT SIZE: 12,000 SQ.FT.
MIN. FRONTAGE: 100 FT
MIN. SETBACKS:
FRONT: 15 FT TO 25 FT
SIDE: 15 FT
REAR: 30 FT
MAX. COVERAGE: 30 %
MAX. BUILDING HEIGHT: 35 FT

8.) PROJECT PLAN REFERENCE: PROPOSED SUBDIVISION
LAND OF
TRI–CITY BUILDERS
103 STARK AVENUE
DOVER, NEW HAMPSHIRE
BERRY SURVEYING & ENGINEERING
MAY 6, 2003 SCRD 71–89

SUBDIVISION OF LAND
FOR CLARA FISHER
ON STARK AVENUE & KEATING AVENUE
IN DOVER, N.H.
BRUCE POHOPEK
MAY 30, 1995 SCRD 41A–84A

PLAN OF LOTS
ROBERT LABRIE
DOVER, N.H.
GRANT L DAVIS
AUGUST 1949
POCKET #3, FOLDER #1, PLAN #28

9.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 35,000, AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF JANUARY, 2026.

10.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON JANUARY 13, 2026 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON JANUARY 15, 2026. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (VERTICAL DATUM: NAVD 88).

11.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (FLOOD HAZARD ZONE A – PANEL 330145, MAP No. 33017C0340E, DATE: 9–30–2015).

12.) ON JANUARY 14, 2026, MICHAEL MARIANO, STATE OF NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #76, NH CERTIFIED WETLAND SCIENTIST #183, CONDUCTED AN ON–SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE EVALUATED BASED ON THE CITY OF DOVER ZONING ORDINANCE (170–27.1) AND ON STATE & FEDERAL CRITERIA OUTLINED IN THE "CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL" (DEPT. OF THE ARMY, 1987). ON THIS SITE, WETLANDS BASED ON LOCAL CRITERIA SHARE THE SAME BOUNDARIES WITH THOSE BASED ON STATE AND FEDERAL CRITERIA. NO WETLANDS WERE OBSERVED ON THIS SITE.

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- S — SEWER LINE
- CATCH BASIN
- D — DRAIN LINE
- G — GAS LINE
- WATER GATE VALVE
- W — WATER LINE
- STOCKADE FENCE
- CHAIN LINK FENCE
- SPECIMEN TREE
- ARBORVITAE
- TREE LINE

TRITECH
ENGINEERING CORPORATION
735 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 9890

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

LICENSED LAND SURVEYOR No. 894 ROBERT J. STOWELL

EXISTING CONDITIONS PLAN

COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MARCH 3, 2026 JOB No. 2513.0
SCALE: 1" = 30'

SHEET No.
EX-1

(P26-0000)

DOVER SITE PLAN REVIEW NOTES:

1. PLAN INTENT: TO FURTHER DEVELOP DOVER TAX MAP 17 LOT 38. THIS DEVELOPMENT WILL INCLUDE THE RENOVATION OF THE EXISTING SINGLE FAMILY HOUSE (1 BASE UNIT). THE DEVELOPMENT WILL ALSO INCLUDE THE CONSTRUCTION OF 3 SINGLE FAMILY HOMES, ONE BASE UNIT AND TWO UNITS PURCHASED UNDER THE TDR ORDINANCE. 2 BASE UNITS AND THE PURCHASE OF TWO UNITS.

2. OWNERS OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H. 03820

3. THE PARCEL IS SHOWN AS:
LOT 38, MAP 17 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4. THE SUBJECT PARCEL CONTAINS 0.883 ACRES (38,452 SQ. FT.) OF LAND. 0 ACRES ARE CURRENTLY IN CURRENT USE.

5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5248, PAGE NO. 342.

6. REFERENCE PLANS:
PROPOSED SUBDIVISION, LAND OF TRI-CITY BUILDERS, 103 STARK AVENUE, DOVER, N.H., BERRY SURVEYING & ENGINEERING, MAY 6, 2003, SCRD 71-89
SUBDIVISION OF LAND, FOR CLARA FISHER, ON STARK AVENUE & KEATING AVENUE, IN DIVER, N.H., BRUCE POHOPEK, MAY 30, 1995, SCRD 41A-84A
PLAN OF LOTS, ROBERT LABRIE, DOVER, N.H., GRANT L DAVIS, AUGUST 1949, PO 3, FO 1, PLAN #28

7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE AND SHOWN ON THE PLAN.

8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS:

ZONING DISTRICT:	R-12	
SUB-DISTRICT:	NONE	
ZONING OVERLAY DISTRICTS:	NONE	
DIMENSIONAL REQUIREMENTS:		
	REQUIRED:	PROVIDED:
MINIMUM LOT SIZE:	12,000 SQ. FT.	12,000 SQ. FT.
MINIMUM LOT FRONTAGE:	100 FT.	100 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	15 TO 25 FT.	15 TO 25 FT.
SIDE	15 FT.	15 FT.
REAR	30 FT.	30 FT.
ABUT-A-STREET	15 TO 25 FT.	15 TO 25 FT.
MAXIMUM/MINIMUM LOT COVERAGE	30%	30 %
MINIMUM/MAXIMUM BLDG. HEIGHT	35 FT.	35 FT.

9. OFF STREET PARKING REQUIREMENTS:

	MAXIMUM:	PROVIDED:
PARKING DIMENSIONS:	9'x18'	9'x18'
AISLE DIMENSIONS:	24'	20'
MAXIMUM PARKING ALLOWED	8	8
ACCESSIBLE PARKING:	1	0

10. SEE SHEET SP-1 FOR TDR BASE DENSITY CALCULATION THAT DETERMINED A BASE DENSITY OF 2 UNITS. THE PROJECT CONTAINS A TOTAL OF 4 UNITS. THE EXISTING HOUSE (1 UNIT). THE 3 NEW SINGLE FAMILY HOMES. ONE BASE UNIT AND TWO UNITS OBTAINED BY TDR.

11. VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS ARE AS FOLLOWS: NONE GRANTED

12. CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS ARE AS FOLLOWS: NONE GRANTED

13. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION IN JANUARY, 2026 WITH AN ERROR NOT GREATER THAN 1 IN 35,000.

14. AS-BUILT PLANS OF THE PROJECT SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER CITY ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.

15. SUBJECT PARCEL IS (IS NOT) LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C 0340E, EFFECTIVE DATE: SEPTEMBER 30, 2015.

16. TOPOGRAPHIC SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION DURING JANUARY 2026.

17. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.

18. WETLANDS WERE DELINEATED BY MICHAEL MARIANO, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER 183, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, IN JANUARY, 2026. NO WETLANDS WERE OBSERVED.

19. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.

20. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND MUNICIPAL SEWER.

21. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

22. CONTRACTOR SHALL FOLLOW TO THE CONSTRUCTION SEQUENCING IDENTIFIED WITHIN THE PLANNING BOARD APPROVED PLAN SET. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

23. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND BE PROVIDED FOR CONSTRUCTION SEQUENCING INCLUDING TEMPORARY MEASURES.

24. CONTRACTOR SHALL FOLLOW THE PERMANENT STABILIZATION MEASURES SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION AS NOTED WITHIN THE PLANNING BOARD APPROVED PLANS. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

25. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.

26. ANY PERMANENT TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.

27. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO COMMENCING EARTH DISTURBANCE.

28. A CITY ENGINEER APPROVED CONSTRUCTION SIGN SHALL BE INSTALLED PRIOR TO COMMENCING EARTH DISTURBANCE. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

29. A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

30. HOURS OF SITE WORK MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM - 6 PM, NO SATURDAY OR SUNDAY. NO SITE WORK SHALL BE DONE ON FEDERAL HOLIDAYS.

31. BUILDING ADDRESSES, INCLUDING APT AND UNIT NUMBERS (IF APPLICABLE), SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

32. THE PROPOSED USE FOR THE SITE IS SINGLE FAMILY RESIDENTIAL.

33. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: NONE

34. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO THE DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR OR THEIR DESIGNEE.

35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP

38. THE OWNER OF RECORD SHALL RECORD, AT THE REGISTRY OF DEEDS, DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.

39. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED, IN ACCORDANCE WITH ALL APPLICABLE CODES, TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.

40. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.

41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.

42. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

43. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM, IF REQUIRED, BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY THE CITY OF DOVER INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.

45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.

46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.

47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

48. DESIGN ENGINEER OF RECORD OR SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.

49. THE APPLICANT SHALL PROVIDE THE CITY OF DOVER AN EASEMENT TO ACCESS WATERLINE AND HYDRANTS TO MAINTAIN WATER QUALITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

PLAN SET LEGEND

- WETLAND
- WETLAND BOUNDARY
- IRON PIPE
- UTILITY POLE
- TP — TEST PIT
- D — EXISTING STREET LIGHT
- G — EXISTING STONEWALL
- EXISTING 2 FT CONTOUR
- EXISTING 10 FT CONTOUR
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE OR SERVICE
- EXISTING WATER SHUTOFF
- WV — EXISTING WATER GATE VALVE
- PROPOSED PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED EDGE OF GRAVEL
- 80 — PROPOSED CONTOUR
- PROPOSED HYDRANT
- W — PROPOSED END CAP WITH THRUST BLOCK
- WV — PROPOSED WATER GATE VALVE
- PROPOSED WATER SHUTOFF
- W — PROPOSED WATER LINE OR SERVICE
- PROPOSED VINYL STOCKADE FENCE
- U E&T — PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- PROPOSED ELECTRICAL TRANSFORMER
- PROPOSED ELECTRICAL JUNCTION BOX
- PROPOSED STREET LIGHT
- PROPOSED UTILITY POLE
- D — PROPOSED DRAIN LINE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- UD — PROPOSED UNDERDRAIN
- PROPOSED FLARED END SECTION
- PROPOSED RIP RAP
- PROPOSED EASEMENT
- PROPOSED GUARDRAIL
- PROPOSED SILT FENCE OR SILT SOCK
- PROPOSED CONSTRUCTION FENCE
- PROPOSED SILT SOCK WITH ORANGE CONSTRUCTION FENCE OR ORANGE SILT FENCE
- PROPOSED STREET SIGN
- PROPOSED STOP SIGN
- PROPOSED STOP BAR
- PROPOSED STREET TREE
- PROPOSED TREELINE

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

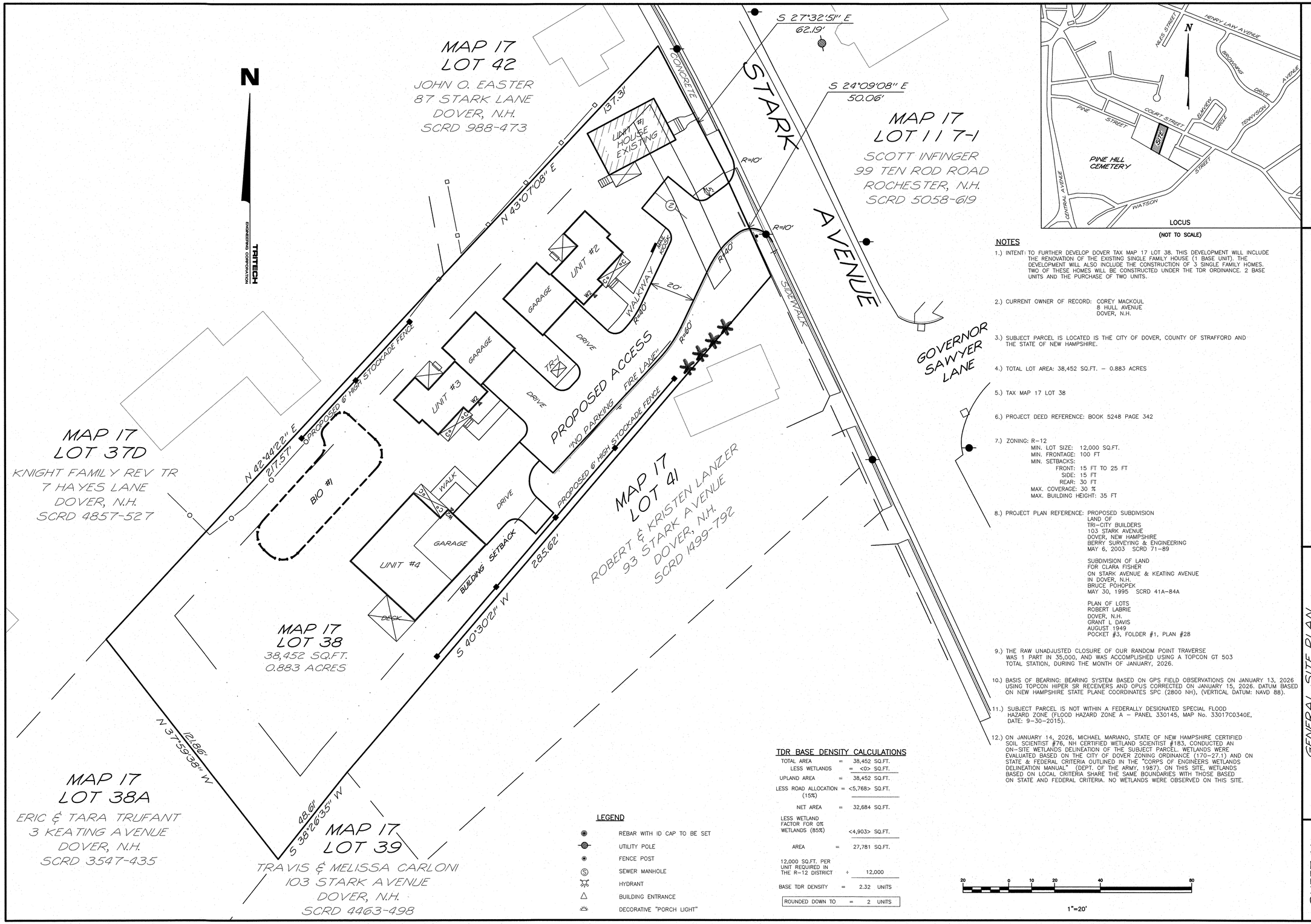
ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

GENERAL NOTES PLAN
COREY MACKOUL
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MARCH 3, 2026 JOB No. 25136

SHEET No.
SN-1

(P26-0000)



LOCUS

(NOT TO SCALE)

NOTES

1.) INTENT: TO FURTHER DEVELOP DOVER TAX MAP 17 LOT 38. THIS DEVELOPMENT WILL INCLUDE THE RENOVATION OF THE EXISTING SINGLE FAMILY HOUSE (1 BASE UNIT). THE DEVELOPMENT WILL ALSO INCLUDE THE CONSTRUCTION OF 3 SINGLE FAMILY HOMES. TWO OF THESE HOMES WILL BE CONSTRUCTED UNDER THE TDR ORDINANCE. 2 BASE UNITS AND THE PURCHASE OF TWO UNITS.

2.) CURRENT OWNER OF RECORD: COREY MACKOUL
8 HULL AVENUE
DOVER, N.H.

3.) SUBJECT PARCEL IS LOCATED IS THE CITY OF DOVER, COUNTY OF STRAFFORD AND THE STATE OF NEW HAMPSHIRE.

4.) TOTAL LOT AREA: 38,452 SQ.FT. – 0.883 ACRES

5.) TAX MAP 17 LOT 38

6.) PROJECT DEED REFERENCE: BOOK 5248 PAGE 342

7.) ZONING: R–12
MIN. LOT SIZE: 12,000 SQ.FT.
MIN. FRONTAGE: 100 FT
MIN. SETBACKS:
FRONT: 15 FT TO 25 FT
SIDE: 15 FT
REAR: 30 FT
MAX. COVERAGE: 30 %
MAX. BUILDING HEIGHT: 35 FT

8.) PROJECT PLAN REFERENCE: PROPOSED SUBDIVISION
LAND OF
TRI–CITY BUILDERS
103 STARK AVENUE
DOVER, NEW HAMPSHIRE
BERRY SURVEYING & ENGINEERING
MAY 6, 2003 SCRD 71–89

SUBDIVISION OF LAND
FOR CLARA FISHER
ON STARK AVENUE & KEATING AVENUE
IN DOVER, N.H.
BRUCE POHOPEK
MAY 30, 1995 SCRD 41A–84A

PLAN OF LOTS
ROBERT LABRIE
DOVER, N.H.
GRANT L. DAVIS
AUGUST 1949
POCKET #3, FOLDER #1, PLAN #28

9.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 35,000, AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF JANUARY, 2026.

10.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON JANUARY 13, 2026 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON JANUARY 15, 2026. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (VERTICAL DATUM: NAVD 88).

11.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (FLOOD HAZARD ZONE A – PANEL 330145, MAP No. 33017C0340E, DATE: 9–30–2015).

12.) ON JANUARY 14, 2026, MICHAEL MARIANO, STATE OF NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #76, NH CERTIFIED WETLAND SCIENTIST #183, CONDUCTED AN ON–SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE EVALUATED BASED ON THE CITY OF DOVER ZONING ORDINANCE (170–27.1) AND ON STATE & FEDERAL CRITERIA OUTLINED IN THE "CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL" (DEPT. OF THE ARMY, 1987). ON THIS SITE, WETLANDS BASED ON LOCAL CRITERIA SHARE THE SAME BOUNDARIES WITH THOSE BASED ON STATE AND FEDERAL CRITERIA. NO WETLANDS WERE OBSERVED ON THIS SITE.

TDR BASE DENSITY CALCULATIONS

TOTAL AREA	=	38,452 SQ.FT.
LESS WETLANDS	=	<0> SQ.FT.
UPLAND AREA	=	38,452 SQ.FT.
LESS ROAD ALLOCATION (15%)	=	<5,768> SQ.FT.
NET AREA	=	32,684 SQ.FT.
LESS WETLAND FACTOR FOR 0% WETLANDS (85%)		<4,903> SQ.FT.
AREA	=	27,781 SQ.FT.
12,000 SQ.FT. PER UNIT REQUIRED IN THE R–12 DISTRICT	÷	12,000
BASE TDR DENSITY	=	2.32 UNITS
ROUNDED DOWN TO	=	2 UNITS

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- FENCE POST
- SEWER MANHOLE
- HYDRANT
- BUILDING ENTRANCE
- DECORATIVE "PORCH LIGHT"

20 0 10 20 40 80

1"=20'

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

ROBERT J. STOCKWELL No. 7683 LICENSED LAND SURVEYOR STATE OF NEW HAMPSHIRE – STATE PROFESSIONAL ENGINEER

GENERAL SITE PLAN

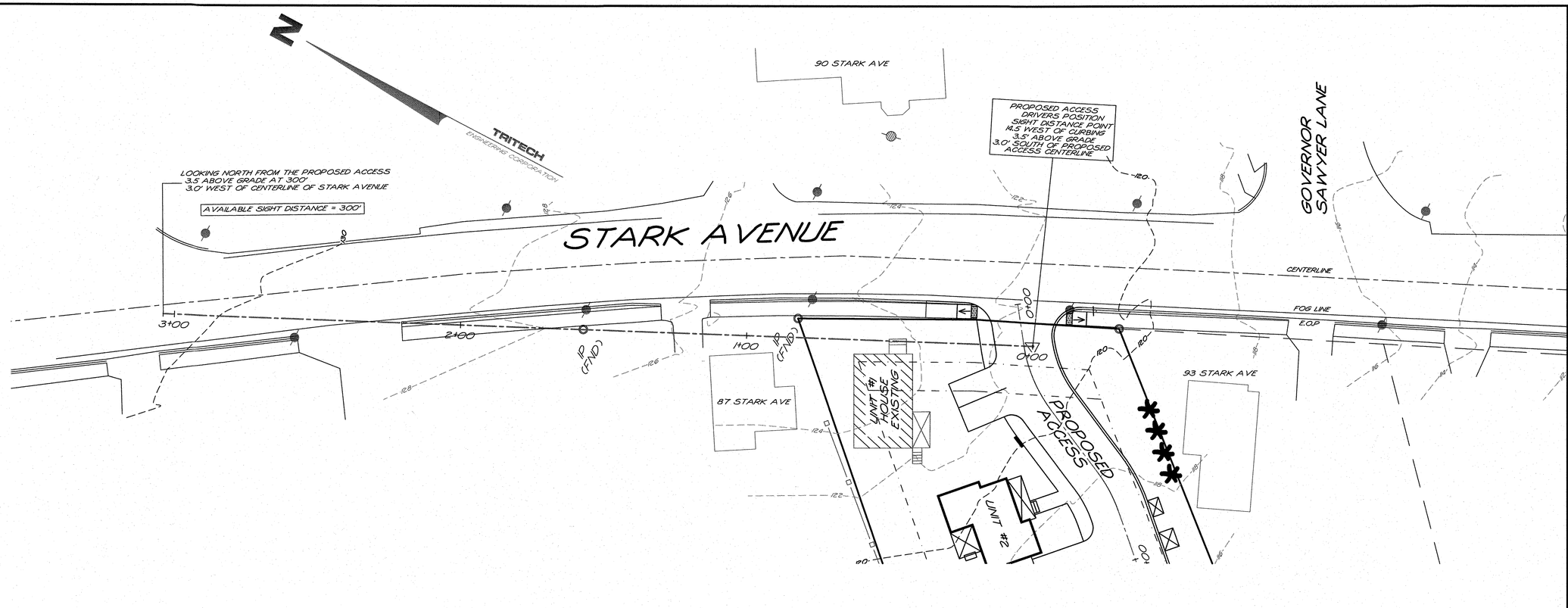
COREY MACKOUL

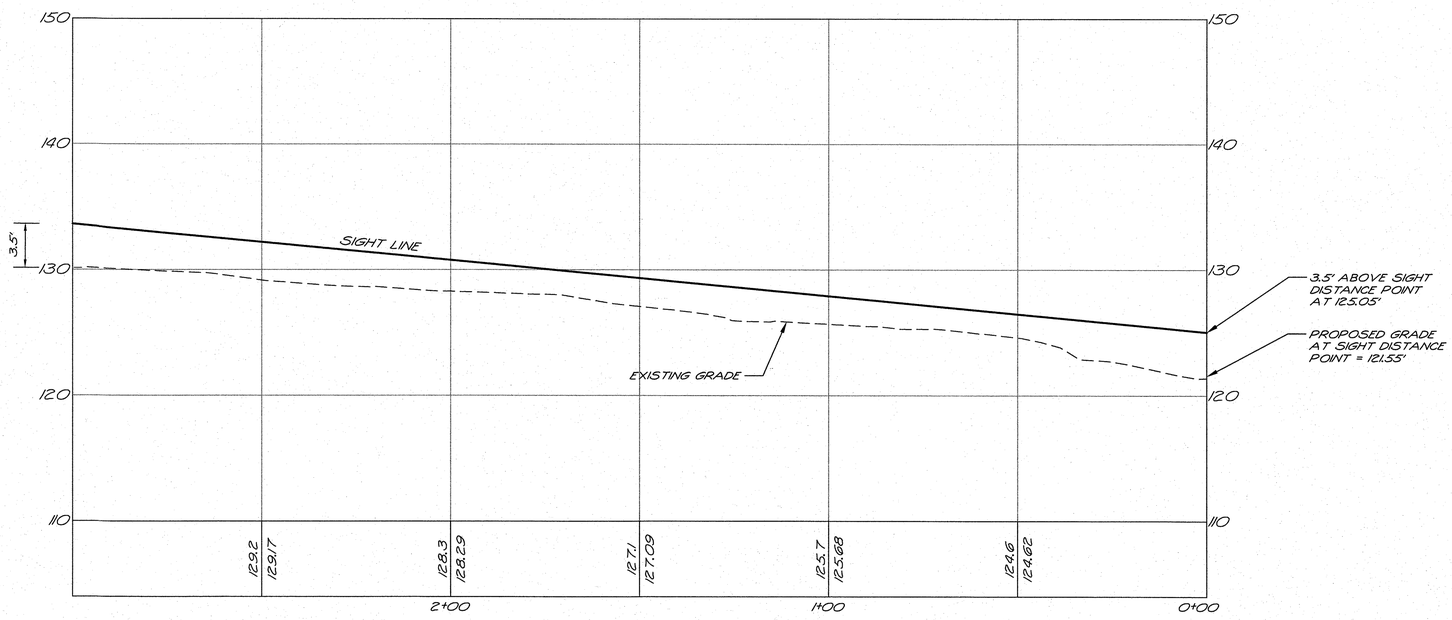
89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MARCH 3, 2026 JOB No. 2513.6
SCALE: 1" = 20'

SHEET No. SP-1

(P26-0000)





TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603.742.8107
FAX 603.742.3830

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - USA
ROBERT J. STOCKWELL No. 10603 LICENSED PROFESSIONAL ENGINEER

SIGHT DISTANCE PLAN & PROFILE
LOOKING NORTH

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MARCH 3, 2026 JOB No. 25136
SCALE: 1" = 20'

SHEET No.
SD-1

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 8'

1"=20'

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

ISSUED FOR PLANNING BOARD REVIEW
February 27, 2025

REVISIONS
DATE: DESCRIPTION:

STATE OF NEW HAMPSHIRE - ROBERT J. WELL No. 9803 LICENSED PROFESSIONAL ENGINEER

SIGHT DISTANCE PLAN & PROFILE
LOOKING WEST

COREY MACKOUL

89 STARK AVENUE
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY
MARCH 3, 2026 JOB No. 25136
SCALE: 1" = 20'

SHEET No.

SD-2

From: PAULA FORD <pford130@comcast.net>
Sent: Tuesday, March 24, 2026 9:09 AM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: 89 Stark Ave TDR

Security Notice: External sender. Use caution with hyperlinks or attachments.

Good morning,

I am opposed to the proposed redevelopment of the parcel at 89 Stark Ave. I understand Dover needs housing. I'm not sure squeezing three additional swellings onto this lot is the most effective approach. This development impacts every abutter in negative ways: more noise, more traffic, less green space for everyone. By approving this project I fear the owners with large lots in our small neighborhood will want to have their lot subdivided and thereby increase congestion and traffic.

I hope the Planning Board denies the permit to subdivide and redevelop this project.

Thank you,
Paula Ford
6 Hayes Lane

From: Gretchen Knight <gmp.knight@gmail.com>
Sent: Tuesday, March 24, 2026 8:26 AM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: Photo of impacted tree cover 89 Stark

Security Notice: External sender. Use caution with hyperlinks or attachments.

Dear Donna,
Attached please find an overlay of the proposed TDR subdivision at 89 Stark over current Google Earth Imagery showing tree cover within the 30' no cut buffer area. The application includes an image that is over 20 years old, and in the winter when there is no foliage. This picture better represents the potential impact to the abutting properties.

Thank you for including this image in materials the Planning Board has at their disposal when reviewing this application.

Gretchen Knight
7 Hayes Ln, Dover, NH 03820


MAP 17
LOT 42
JOHN O. EASTER
87 STARK LANE
DOVER, N.H.
SCRD 988-473
89 Stark Ave
STARK AVENUE
MAP 17
LOT 11 7-1
SCOTT HAFNER
29 TEN ROD ROAD
ROCHESTER, NH
SCRD 5058-619
GOVERNOR SAWYER LANE
PROPOSED ACCESS
UNIT #1
UNIT #2
UNIT #3
UNIT #4
GARAGE
WALKWAY
SIDEWALK
DRIVE
BUILDING SETBACK
BIO #1
MAP 17
LOT 37D
KNIGHT FAMILY REV TR
7 HAYES LANE
DOVER, N.H.
SCRD 4857-327
MAP 17
LOT 41
ROBERT & KRISTEN LANZER
93 STARK AVENUE
DOVER, NH
SCRD 4807-292
MAP 17
LOT 38
38,452 SQ.FT.
0.883 ACRES
93
90
2
8
6
7
5
N
TRITECH
ENGINEERING CORPORATION
S 27°32'51" E
62.19'
S 24°09'08" E
50.06'
N 43°01'08" E
137.3'
N 42°44'22" E
217.57'
S 40°30'21" W
255.62'
N 37°59'38" E
121.86'
TDR BASE DENSITY CALCULATIONS
TOTAL AREA 38,452 SQ.FT.
LESS WETLANDS 0 SQ.FT.
3D

From: James Boos <jamesjboos@gmail.com>
Sent: Tuesday, March 24, 2026 8:21 AM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>; City Council - All <CityCouncil-All@dover.nh.gov>
Subject: TDR plan for 89 Stark Ave

Security Notice: External sender. Use caution with hyperlinks or attachments.

Hello,

I'm writing to express my opposition to the plan, as proposed, for 4 units at 89 Stark Ave. In particular, I'm opposed to the density and retention pond location as set forth in that plan. Specifically, I believe the need for a retention pond contradicts the intent of the development site as utilizing "existing infrastructure and amenities". At minimum, I believe the board should consider requiring a revision of the plan to relocate the retention pond and reduce the number of units from four to three.

Generally, I believe the Planning Board and City Council should reconsider the TDR program as it relates to the Master Plan. The majority of property owners who have taken advantage of this program have not done so in the true spirit of the original intention of the plan. The units being built have not accomplished the goal of affordable and more accessible housing. These units have been cash-grabs at the benefit of those who have applied for the program and have come at the expense of abutters. Furthermore, I feel the City needs to set a target for the end of the program, of which there currently seems to be none. The only application for TDR that has been denied was Fergus Cullen's, which was ultimately overturned. The City needs to say "NO" at some point and this project would be a good start.

Thank you for the consideration,

James Boos
1 Hayes Lane
Lot 17-37-A

From: Greg Knight <grknght@gmail.com>
Sent: Monday, March 23, 2026 7:12 PM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: TDR Applicant: 89 Stark Ave

Security Notice: External sender. Use caution with hyperlinks or attachments.

To whom it may concern,

I am writing to share several concerns regarding the recent TDR application for 89 Stark Ave submitted by Mr. MacKoul. After reviewing the proposal against current TDR regulations, I would like to highlight the following issues:

- Density and House Size: The plan proposes multiple houses on a 0.8-acre lot but fails to define the actual size of the proposed structures. Without these dimensions, it is impossible for the town or the abutters to verify if the project meets specific TDR calculation requirements.
- Buffer Requirements: The current regulations require a thirty-foot continuous visual buffer. Based on the submitted plans, this requirement is not met on the side of the property abutting my property on Hayes Lane.
- Lack of Detail on "Bio 1": The plans include a designation for "Bio 1" without providing details regarding its purpose, size, or depth.
- Project Scope and Maintenance: I believe adding three additional houses to this lot is excessive. Furthermore, the property has remained dormant for nearly a year. Despite Mr. MacKoul's stated intent to renovate the existing house to help meet housing demands, no progress has been made to make the structure livable.

I feel this application lacks the necessary details for the board to make an informed decision or for the abutters to feel confident about the project's impact on the neighborhood.

I will bring forward additional concerns during the scheduled public hearing. Thank you for your time and consideration of these points.

Best regards,

Greg Knight
7 Hayes Lane

From: kristen lanzer <krispydog24@icloud.com>
Sent: Monday, March 23, 2026 3:35 PM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: 89 stark TDR

Security Notice: External sender. Use caution with hyperlinks or attachments.

ABUTTERS
kristen and andrew lanzer
93 stark ave

attached are 2 more images to accompany the email I sent last week to Applicant Corey MacKoul and cc'd here to planning dept.
please note our concern for the close property line on north side of our lot adjacent to lot 38 for TDR dev
thank you for compiling the information

i will drop off a document to include after you receive this email

sincerely
kristen lanzer


march 20
2026
4 feet
8 feet
north side of abutter's
home on 93 Stark
adjacent to 89 Stark
TDR development
window facing west


3/23/2026
Applicant references 4 nearby properties in his TDR narrative. 73 stark 80 stark and 81 stark are rentals. At least for two of the properties I am sure the landlords live elsewhere. 1 Woodland is a home with inlaw apt.
73
81
80
1
93
STARK AVENUE
GOVERNOR SAWYER LANE
HAYES LANE
KEATING AVENUE
MAP 17 LOT 38
This property lot 38 and 38a was split in 1995 which added denstity and changed habitat with lawn and tree clearing
Abutters next to lot38 finally paid off their mortgage and retired. They have no second home and live within their means. They purchased 93 stark-lot41- in 1990. The proposed "in-fill" is too full. Removing the trees and covering ground with pavement in that area puts burden on us all.
ELLIOT PARK

From: Gretchen Knight <gmp.knight@gmail.com>
Sent: Friday, March 20, 2026 1:49 PM
To: Planning Board - All <PlanningBoard-All@dover.nh.gov>
Subject: Opposed to TDR Application for 89 Stark

Security Notice: External sender. Use caution with hyperlinks or attachments.

Gretchen Knight
7 Hayes Ln
Dover, NH 03820

March 17, 2026

Dear Planning Board Members:
I am writing to oppose the TDR application for 89 Stark Ave before the Planning Board on March 24, 2026, and request that the Board deny the application in its current form.

I ask that the Board and the applicant respectfully consider the existing neighborhood, the historic nature of the homes and landscapes that abut this project, and the abnormal layout of existing lot lines, which reflect a hodgepodge of development over the last century. We look forward to welcoming new families to the neighborhood on this lovely wooded lot. But, the addition of three new homes in this space hardly seems to meet the needs of the missing middle - who would benefit from homes that are sized to accommodate their families, need for privacy, and a little green space of their own, in keeping with the surrounding properties. The addition of a densely populated neighborhood onto a .8 acre lot, bound on all sides by single family homes, is surely not the intent of the TDR zoning.

I am concerned, as are our neighbors, about the negative impact of this dramatic increase in density between our homes, where there is little space between our houses and our property lines as it is. The applicant is proposing to alter the site lines of multiple homes, add a roadway to a busy street that already sees frequent accidents because of traffic turning and entering drives, and to alter the grade of the land so as to affect drainage from increased impervious surface.

My husband Greg and I look forward to sharing our concerns at the upcoming meeting.

Sincerely,
Gretchen Knight
Phone: 603-548-7987

From: Corey MacKoul <koul.contracting@gmail.com>
Sent: Friday, March 20, 2026 7:34 AM
To: krisLanzer <krispydog24@icloud.com>
Cc: corey@koulcontracting.com; City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: Re: 89 stark ave proposal

Security Notice: External sender. Use caution with hyperlinks or attachments.

Hey Kris

Truthfully I'm glad to see you care about Dover's community. I do as well, that was one of the driving factors for me purchasing this property from Ron. When he mentioned selling it, I knew someone would develop this property. What I didn't want to see was a faceless developer from MA tearing down this history mid 1800s home to throw up some duplexes. We've been working hard to find this balance of preserving a historic home, keeping the flow of a neighborhood, helping Dover meet increasing demand for housing, and doing it all while trying to make a living in this industry.

I believe Tritech is working on a rendering that is more of a 3D one to show what you are looking for in a view. I can certainly pass that along when I get it along with anything other drawings! For the density, I personally think this would be closer to Hawthorn, Applevale, Hayes, and Eliot park; many of these are in a range of .13-.23 acres and what we proposed would equal .2175 acres per house.

Hope you have a great weekend and the weather lets you start gardening soon!

Thanks!
Corey

On Thu, Mar 19, 2026 at 6:21 PM kristen lanzer <krispydog24@icloud.com> wrote:
Hey Corey

This is Kris Lanzer, of 93 Stark Ave. (picture below) I met you in the yard last summer…I'm the gardener next door.
I see you have a vision for 89 Stark Ave. Andy(spouse) and I like some of the aspects of Transfer of Development-TDR and hope to see reasonable density implemented. So what is reasonable density? What is reasonable density at 89 Stark Ave? What is reasonable density on this section of Stark Ave and area neighborhoods like woodland? governor sawyer? renaud? eliot park? hawthorne and applevale?

Where does one take refuge?



Andy and I have seen the TRITECH drawings that were included with the project packet link. Thank you. But I don't understand the bird's eye view. I'm visually and spatially oriented. Please send me your technical renderings (the elevation and axonometric drawings) of the buildings and road (In the neighborhoods listed above the average ratio is 1 modest home per .5 acre) Corey, I'd like see the drawings to get a sense of human scale in the proposed four-building plan with the road on .8 acres.

Where does one take refuge?

Corey, what are your design elements for the architecture and land? Have you determined the regulating lines of how the energy moves through space and around the built and natural forms? I want to share with you a perspective - a link— that demonstrates these factors in designing/planning https://www.puremodern.com/blogs/news/landscape-design-principles-concepts-ideas?srsltid=AfmBOooSCpmC0tCaa2ABR0ARv63VtxC4X_a1LhwJsTEd4PmmDxpVSG3r

We have concerns about the construction in proximity to our house, vegetation/flora/trees, and property line. We have concerns about the increase of noise- stark, rte 16, and proposed road along our property line of home and yard.

Where does one take refuge?

Below is a rendering (from a couple years ago) by architect Ron Reilly, former owner/neighbor of 89 Stark Ave. It depicts a renovation of the 1850's cape with an addition. I can understand the interplay of house, space, and land.



Where does one take refuge?

Andy and I want to support you, your construction business, real estate endeavors, and your reputation in the neighborhood.
We look forward to seeing what you have in mind Corey. See you Tuesday 3/24/2026.

Kris and (robert)Andy Lanzer
krispydog24@icloud.com

--

From: kristen lanzer <krispydog24@icloud.com>
Sent: Tuesday, March 24, 2026 9:40 AM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Subject: TDR 89 stark

Security Notice: External sender. Use caution with hyperlinks or attachments.

what is a residential planned unit development
share.google

Stark Ave and Dover point road in zone R12
Has numerous recent residential PUD -planned unit developments - PUD dev at Dover Pointe, PUD dev across the street from Dover pointe, PUD Dev on hill across from the old tuttles, PUD dev on hill down from Honda barn…
This area is over-saturated with PUDs and their density intensity. And now, in an already developed neighborhood a TDR PUD at 89 Stark Ave.

Kristen Lanzer, abutter since 1990
93 Stark Ave

what is a residential planned unit development

6 hours ago

A Residential Planned Unit Development (PUD) is **a flexible zoning design for a residential project—often containing single-family homes, townhouses, or condos—that features shared common areas and amenities managed by a mandatory Homeowners Association (HOA)**. Unlike traditional subdivisions, PUDs allow mixed housing types, smaller private lots, and greater density, with owners typically owning their home and the land underneath it. National Association of REALTORS® +2

Usage Examples

- **Active Adult Communities:** Age-restricted, 55+ neighborhoods with clubhouses, golf courses, and shared amenities.
- **Townhome Developments:** Clusters of individually owned units with shared walls, green space, and maintenance, says Study.com.
- **Mixed-Use Developments:** Residential subdivisions that include commercial spaces such as cafes, banks, or shops on-site.
- **Master Planned Communities:** Large-scale developments covering massive acreage (often thousands) that integrate residential with commercial and recreation areas. National Association of REALTORS® +4

Synonyms/Related Terms

- **Common Interest Development (CID):** A broader term for communities like PUDs and condos where owners share responsibility for common areas.

- **Amenities:** Often feature private walking trails, parks, pools, and security.
- **Flexible Zoning:** Allows developers to break typical lot-size constraints to create better-configured public space, says NH Housing Toolbox. Rocket Mortgage +4

Benefits and Disadvantages

- **Pros:** Access to upscale amenities,, maintained common areas, and often a safer, tighter community feel, says Rise Association Management Group.
- **Cons:** Mandatory monthly or annual HOA fees can be high, and restrictive covenants might limit property changes. Rocket Mortgage +3

13 sites

PUD (planned unit development): What it is and how it differs from other types of housing

In a PUD, individuals own their home, lot, and common areas. Everyone in a PUD home is automatically part of an HOA. Some advantag...

Rocket Mortgage



What is a Planned Unit Development? - Crest Real Estate

PUDs are different from other development types because they don't need to undergo the same zoning process. Instead, they must mee...

Crest Real Estate



Planned Unit Developments in Real Estate

There are three common types of PUDs: * **Residential PUDs** These PUDs focus on housing developments and may include: * Single-fa...

National Association of REALTORS®



---------- Forwarded message ---------
From: **Eric Poulin** <ericp1026@gmail.com>
Date: Tue, Mar 24, 2026 at 1:51 PM
Subject: TDR Plan for 89 Stark Ave
To: <Dover-Planning@dover.nh.gov>
Cc: Emily Ranauro <e.ranauro1@gmail.com>

Dover Planning Board:

Please accept this email as opposition to the project referenced in the subject line.

In addition to the feedback provided by other neighboring residences, we would like to submit another consideration. In 2017, a study was completed to determine the noise pollution levels in and around the neighborhood of Hayes Lane. The results (included here) concluded that the level of noise pollution far exceeded acceptable levels. Despite meeting with multiple local and state representatives and other associated parties (State of NH DOT, for example), funding has not been allocated nor is there a future plan to allocate funding for noise abatement caused by Route 16 along this stretch of highway.

This considered, we cannot support another development on the opposite side of our property that will undoubtedly create *additional* road noise from Stark Avenue as the result of cutting down valuable sound-reducing vegetation.

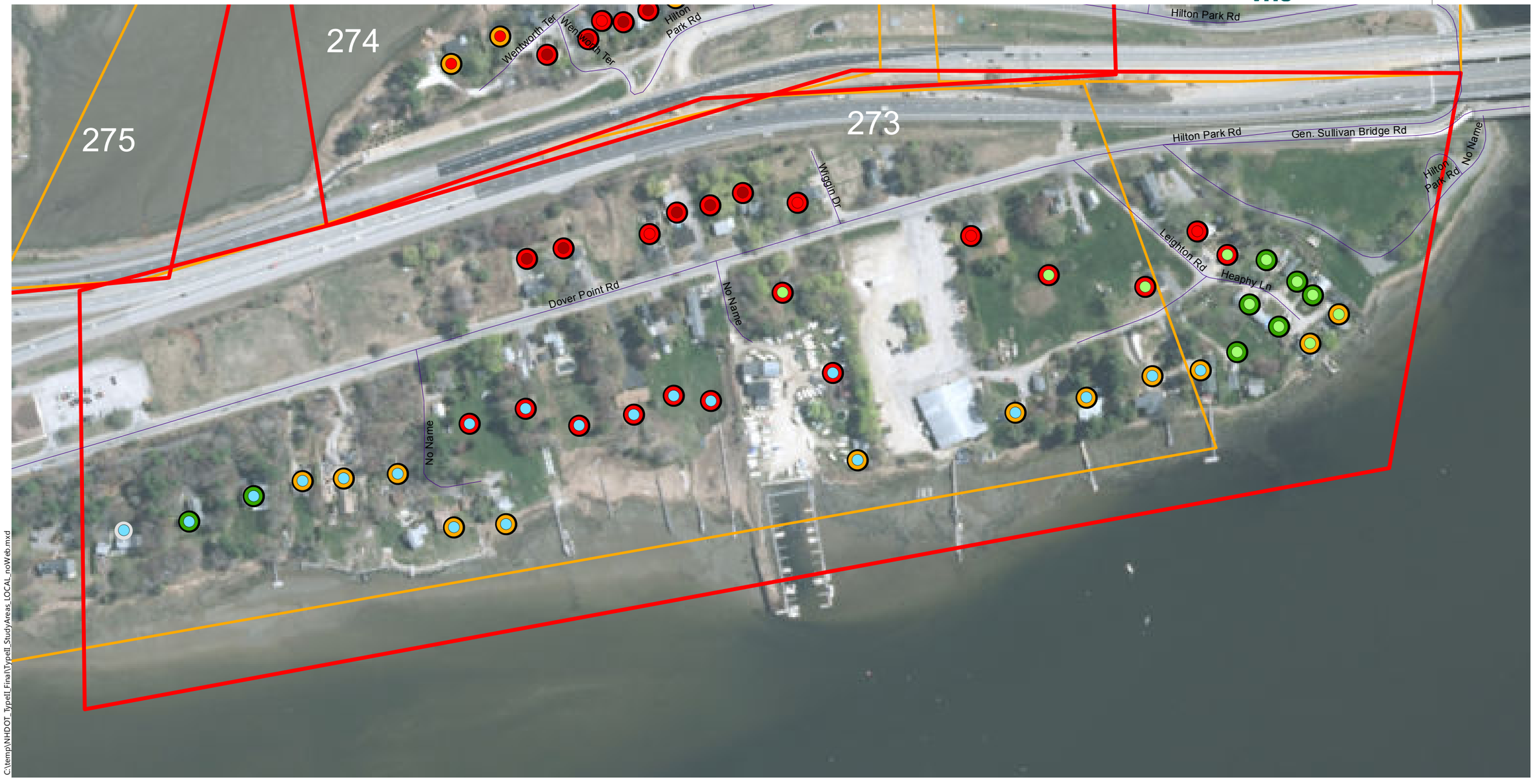
Please understand that this is not designed to be a complaint. I have lived in this neighborhood for nearly ten years and have unfortunately gotten used to significant noise pollution both inside and outside my home from the close proximity to Route 16. Allowing this development project to continue would not only eliminate meaningful privacy for ourselves and our neighbors but will also now open up access to yet another avenue for potentially significant noise pollution. I doubt that the spirit of the TDR plan is to unnecessarily create additional issues for surrounding residences.

Thank you for your consideration.

Respectfully,

Eric Poulin and Emily Ranauro

3 Hayes Lane



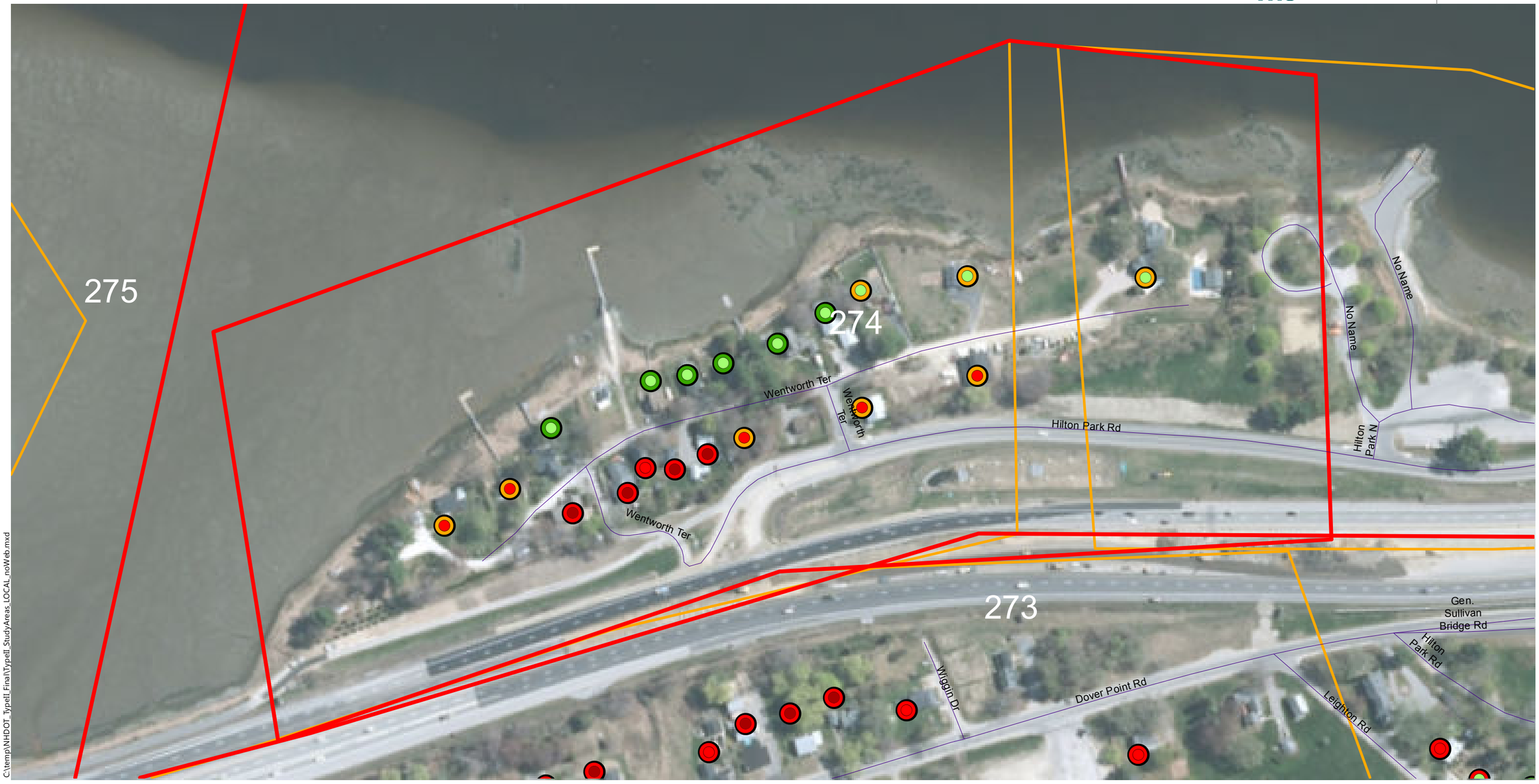
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 273
Roadway: Spaulding
Mile Posts Start/End: 18.1 to 18.3
Barrier Side SB **Cost: $ 0**
DEI: 1422 **DEI Criteria: 1600**
Dover, New Hampshire
Ineligible (Feasible/Reasonable in Prior Type I)



0 100 200 400 Feet

Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 274
Roadway: Spaulding
Mile Posts Start/End: 4.2 to 4.2
Barrier Side NB Cost: $ 0
DEI: 1542 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (Feasible/Reasonable in Prior Type I)



0 100 200 400 Feet

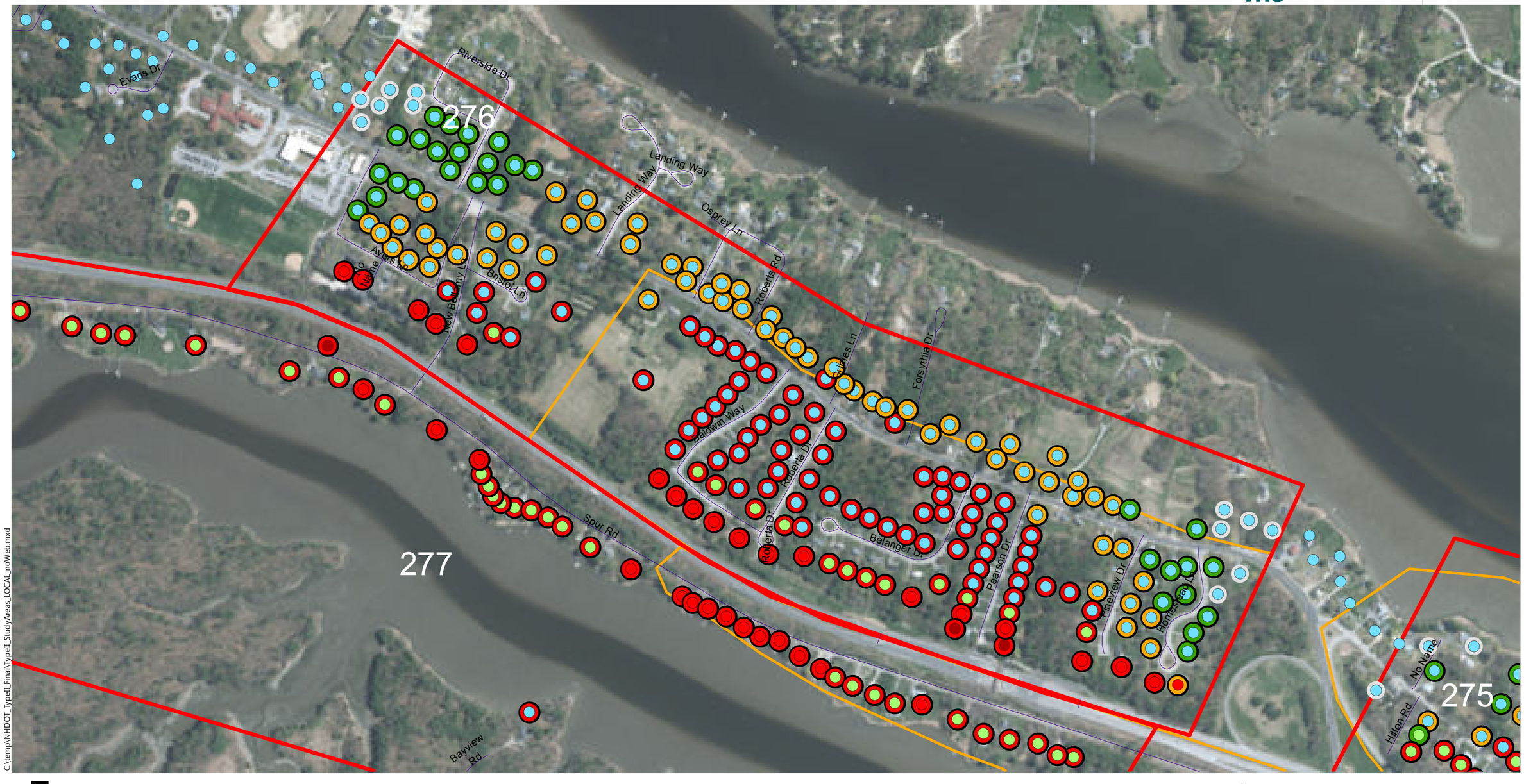
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 275
Roadway: Spaulding
Mile Posts Start/End: 4.7 to 5
Barrier Side NB Cost: $ 0
DEI: 1177 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (Feasible/Reasonable in Prior Type I)



0 100 200 400 Feet

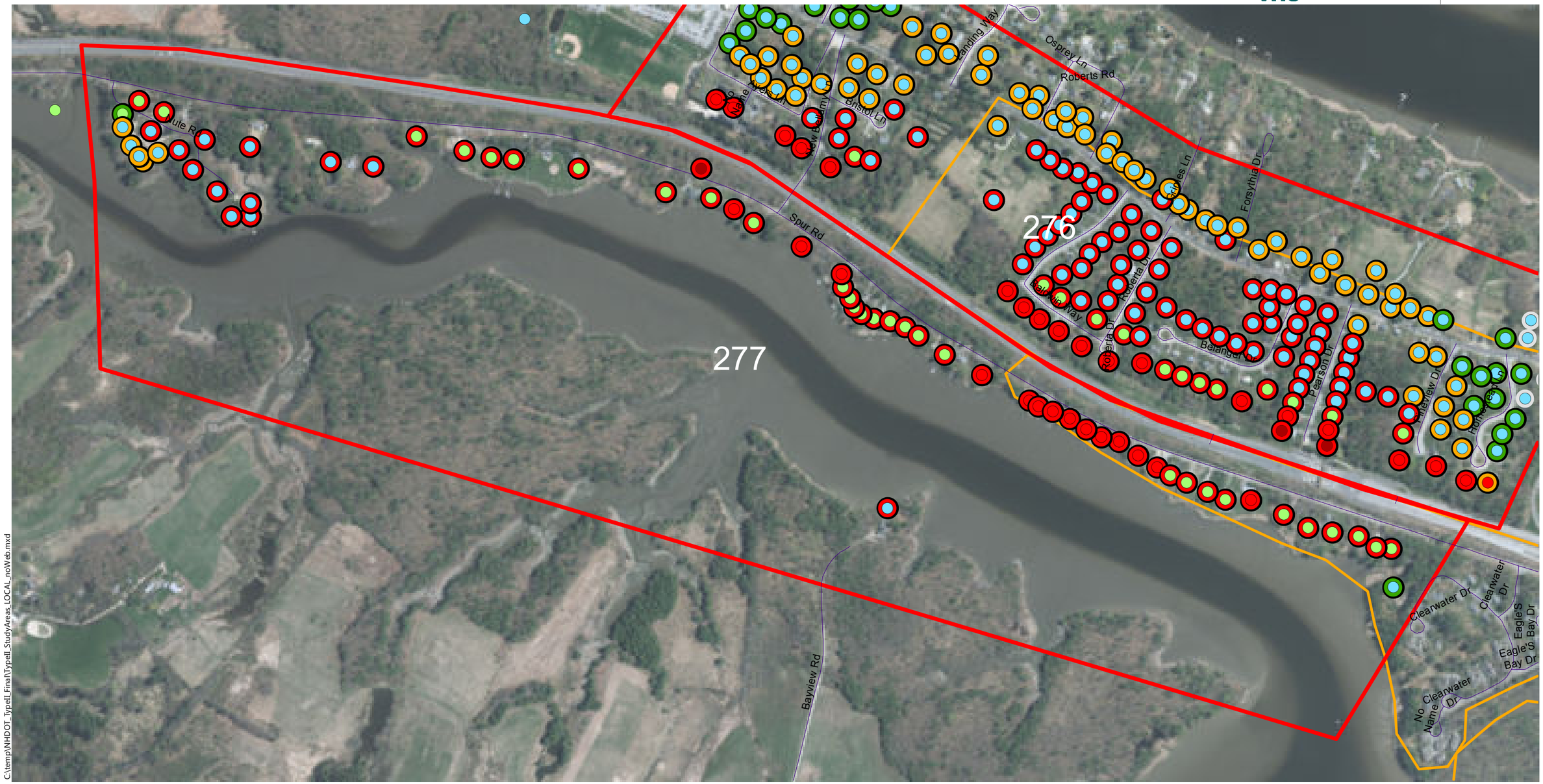
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 276
Roadway: Spaulding
Mile Posts Start/End: 5.2 to 6.4
Barrier Side NB Cost: $ 0
DEI: 851 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (Feasible/Reasonable in Prior Type I)



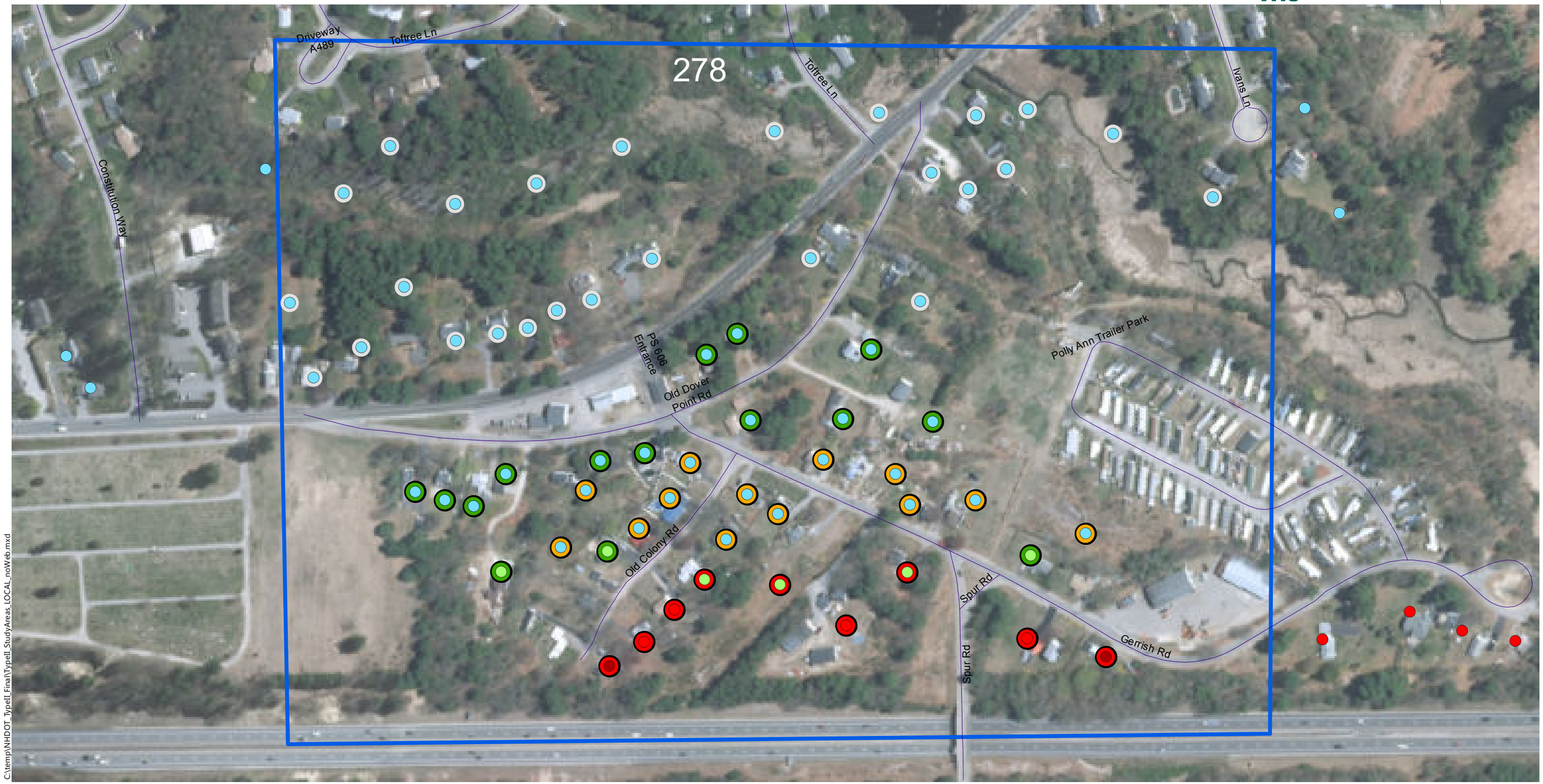
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 277
Roadway: Spaulding
Mile Posts Start/End: 15.7 to 17.5
Barrier Side SB Cost: $ 0
DEI: 1399 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (Feasible/Reasonable in Prior Type I)



0 100 200 400 Feet

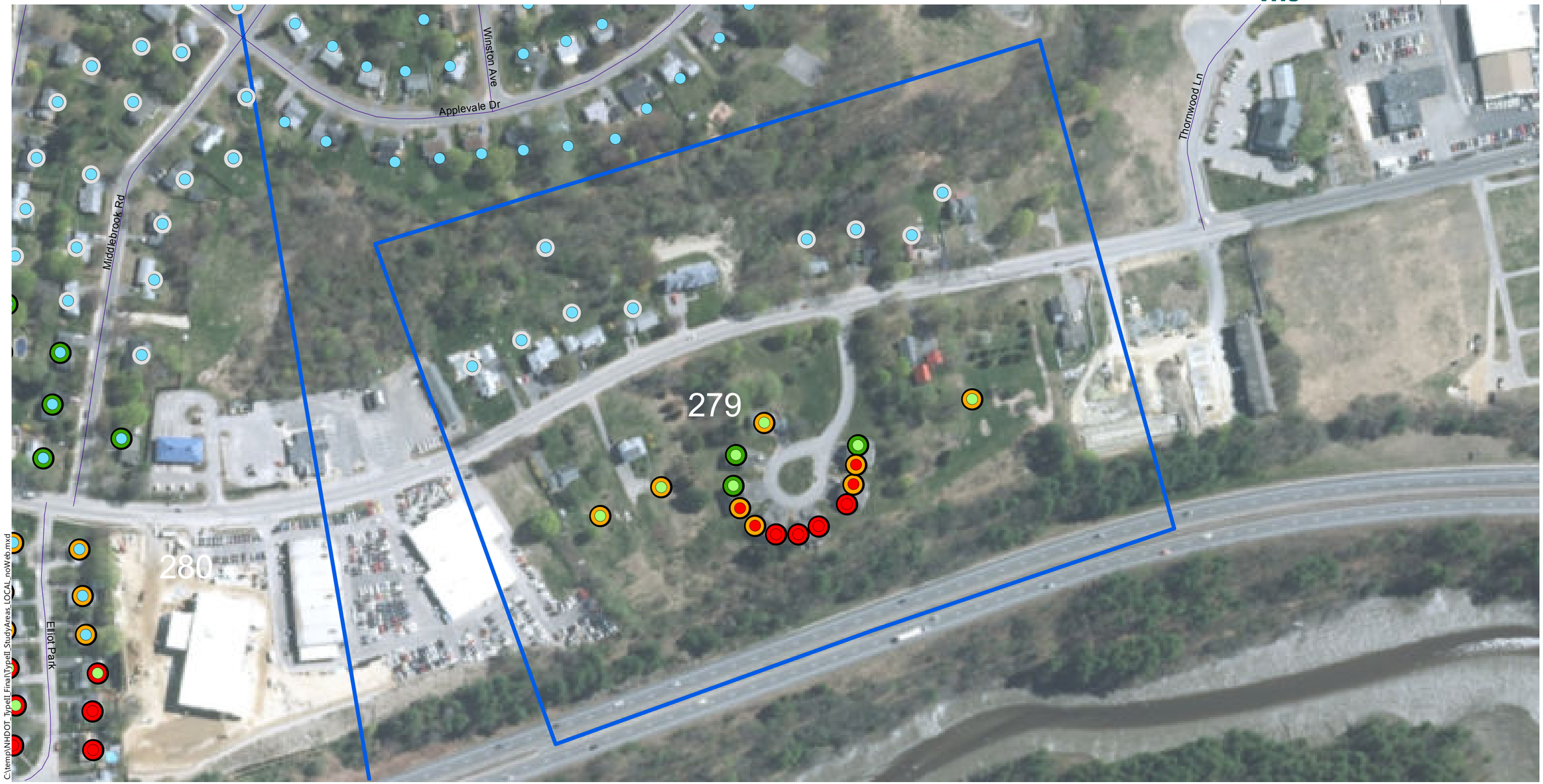
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 278
Roadway: Spaulding
Mile Posts Start/End: 7.4 to 7.8
Barrier Side NB Cost: $ 1747500
DEI: 1494 DEI Criteria: 1600
Dover, New Hampshire
Eligible



0 100 200 400 Feet

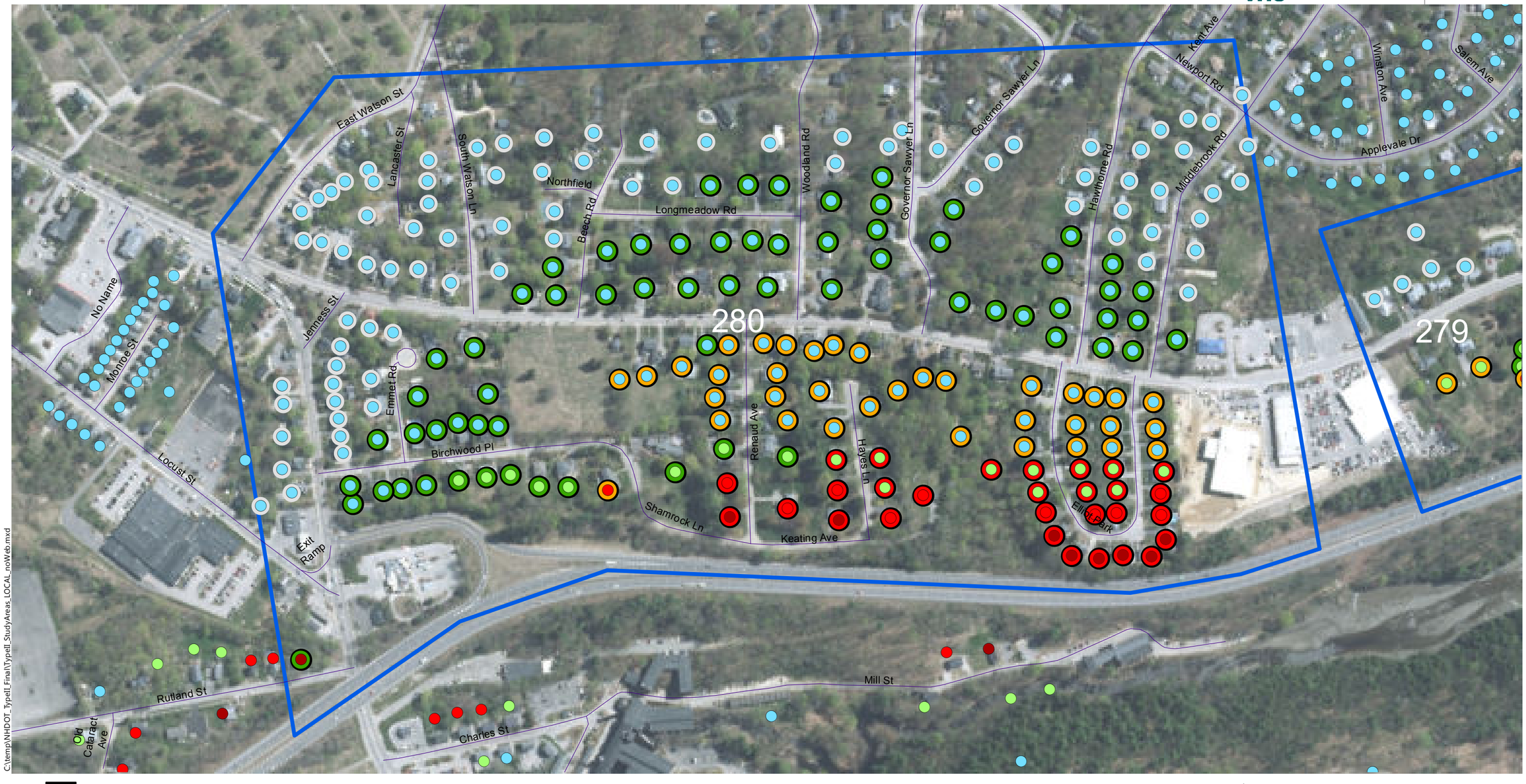
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 279
Roadway: Spaulding
Mile Posts Start/End: 8.2 to 8.5
Barrier Side NB Cost: $ 732000
DEI: 1435 DEI Criteria: 1600
Dover, New Hampshire
Eligible



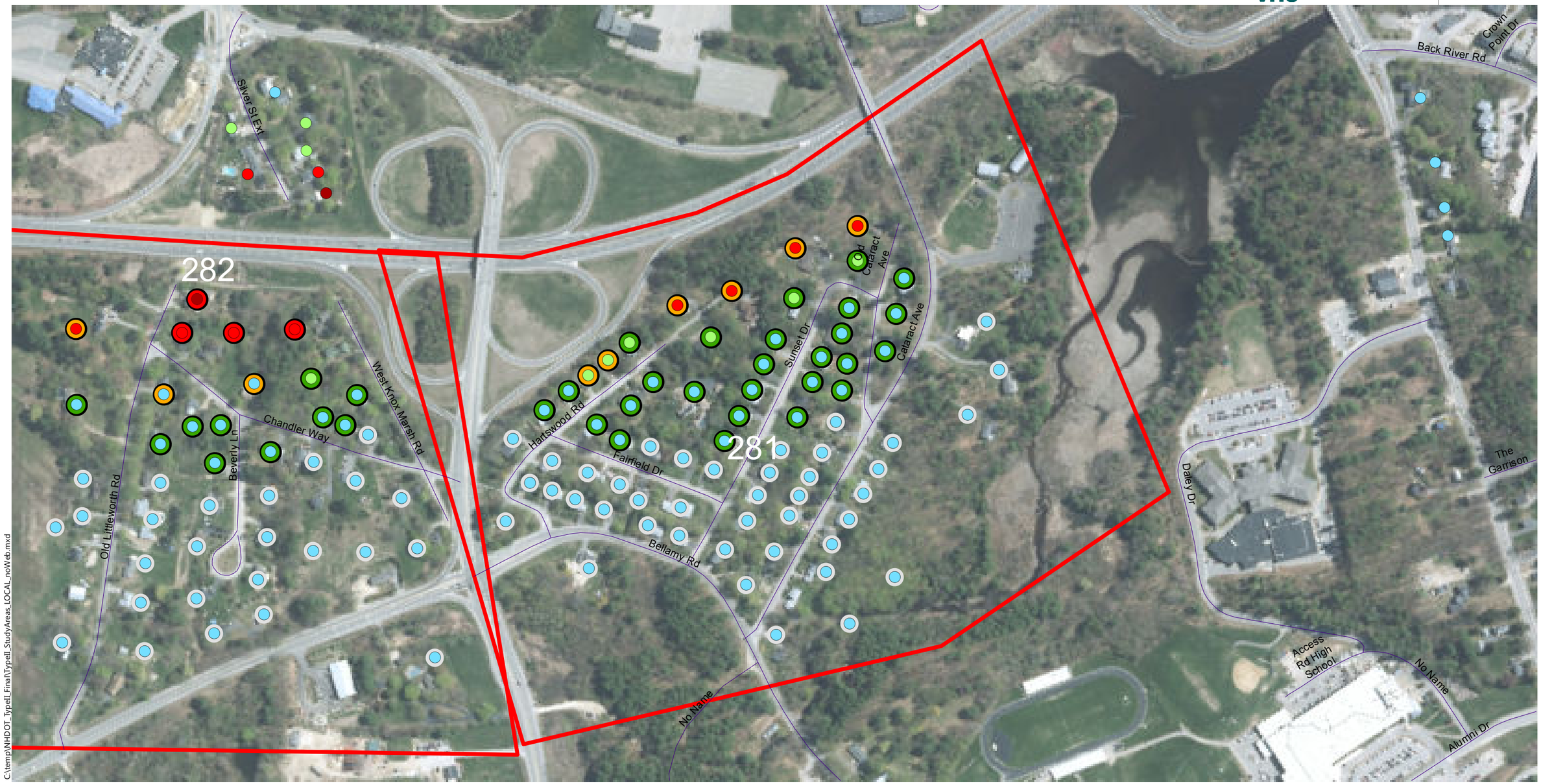
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 280
Roadway: Spaulding
Mile Posts Start/End: 8.5 to 9.2
Barrier Side NB Cost: $ 2662500
DEI: 667 DEI Criteria: 1600
Dover, New Hampshire
Eligible



Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 281
Roadway: Spaulding
Mile Posts Start/End: 13 to 13.4
Barrier Side SB Cost: $ 0
DEI: 2557 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (DEI)



0 100 200 400 Feet

Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 282
Roadway: Spaulding
Mile Posts Start/End: 12.7 to 13
Barrier Side SB Cost: $ 0
DEI: 1996 DEI Criteria: 1600
Dover, New Hampshire
Ineligible (DEI)



0 100 200 400 Feet

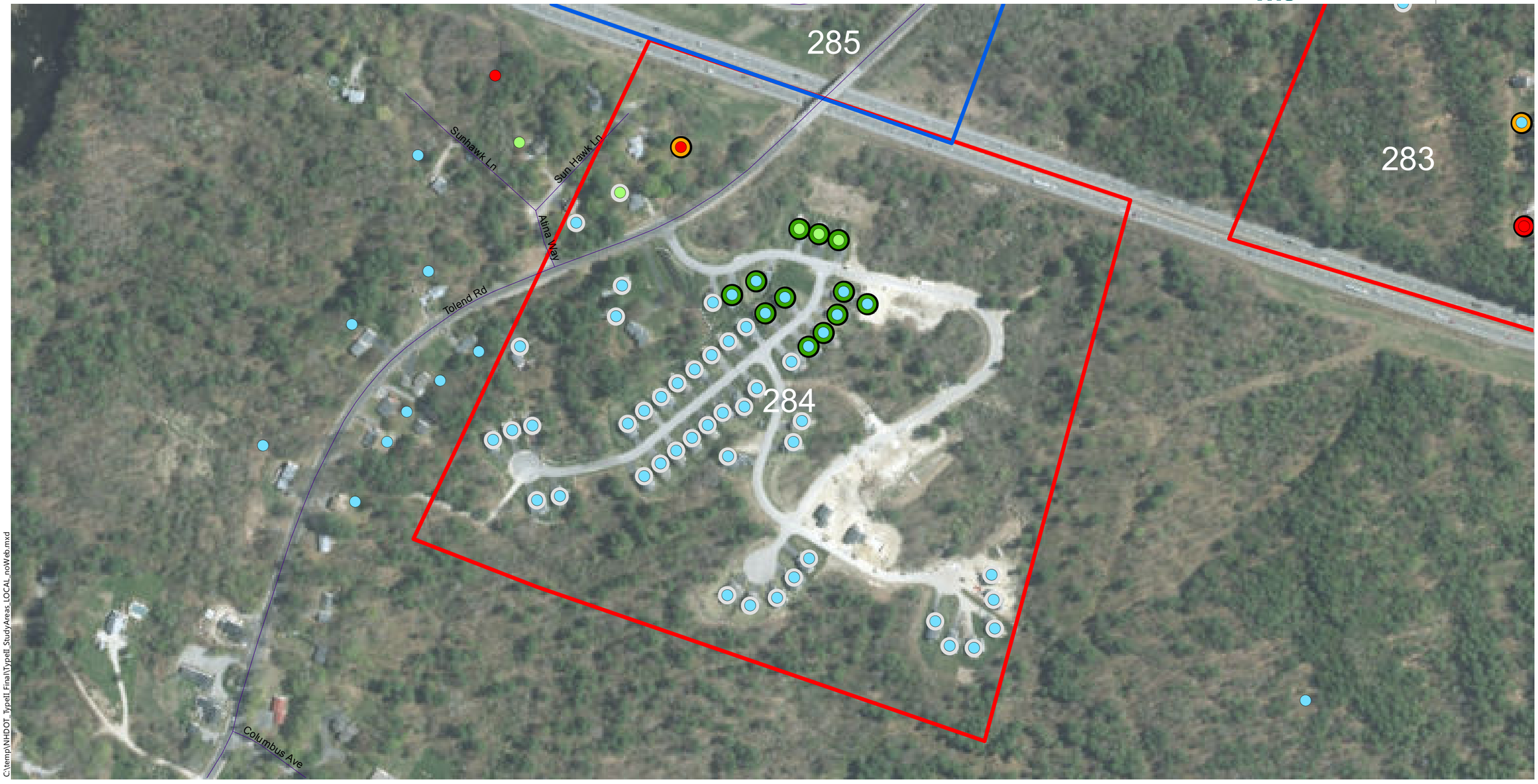
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 283
Roadway: Spaulding
Mile Posts Start/End: 10.3 to 10.7
Barrier Side NB Cost: $ 0
DEI: 1705 DEI Criteria: 1500
Dover, New Hampshire
Ineligible (DEI)



0 100 200 400 Feet

Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 284
Roadway: Spaulding
Mile Posts Start/End: 11.8 to 12.1
Barrier Side SB Cost: $ 0
DEI: 3475 DEI Criteria: 1500
Dover, New Hampshire
Ineligible (DEI)

287 286 285 284 283

Sixth St
Whittier Falls Way
Hampshire Cir
Whittier St
Addison Pl
Addison Pl
Pleasant View Cir
Mineral Park Dr
Tolend Rd
Sunhawk Ln
Sun Hawk Ln
Cedarbrook Way
Cedarbrook Dr
Arcola St
Fourth St
Kennedy Cir
Iona Ave
Brookline Ave
No Name
Washington St
Avon Ave
Myra Ave
Washington St

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0 100 200 400 Feet

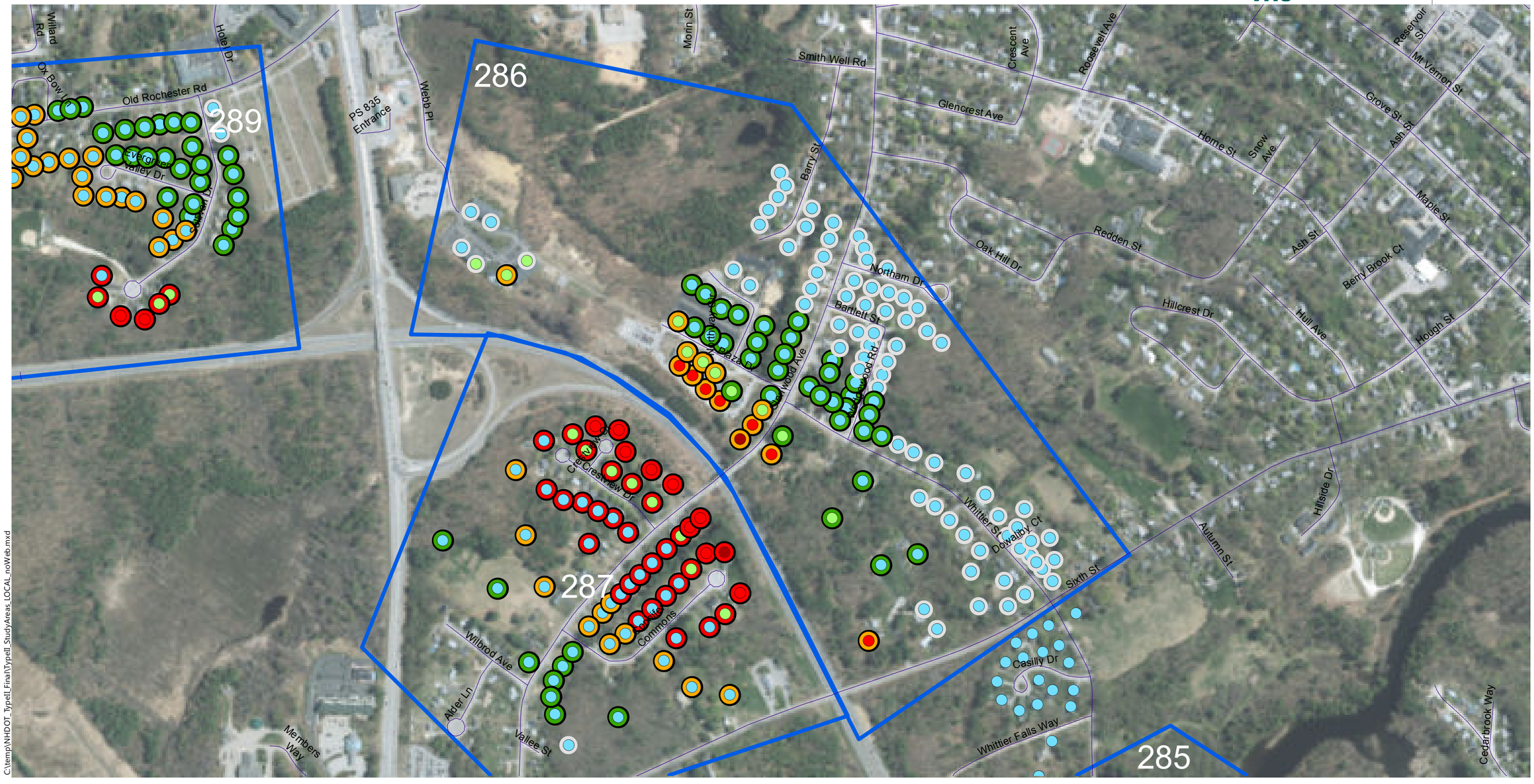
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 285
Roadway: Spaulding
Mile Posts Start/End: 10.8 to 11.4
Barrier Side NB Cost: $ 2160000
DEI: 316 DEI Criteria: 1500
Dover, New Hampshire
Eligible



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0 100200 400 Feet

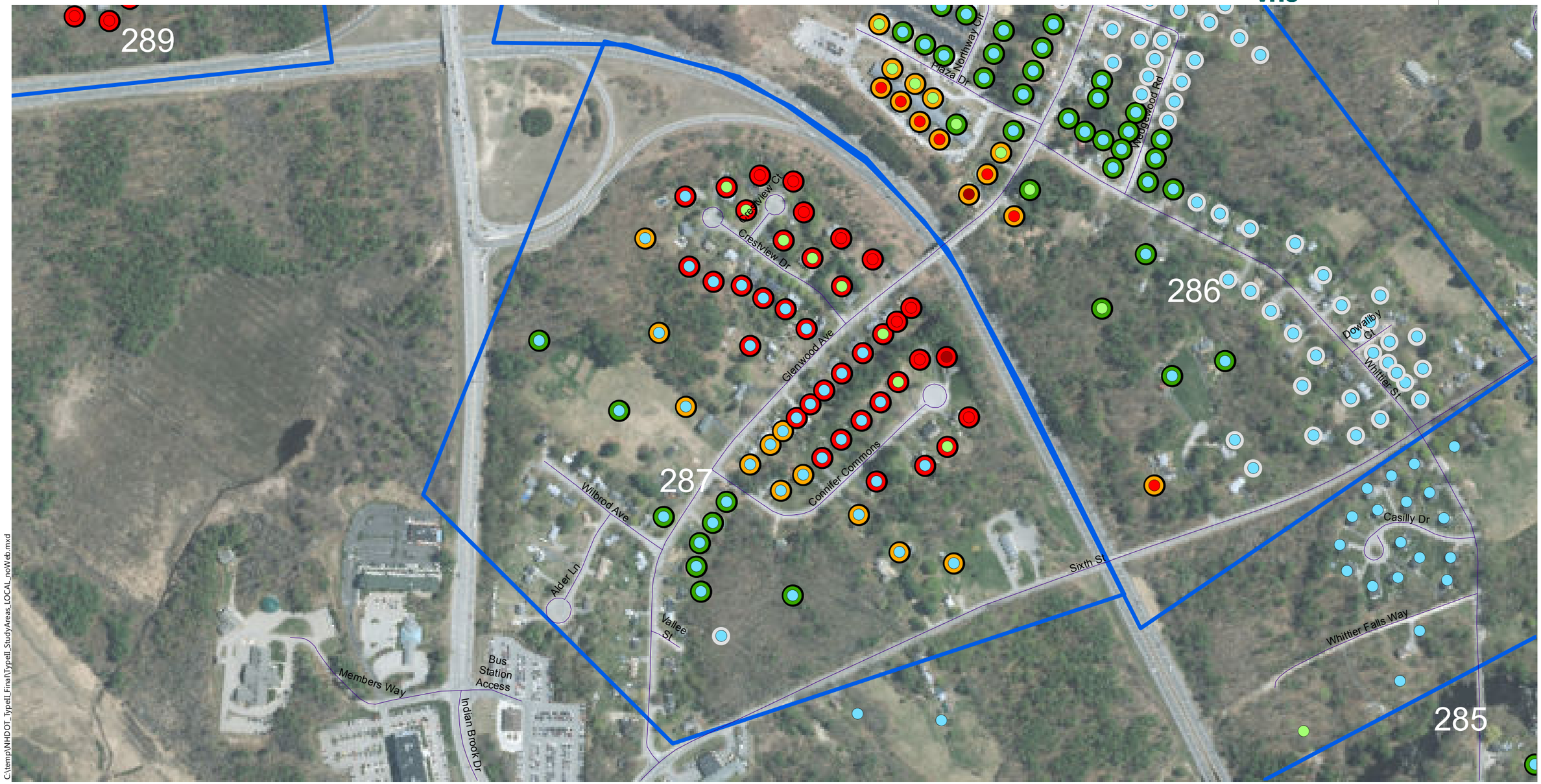
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 286
Roadway: Spaulding
Mile Posts Start/End: 11.5 to 12.2
Barrier Side NB Cost: $ 2835000
DEI: 576 DEI Criteria: 1700
Dover, New Hampshire
Eligible



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0 100 200 400 Feet

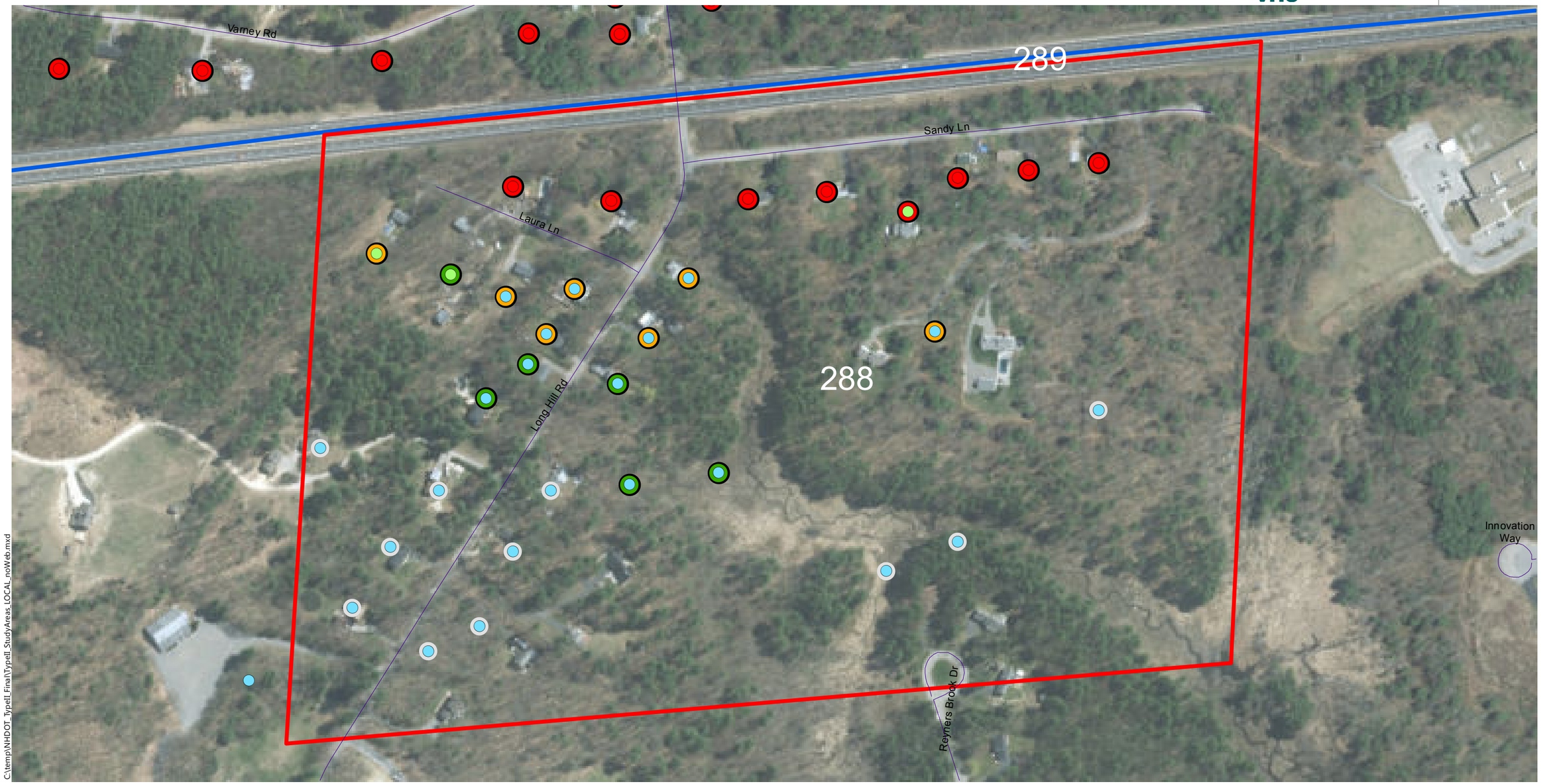
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 287
Roadway: Spaulding
Mile Posts Start/End: 10.6 to 11.2
Barrier Side SB Cost: $ 2362500
DEI: 1432 DEI Criteria: 1500
Dover, New Hampshire
Eligible



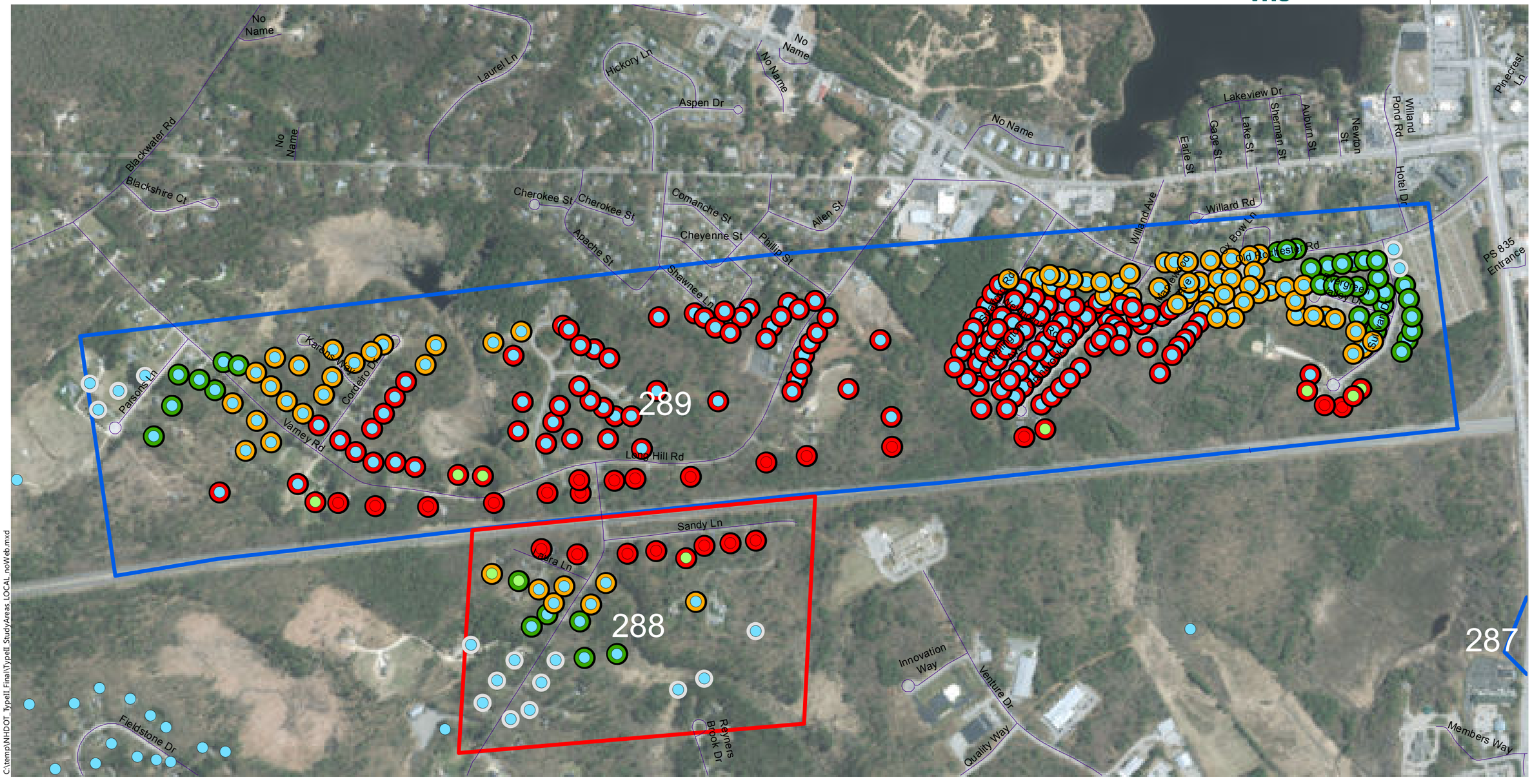
Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 288
Roadway: Spaulding
Mile Posts Start/End: 9 to 9.5
Barrier Side SB Cost: $ 0
DEI: 2329 DEI Criteria: 1500
Dover, New Hampshire
Ineligible (DEI)



Type II Noise Program Development | Type II Study Areas

Study Areas
- Ineligible for Type II
- Eligible for Type II
- Existing Barrier
- Prior Noise Barrier Study Area
- Existing Noise Barrier in Study Area

Loudest-hour Noise Level
- <61 dBA Leq
- 61 to 65 dBA Leq
- 66 to 70 dBA Leq (Impact)
- >70 dBA Leq (Impact)

Insertion Loss (25-ft Barrier)
- Less than 5 dB
- 5 to 6 dB (Benefit)
- 7 to 9 dB (Benefit/Feasible)
- 10+ dB (Benefit/Design Goal)

Barrier Area: 289
Roadway: Spaulding
Mile Posts Start/End: 12.3 to 14.3
Barrier Side NB **Cost: $ 7770000**
DEI: 992 **DEI Criteria: 1500**
Dover, New Hampshire
Eligible

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0015

Application Type:	Conditional Use Permit
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow a hotel use (or a lodging use exceeding 12 rooms) in the Gateway (G) Zoning District.

AGENDA ITEM #: 4-G

FILE: COND-2026-0015

APPLICANT: Lafrance Bowden Hospitality II, LLC

OWNER: ARC CAFEUSA001, LLC

LOCATION: 47 Central Ave. (Assessor's Map 17, Lot 76)

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 rooms

ACREAGE: 1.77 ± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

WAIVERS REQUESTED: None.

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: NHDES Sewer Connection Permit and four City of Dover CUPs are required for relief related to the streetscape standards, frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Site Plan reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

ATTACHMENTS: CUP application materials.

Summary of Request and Background

The applicant is proposing a four-story, 94-room extended stay hotel with 97 parking spaces at 47 Central Ave. (Assessor's Map 17, Lot 76).

In the Gateway Zoning District, a lodging use is permitted, up to 12 rooms. The applicant is seeking relief to propose a hotel with 94 rooms.

The applicant has applied for three other CUPs in relation to this proposal, seeking relief from the streetscape standards, primary frontage build-to requirements, and primary and secondary frontage built-out.

The Technical Review Committee reviewed the Site Plan application at their February 19, 2026 meeting.

Within the Gateway District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including dimensional regulations, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations- Non-Environmental

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

See reverse →

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0015

Application Type:	Conditional Use Permit
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.2. There are no restaurants, bars, or other public amenities associated with this proposal that would attract a large number of visitors beyond hotel guests. The proposed use is also expected to generate significantly fewer vehicle trips during typical weekdays and weekends than the prior on-site use, a fast-food restaurant, which is permitted by right.

Consistency with Land Use Regulations – Gateway CUP Criteria

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Gateway Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

Staff finds that the proposed hotel use is consistent with the intent of the stated criteria. The use is compatible with the surrounding neighborhood, as the site is set apart from residential properties and is surrounded by commercial uses, and its proximity to both the Spaulding Turnpike and downtown area supports a hotel use in this location. The use is also limited to lodging without high-intensity commercial activities.

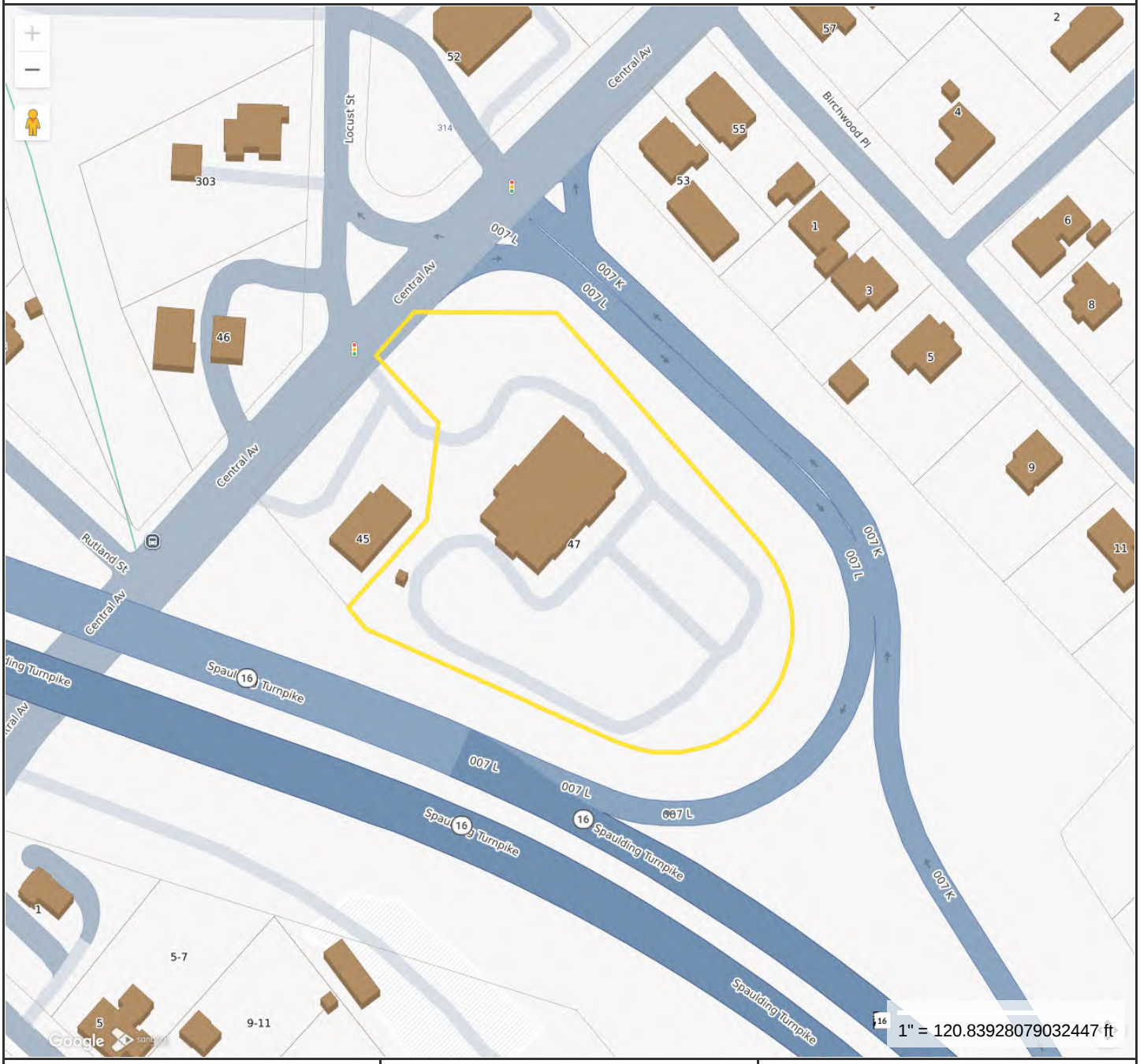
Staff Recommendation:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Approval of Site Plan (SITE-2026-0001);
2. Approval of Conditional Use Permits (COND-2026-0016, COND-2026-0017, and COND-2026-0018);
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0015 47 CENTRAL AVENUE



Property Information

Location	47 CENTRAL AV
Owner	ARC CAFEUSA001 LLC
Land Use	326C
Zoning Code	G
Property Id	17076-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0015
FOR CITY OF DOVER, N.H.

Permit Type Conditional Use
Work Class: Non-Environmental
Status: In Review
Valuation: $0.00

Project:
District: None
Square Feet: 0.00
Assigned To: Blonigen, Rachel

App Date: 03/06/2026
Exp Date: NOT AVAILABLE
Completed: NOT COMPLETED
Approval Expire Date:

Description: Conditional Use Permit request to allow a 94-room hotel (lodging use exceeding 12 rooms) at 47 Central Avenue in the Gateway District.

Parcel: 17076-000000 Main

Address: 47 Central Av Main
Dover, NH

Zone: G(Gateway District)

Architect
David Sherborne
Business: (603) 527-9090

Plan Preparer
Brian Jones
Business: (603) 527-5500

Applicant
Barry Stowe
11 Corporate Drive
Belmont, NH 03220
Business: (603) 527-9090

Owner
Timothy Burkhardt
Business: (508) 676-7888

Engineer
Jeffrey Dirk
Business: (978) 269-6830

Wetlands Scientist
Cynthia Balcius
Business: (603) 527-9090

Permit Custom Fields

Select Permit Type	Gateway District	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	G	New Change in Impervious/Paved Area (sq ft)	-533	Work	Hotel - 94 Rooms
permitstatefed	NHDES Sewer Connection Permit - Pending local sign off before sending to the NHDES Wastewater Engineering Bureau				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Barry_Stowe_3/6/2026.jpg	03/06/2026 10:52	Stowe, Barry		Uploaded via CSS
Permit Snapshot Report.pdf	03/06/2026 10:53	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000718	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000718	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/10/2026 14:48
Confirm application complete v.1	Generic Action		03/10/2026 14:48
~~Conditional Use Review v.1~~	Receive Submittal		03/10/2026 14:48
Planning Board v.1		03/10/2026 14:48	
Planning Board Agenda v.1	Task	03/10/2026 14:48	03/10/2026 14:49
Invoice for Notices v.1	Task	03/10/2026 14:48	03/10/2026 14:49
Send Notices v.1	Task	03/10/2026 14:49	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		

PERMIT SNAPSHOT REPORT (COND-2026-0015)

Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: *Lafrance Bowden Hospitality II, LLC* Telephone # *603-527-9090 (agent)*

Address of Applicant: *41 Old Bedford Road, Westport, MA 02790*

E-Mail Address: *barrys@opechee.com (agent)*

Name of Property Owner (if different from applicant): *Arc Cafeusa001 Llc* Telephone # *603-527-9090 (agent)*

Address of Property Owner: *11995 El Camino Real, San Diego, CA 92130*

PROPERTY INFORMATION

Assessor's Map # *17* Lot(s) # *76*

Address of Property: *47 Central Avenue*

Zoning District(s) *Gateway District (G)* Overlay District(s) *N/A*

Existing Use of Property: *Abandon Burger King Fast Food Restaurant*

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☑ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Hotel Use - See attached CUP narrative

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Connection Permit (pending)

NHDES Sewer Connection Permit (pending)

Name of Professional That Prepared Plans: Brian Jones, P.E., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 13,809 E-mail address: bjones@allenmajor.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 1-28-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ (Agent) Date: 1-28-2026

OPECHEE
CONSTRUCTION CORPORATION

Conditional Use Permit Narrative
Hotel Use – Gateway District
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

The applicant proposes a **94-room TownePlace Suites by Marriott** hotel at **47 Central Avenue** within the City of Dover's **Gateway District**. A Conditional Use Permit is requested for the **hotel use**, as required by Chapter 170 of the Zoning Ordinance. This narrative addresses the appropriateness of the proposed use relative to the intent of the Gateway District and applicable conditional use criteria.

The project represents the **redevelopment of a previously developed and abandoned commercial site**, formerly occupied by a fast-food restaurant. The replacement of an underutilized property with a professionally managed lodging use supports reinvestment along a designated gateway corridor and aligns with the district's purpose of accommodating commercial and service-oriented uses that benefit from regional access.

TownePlace Suites is a **limited-service, extended-stay hotel** designed to accommodate longer guest stays, including business travelers, relocating households, and families. The hotel is intentionally limited in scope and does not include meeting or conference facilities, restaurants, bars, drive-through services, or entertainment venues. Food and beverage service is limited to continental breakfast offerings and small grab-and-go items for registered guests. These characteristics result in **lower daily turnover, reduced peak-hour activity, and predictable operational patterns** when compared to many other commercial uses permitted within the Gateway District.

The hotel includes an **outdoor guest patio with a fireplace and grilling facilities**, intended solely as an amenity for hotel guests. The patio is not open to the public, is not programmed for events, and does not function as an assembly or entertainment space. As such, the outdoor amenities do not create noise, traffic, or activity beyond what is typical for an extended-stay lodging use.

The site's location outside of Dover's traditional downtown core and in close proximity to the **Spaulding Turnpike** makes it particularly well suited for a hotel serving regional travelers. This placement allows lodging demand to be accommodated in a gateway location designed for regional access, while avoiding additional pressure on the downtown street network.

Operationally, the hotel functions with **relatively low staffing levels**, limited service traffic, and vehicle trips that are distributed throughout the day rather than concentrated during peak commuter periods. Compared to the site's former fast-food restaurant use—or a potential reactivation of that use—the proposed hotel represents a **lower-intensity alternative** in terms of traffic generation, late-night activity, and off-site impacts.

The proposed hotel use is compatible with surrounding commercial development, will not be detrimental to adjacent properties, and will not adversely affect public health, safety, or municipal services. The use is consistent with the intent of the Gateway District and satisfies the Conditional Use Permit criteria set forth in Chapter 170 of the Zoning Ordinance. Approval of the requested Conditional Use Permit will allow for the productive reuse of an abandoned site in a manner consistent with the City's planning objectives.

Abutters List

TownePlace Suites by Marriott
47 Central Avenue, Dover, NH 0303820
January 28, 2026

Owner:

Tax Map 17 Lot 76
Arc Cafeusa001
11995 El Camino Real
San Diego, CA 92130

Applicant:

Lafrance Bowden Hospitality II, LLC
c/o: Tim Burkhardt, CHA
41 Old Bedford Road
Westport, MA 02790

Design-Build Firm/Architect/Agent:

Opechee Construction Corporation
c/o: Barry Stowe & David Sherborne, Architect
11 Corporate Drive
Belmont, NH 03220

Civil Engineer/Surveyor/Landscape Architect:

Allen & Major Associates, LLC
c/o: Brian Jones, P.E/James Smith, L.S./ Bethany Dermondy, L.A
400 Harvey Road, Suite D
Manchester, NH 03103

Transportation Engineer:

Vanasse & Associates, Inc.
c/o: Jeffrey Dirk, P.E.
35 New England Business Center Drive,
Suite 140
Andover, MA 01810-1066

Wetland Scientist:

Stoney Ridge Environmental, LLC
c/o: Cynthia Balcius, CSS, CWS
8 Kiana Road
Alton, NH 03809

APPLICANT
LETTER OF AUTHORIZATION

City of Dover, c/o City Planning
288 Central Avenue, Dover, NH 03820

New Hampshire Department of Transportation, c/o District 6
271 Main Street, PO Box 740, Durham, NH 03824

New Hampshire Department of Environmental Services
29 Hazen Drive, Concord, NH 03302

Re: Proposed Hotel
Assessors Map 17 Lot 76 (Parcel ID: 17076)
47 Central Avenue, Dover, NH 03820

To Whom It May Concern:

By this letter, I hereby Authorize Opechee Construction Corporation and their design consultants to act as agents for the purposes of preparing, executing, submitting, and representing permit applications to the City of Dover and New Hampshire state agencies for a proposed hotel at the property referenced above.

List of agents, including, but not limited to:

- Andrew Pike, President, Opechee Construction Corporation
- David Sherborne, Architect & Vice President, Opechee Construction Corporation
- Barry Stowe, Civil Design Manager, Opechee Construction Corporation
- Brian Jones, Civil Engineer, Allen & Major Associates, Inc.
- Jeffrey Dirk, Transportation Engineer, Vanasse & Associates, Inc.

ARC CAFEUSA001, LLC, a Delaware limited liability company
By: VEREIT Operating Partnership, L.P., a Delaware limited partnership, its member manager

Daniel Haug
Daniel Haug (Jan 20, 2026 17:12:52 MST)
Signature

January 20, 2026
Date

Daniel Haug, SVP, Associate General Counsel
Print Name

Landowner: Arc Cafeusa001 LLC Address: 11995 El Camino Real, San Diego, CA 92130

COND-2026-0015 **47 CENTRAL AVENUE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
17069-000000	1 BIRCHWOOD PL	OLIVA STEPHEN V & AMY M TRUSTEES	OLIVA STEPHEN V & AMY M REVOCABLE TRUST	1 BIRCHWOOD PL	DOVER	NH	03820
15018-000000	118 RUTLAND ST	HAZEN BENJAMIN C		1601 29TH ST #1292 PMB 1105	BOULDER	CO	80301
17068-000000	53 CENTRAL AV	HURLEY THOMAS A		53 CENTRAL AVE	DOVER	NH	03820
17071-000000	5 BIRCHWOOD PL	GAGNE SANDRA D TRUSTEE	GAGNE SANDRA D REVOCABLE TRUST	5 BIRCHWOOD PL	DOVER	NH	03820
15020-000000	303 LOCUST ST	HANCOCK TYLER R REAL ESTATE LLC		303 LOCUST ST	DOVER	NH	03820
15019-000000	46 CENTRAL AV	GTY MA/NH LEASING INC	C/O GETTY REALTY CORP	292 MADISON AVE FL 9	NEW YORK	NY	10017-6376
17067-000000	55 CENTRAL AV	GILLIS BENJAMIN T	THURLOW KORIE	55 CENTRAL AVE UNIT #2	DOVER	NH	03820
17074-000000	11 BIRCHWOOD PL	THOMPSON THERESA B		9 BLUEBERRY HILL RD	GROVELAND	MA	01834
15021-022000	271 LOCUST ST	DOUBLE DIAMOND HOLDINGS SOUTH LLC		340 CENTRAL AVE #202	DOVER	NH	03820
15071-000000	52 CENTRAL AV	ARANOSIAN OIL CO INC		557 NO STATE ST	CONCORD	NH	03301
17073-000000	9 BIRCHWOOD PL	BAHALKEH ESMAEIL		67 FEDERAL ST APT 3D	PITTSFIELD	MA	01201-6364
17076-E00001	45 CENTRAL AV	WHITE MOUNTAIN SUBWAYS LLC		377 WHITTIER HIGHWAY	MOULTONBOROUGH	NH	03254
17070-000000	3 BIRCHWOOD PL	ARNOLD ROBERT JW	EVANS NANCY	POST BOX 1489	WELLS	ME	04090
17076-000000	47 CENTRAL AV	ARC CAFEUSA001 LLC		11995 EL CAMINO REAL	SAN DIEGO	CA	92130
		LAFRANCE BOWDEN HOSPITALITY II, LLC	TIM BURKHARDT, CHA	41 OLD BEDFORD ROAD	WESTPORT	MA	02790
		OPECHEE CONSTRUCTION CORPORATION	BARRY STOWE	11 CORPORATE DRIVE	BELMONT	NH	03220
		ALLEN & MAJOR ASSOCIATES, LLC	BRIAN JONES	400 HARVEY ROAD, SUITE D	MANCHESTER	NH	03103
		VANASSE & ASSOCIATES, INC	JEFFREY DIRK, PE	35 NEW ENGLAND BUSINESS C	ANDOVER	MA	01810-1066
		STONEY RIDGE ENVIRONMENTAL, LLC	CYNTHIA BALCIUS, CSS, CWS	8 KIANA ROAD	ALTON	NH	03809

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0016

Application Type:	Conditional Use Permit
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the required 60% primary frontage build-out and the primary front build-to line of 5 feet minimum to 20 feet maximum in order to construct a 94-room hotel. *(Site Review Application and three other related City of Dover CUP applications are being considered as part of this proposal.)*

AGENDA ITEM #: 4-H

FILE: COND-2026-0016

APPLICANT: Lafrance Bowden Hospitality II, LLC

OWNER: ARC CAFEUSA001, LLC

LOCATION: 47 Central Ave. (Assessor's Map 17, Lot 76)

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 rooms

ACREAGE: 1.77 ± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

WAIVERS REQUESTED: None.

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: NHDES Sewer Connection Permit and four City of Dover CUPs are required for relief related to the streetscape standards, frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Site Plan reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

ATTACHMENTS: CUP application materials.

Summary of Request and Background

The applicant is proposing a four-story, 94-room extended stay hotel with 97 parking spaces at 47 Central Ave. (Assessor's Map 17, Lot 76).

In the Gateway Zoning District, the minimum primary frontage build-out is 60% and the required primary front build-to line 5-20 feet. As the subject property is a unique shape, the applicant is proposing the hotel to be setback around 154 feet from the primary frontage on Central Avenue with no frontage build-out. The primary frontage along Central Avenue totals approximately 47.5 feet with around 41 feet of that area associated with access lanes.

The applicant has applied for three other CUPs in relation to this proposal, seeking relief from the streetscape standards, secondary frontage build-out requirements, and to allow a hotel use (or a lodging use exceeding 12 rooms).

The Technical Review Committee reviewed the Site Plan application at their February 19, 2026 meeting.

Within the Gateway District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including dimensional regulations, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations – Non-Environmental CUP Criteria

Chapter 170-19.B.1 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

See reverse →

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.1. The site has constraints due to the shape that would make it nearly impossible to meet the primary frontage build-out and build-to requirements. For example, it would not be possible to meet the underlying side setbacks of 10 feet and the 60% frontage build-out requirement while also including the required 24-foot width for a two-way accessway. The proposed design continues the existing use of the primary frontage as the site accessway while incorporating pedestrian improvements and maintaining appropriate sight distances for vehicles. The current accessway, which covers nearly the entire primary frontage, is proposed to be improved through repainting, paving, and the replacement of traffic loop sensors.

Consistency with Land Use Regulations – CBD CUP Criteria
Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Central Business District Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

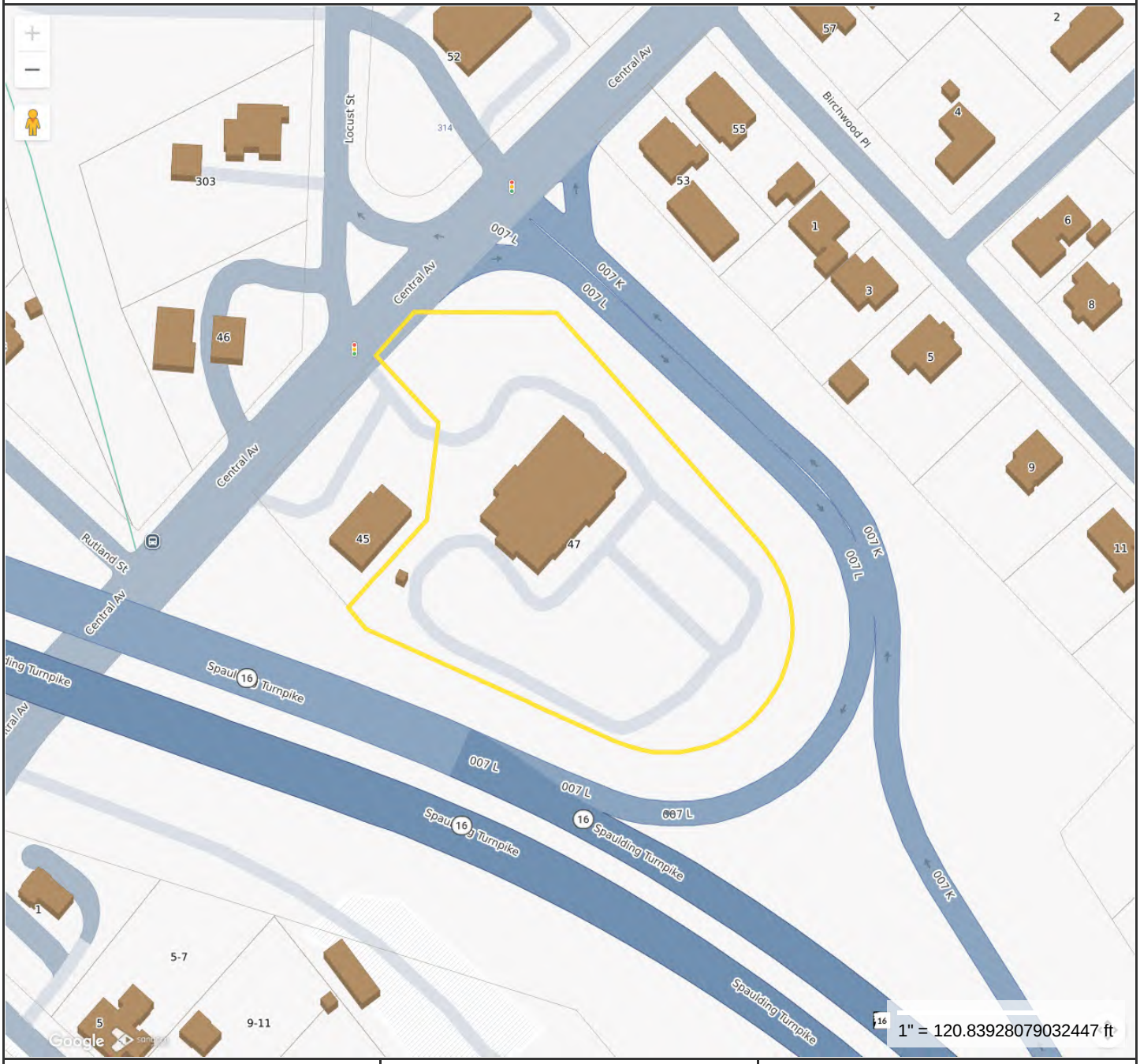
Staff feels the applicant has met said criteria and has considered the general design of the surrounding neighborhood with the proposed building placement. As stated above, the applicant proposes to continue the use of the primary frontage as the accessway but proposes improvements to existing pedestrian and vehicle access to the site. While the building is not located along the primary frontage and extends beyond the maximum build-to line, its placement is similar to the existing structure on site. The proposed location also places the building farther from the nearest abutting residential use and closer to the abutting commercial use which similarly does not meet these two underlying zoning requirements.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to Be Met Prior to Issuance of a Conditional Use Permit:

1. Approval of Site Plan (SITE-2026-0001);
2. Approval of Conditional Use Permits (COND-2026-0015, COND-2026-0017, and COND-2026-0018);
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0016 47 CENTRAL AVENUE



Property Information

Location	47 CENTRAL AV
Owner	ARC CAFEUSA001 LLC
Land Use	326C
Zoning Code	G
Property Id	17076-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0016
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/06/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Conditional Use Permit request for flexibility from the Central Avenue primary frontage build-to line requirement in the Gateway District for the proposed 94-room TownePlace Suites hotel at 47 Central Avenue.

Parcel:	17076-000000 Main	**Address:**	47 Central Av Dover, NH Main	**Zone:**	G(Gateway District)

Architect	Plan Preparer	Applicant	Owner
David Sherborne Business: (603) 527-9090	Brian Jones Business: (603) 527-5500	Barry Stowe 11 Corporate Drive Belmont, NH 03220 Business: (603) 527-9090	Timothy Burkhardt Business: (508) 676-7888

Engineer	Wetlands Scientist
Jeffrey Dirk Business: (978) 269-6830	Cynthia Balcius Business: (603) 527-9090

Permit Custom Fields

Select Permit Type	Gateway District
What is the parcel zoned?	G

General Purpose	New Construction
New Change in Impervious/Paved Area (sq ft)	-533

Project Zone	Mixed Use
Work	The applicant proposes to redevelop the former Burger King property at 47 Central Avenue into a 94-room TownePlace Suites by Marriott hotel. The project is located within the Spaulding Turnpike interchange area and is intended to serve regional and interstate travelers. The development is consistent with the Gateway District's purpose of accommodating hospitality uses in locations with strong regional access and will not result in adverse impacts to surrounding properties.

permitstatefed	NHDES Sewer Connection Permit - Pending local sign off before sending to the NHDES Wastewater Engineering Bureau

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Barry_Stowe_3/6/2026.jpg	03/06/2026 12:11	Stowe, Barry		Uploaded via CSS
Permit Snapshot Report.pdf	03/06/2026 12:12	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

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	Total for Invoice INV-2026000719	$200.00	$0.00
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PERMIT SNAPSHOT REPORT (COND-2026-0016)

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/10/2026 15:22
Confirm application complete v.1	Generic Action		03/10/2026 15:22
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Planning Board Agenda v.1	Task	03/10/2026 15:22	03/10/2026 15:23
Invoice for Notices v.1	Task	03/10/2026 15:23	03/10/2026 15:23
Send Notices v.1	Task	03/10/2026 15:23	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
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NOD Sent to Applicant v.1	Create Report		
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Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: *Lafrance Bowden Hospitality II, LLC* Telephone # *603-527-9090 (agent)*

Address of Applicant: *41 Old Bedford Road, Westport, MA 02790*

E-Mail Address: *barrys@opechee.com (agent)*

Name of Property Owner (if different from applicant): *Arc Cafeusa001 Llc* Telephone # *603-527-9090 (agent)*

Address of Property Owner: *11995 El Camino Real, San Diego, CA 92130*

PROPERTY INFORMATION

Assessor's Map # *17* Lot(s) # *76*

Address of Property: *47 Central Avenue*

Zoning District(s) *Gateway District (G)* Overlay District(s) *N/A*

Existing Use of Property: *Abandon Burger King Fast Food Restaurant*

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☑ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Central Avenue primary frontage build-to and percentage build-out

See attached CUP narrative

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Connection Permit (pending)

NHDES Sewer Connection Permit (pending)

Name of Professional That Prepared Plans: Brian Jones, P.E., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 13,809 E-mail address: bjones@allenmajor.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 1-28-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ (Agent) Date: 1-28-2026

OPECHEE
CONSTRUCTION CORPORATION

Conditional Use Permit Narrative
Primary Secondary Frontages Build-to and Build-out – Gateway District
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

The applicant is proposing to redevelop the existing Burger King property at 47 Central Avenue into a 94-room TownePlace Suites by Marriott hotel within the City of Dover's Gateway District. The 1.77± acre site is uniquely configured with frontage along both Central Avenue and the Spaulding Turnpike (Route 16), with Central Avenue functioning as the primary frontage and the Spaulding Turnpike serving as a secondary frontage.

As illustrated on the provided civil plans, the parcel is irregularly shaped and constrained by its curvature along the Spaulding Turnpike right-of-way, existing interchange geometry, and the need to accommodate safe vehicular access and internal circulation. These physical characteristics significantly influence building placement and limit the extent to which a continuous building façade can be located directly along the Central Avenue frontage and the Spaulding Turnpike.

The subject site is located outside of Dover's traditional downtown core and functions as part of a gateway corridor serving both local and regional traffic, with immediate proximity to the Spaulding Turnpike interchange. The site design reflects a development pattern appropriate for a hotel use serving regional and interstate travelers rather than a fine-grained downtown street environment.

Two Conditional Use Permits are requested to allow flexibility with **(1) the Central Avenue Primary Frontage build-to line and associated percentage of frontage build-out, and (2) the Spaulding Turnpike Secondary Frontage percentage of frontage build-out**. The proposed building placement responds to the site's constrained geometry by balancing frontage visibility, guest access, and parking demands while maintaining an appropriate setback from the Spaulding Turnpike right-of-way.

While the proposed building does not fully meet the prescriptive build-to line and frontage build-out standards along Central Avenue & Spaulding Turnpike, the layout maintains the intent of the Gateway District regulations by establishing a strong architectural presence along the corridor and reinforcing the role of Central Avenue as a gateway into the City.

The requested flexibility is directly attributable to the site's irregular geometry, dual-frontage condition, and proximity to a limited-access highway, rather than a departure from the goals of the zoning ordinance. The proposed development will not result in adverse impacts to surrounding properties and is consistent with the Gateway District's purpose of accommodating hospitality uses in locations well suited for regional access without placing additional pressure on the downtown core.

Accordingly, the proposed Conditional Use Permit represents a reasonable and appropriate application of zoning flexibility in response to documented site constraints and satisfies the intent of the Gateway District frontage standards.

11 CORPORATE DRIVE ▪ BELMONT ▪ NH 03220
PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0017

Application Type:	Conditional Use Permit
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the required 60% secondary frontage build-out requirement to construct a 94- room hotel. *(Site Review Application and three other related City of Dover CUP applications are being considered as part of this proposal.)*

AGENDA ITEM #: 4-I

FILE: COND-2026-0017

APPLICANT: Lafrance Bowden Hospitality II, LLC

OWNER: ARC CAFEUSA001, LLC

LOCATION: 47 Central Ave. (Assessor's Map 17, Lot 76)

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 rooms

ACREAGE: 1.77 ± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

WAIVERS REQUESTED: None.

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: NHDES Sewer Connection Permit and four City of Dover CUPs are required for relief related to the streetscape standards, frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Site Plan reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

ATTACHMENTS: CUP application materials.

Summary of Request and Background

The applicant is proposing a four-story, 94-room extended stay hotel with 97 parking spaces at 47 Central Ave. (Assessor's Map 17, Lot 76).

The applicant is seeking relief from the 60% secondary frontage build-out requirements, allowing an approximately 22% frontage build-out. The subject parcel is a unique shape and has been determined as having two frontages; along Central Avenue as the primary frontage and along the Spaulding Turnpike as the secondary frontage. The secondary frontage is approximately 876 feet and to meet the 60% build-out requirement, a structure would need to be approximately 526 feet in length. With the proposed building placement along the secondary frontage, the structure is also set farther away from the nearest residential abutters. The applicant does meet the build-to requirement for the secondary frontage (5-20 feet), proposing a setback of approximately 16.7 feet.

The applicant has applied for three other CUPs in relation to this proposal, seeking relief from the streetscape standards, primary frontage build-to and build-out requirements, and to allow a hotel use (or a lodging use exceeding 12 rooms).

The Technical Review Committee reviewed the Site Plan application at their February 19, 2026 meeting.

Within the Gateway District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including dimensional regulations, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations- Non-Environmental CUP Criteria

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

See reverse →

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.2. as this proposed site design balances the access and parking demands, and proximity to the Spaulding Turnpike. The placement of the primary structure is also relatively similar to the other commercial sites in the area.

Consistency with Land Use Regulations – Gateway CUP Criteria

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Gateway Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

Staff finds that the applicant has met the stated criteria and that a structure designed to meet the required secondary frontage build-out requirement would be incongruous with the surrounding area. The applicant has also proposed a site design that accommodates pedestrian access as well as on-site vehicular circulation and parking, supporting both safety and accessibility for all users.

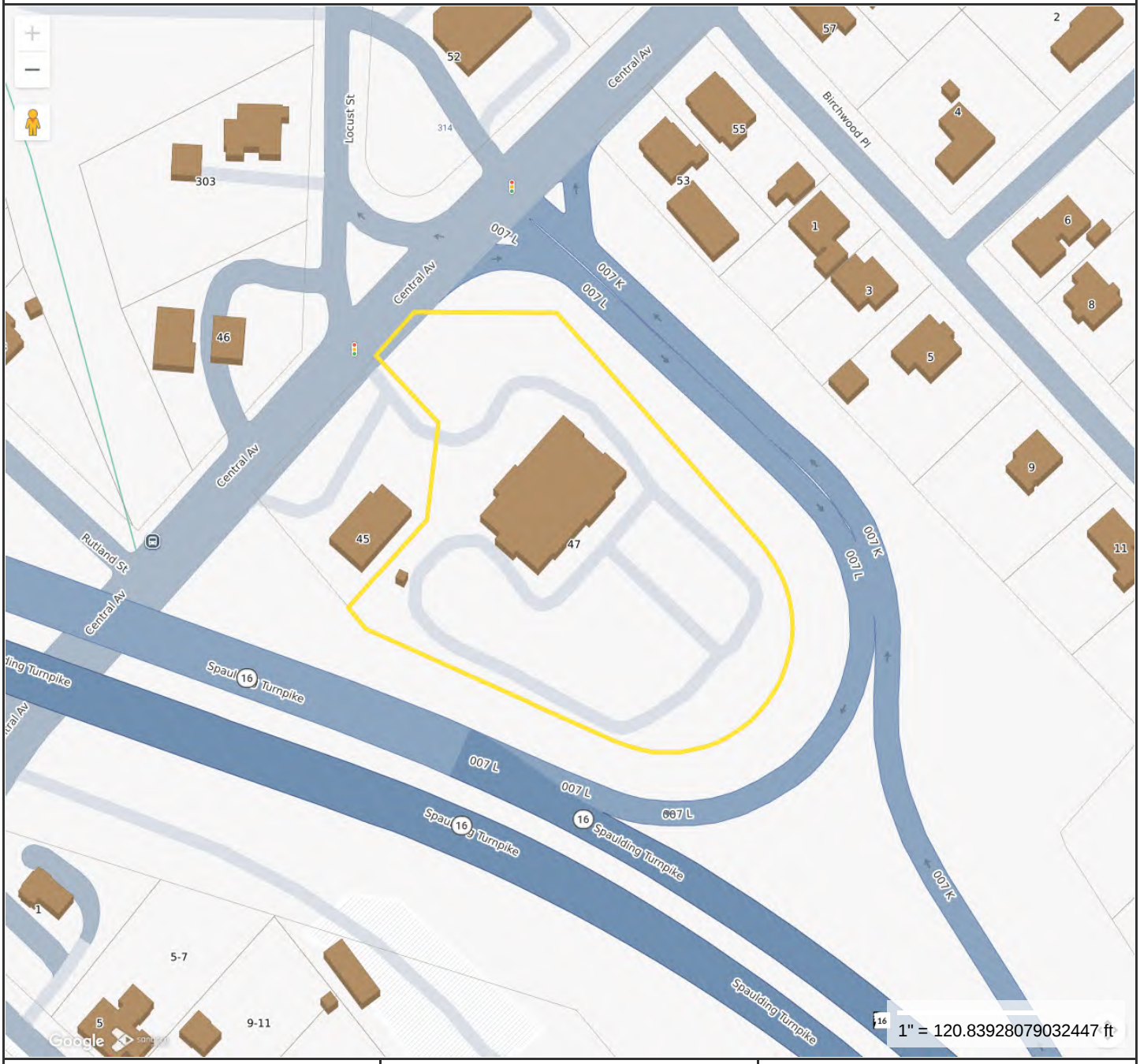
Staff Recommendation:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Approval of Site Plan (SITE-2026-0001);
2. Approval of Conditional Use Permits (COND-2026-0015, COND-2026-0016, and COND-2026-0018);
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0017 47 CENTRAL AVENUE



Property Information

Location	47 CENTRAL AV
Owner	ARC CAFEUSA001 LLC
Land Use	326C
Zoning Code	G
Property Id	17076-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0017
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/06/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Conditional Use Permit request for flexibility from the Spaulding Turnpike secondary frontage build-out requirement in the Gateway District for the proposed 94-room TownePlace Suites hotel at 47 Central Avenue.

Parcel:	17076-000000	Main	**Address:**	47 Central Av Dover, NH	Main

Zone: G(Gateway District)

Architect David Sherborne Business: (603) 527-9090	Plan Preparer Brian Jones Business: (603) 527-5500	Applicant Barry Stowe 11 Corporate Drive Belmont, NH 03220 Business: (603) 527-9090	Owner Timothy Burkhardt Business: (508) 676-7888
Engineer Jeffrey Dirk Business: (978) 269-6830	Wetlands Scientist Cynthia Balcius Business: (603) 527-9090		

Permit Custom Fields

Select Permit Type	Gateway District	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	G	New Change in Impervious/Paved Area (sq ft)	-533	Work	The applicant proposes redevelopment of the former Burger King property at 47 Central Avenue into a 94-room TownePlace Suites by Marriott hotel. The site has dual frontage along Central Avenue and the Spaulding Turnpike (Route 16), which functions as a limited-access highway within the interchange area. Due to the parcel's irregular geometry, proximity to the interchange ramps, and the need to maintain safe circulation and parking for hotel guests, the project cannot fully meet the secondary frontage build-out percentage along the Spaulding Turnpike right-of-way. The proposed building placement maintains the intent of the Gateway District regulations by providing a strong architectural presence along the corridor while responding appropriately to the site's physical constraints. The requested flexibility will not create adverse

	impacts to surrounding properties and is consistent with the Gateway District's purpose of accommodating hospitality uses in locations with strong regional access.	permitstatefed	NHDES Sewer Connection Permit - Pending local sign off before sending to the NHDES Wastewater Engineering Bureau

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Barry_Stowe_3/6/2026.jpg	03/06/2026 12:59	Stowe, Barry		Uploaded via CSS
Permit Snapshot Report.pdf	03/06/2026 13:00	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000720	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000720	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/10/2026 15:27
Confirm application complete v.1	Generic Action		03/10/2026 15:27
~~Conditional Use Review v.1~~	Receive Submittal		03/10/2026 15:27
Planning Board v.1		03/10/2026 15:28	
Planning Board Agenda v.1	Task	03/10/2026 15:28	03/10/2026 15:28
Invoice for Notices v.1	Task	03/10/2026 15:28	03/10/2026 15:28
Send Notices v.1	Task	03/10/2026 15:28	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: *Lafrance Bowden Hospitality II, LLC* Telephone # *603-527-9090 (agent)*

Address of Applicant: *41 Old Bedford Road, Westport, MA 02790*

E-Mail Address: *barrys@opechee.com (agent)*

Name of Property Owner (if different from applicant): *Arc Cafeusa001 Llc* Telephone # *603-527-9090 (agent)*

Address of Property Owner: *11995 El Camino Real, San Diego, CA 92130*

PROPERTY INFORMATION

Assessor's Map # *17* Lot(s) # *76*

Address of Property: *47 Central Avenue*

Zoning District(s) *Gateway District (G)* Overlay District(s) *N/A*

Existing Use of Property: *Abandon Burger King Fast Food Restaurant*

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☑ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Spaulding Turnpike (Route 16) secondary frontage percentage build-out

See attached CUP narrative

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Connection Permit (pending)

NHDES Sewer Connection Permit (pending)

Name of Professional That Prepared Plans: Brian Jones, P.E., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 13,809 E-mail address: bjones@allenmajor.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 1-28-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ (Agent) Date: 1-28-2026

OPECHEE
CONSTRUCTION CORPORATION

Conditional Use Permit Narrative
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

The applicant is proposing to redevelop the existing Burger King property at 47 Central Avenue into a 94-room TownePlace Suites by Marriott hotel within the City of Dover's Gateway District. The 1.77± acre site is uniquely configured with frontage along both Central Avenue and the Spaulding Turnpike (Route 16), with Central Avenue functioning as the primary frontage and the Spaulding Turnpike serving as a secondary frontage.

As illustrated on the provided civil plans, the parcel is irregularly shaped and constrained by its curvature along the Spaulding Turnpike right-of-way, existing interchange geometry, and the need to accommodate safe vehicular access and internal circulation. These physical characteristics significantly influence building placement and limit the extent to which a continuous building façade can be located directly along the Central Avenue frontage and the Spaulding Turnpike.

The subject site is located outside of Dover's traditional downtown core and functions as part of a gateway corridor serving both local and regional traffic, with immediate proximity to the Spaulding Turnpike interchange. The site design reflects a development pattern appropriate for a hotel use serving regional and interstate travelers rather than a fine-grained downtown street environment.

Two Conditional Use Permits are requested to allow flexibility with **(1) the Central Avenue Primary Frontage build-to line and associated percentage of frontage build-out, and (2) the Spaulding Turnpike Secondary Frontage percentage of frontage build-out**. The proposed building placement responds to the site's constrained geometry by balancing frontage visibility, guest access, and parking demands while maintaining an appropriate setback from the Spaulding Turnpike right-of-way.

While the proposed building does not fully meet the prescriptive build-to line and frontage build-out standards along Central Avenue & Spaulding Turnpike, the layout maintains the intent of the Gateway District regulations by establishing a strong architectural presence along the corridor and reinforcing the role of Central Avenue as a gateway into the City.

The requested flexibility is directly attributable to the site's irregular geometry, dual-frontage condition, and proximity to a limited-access highway, rather than a departure from the goals of the zoning ordinance. The proposed development will not result in adverse impacts to surrounding properties and is consistent with the Gateway District's purpose of accommodating hospitality uses in locations well suited for regional access without placing additional pressure on the downtown core.

Accordingly, the proposed Conditional Use Permit represents a reasonable and appropriate application of zoning flexibility in response to documented site constraints and satisfies the intent of the Gateway District frontage standards.

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PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2026-0018

Application Type:	Conditional Use Permit
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow relief from the Gateway District streetscape standards to construct a 94- room hotel.

AGENDA ITEM #: 4-J

FILE: COND-2026-0018

APPLICANT: Lafrance Bowden Hospitality II, LLC

OWNER: ARC CAFEUSA001, LLC

LOCATION: 47 Central Ave. (Assessor's Map 17, Lot 76)

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 rooms

ACREAGE: 1.77 ± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

WAIVERS REQUESTED: None.

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: NHDES Sewer Connection Permit and four City of Dover CUPs are required for relief related to the streetscape standards, frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Site Plan reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

ATTACHMENTS: CUP application materials.

Summary of Request and Background

The applicant is proposing a four-story, 94-room extended stay hotel with 97 parking spaces at 47 Central Ave. (Assessor's Map 17, Lot 76).

In the Gateway Zoning District, required streetscape standards include sidewalks, street trees, and street furniture, such as benches, waste bins, and bike racks. The applicant is seeking relief from these streetscape requirements. The primary frontage for the subject parcel is the accessway to the site, totaling approximately 47.5 feet with around 41 feet of that area associated with access lanes. The area is not conducive to the inclusion of specific requirements such as a tree every 25-30 feet along the street.

The applicant has applied for three other CUPs in relation to this proposal, seeking relief from the primary frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

The Technical Review Committee reviewed the Site Plan application at their February 19, 2026 meeting.

Within the Gateway District, conditional use approval may be granted by the Planning Board to adjust certain zoning standards, including dimensional regulations, provided that the proposed project complies with the criteria in §170-20B(2), as outlined below.

Consistency with Land Use Regulations- Non-Environmental

Chapter 170-19.B.2 outlines the criteria for granting a Conditional Use Permit for relief. Staff feels this proposal meets those criteria which include:

(a) That both public and private buildings and landscaping shall contribute to the physical definition of rights-of-way as civic spaces.

(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.

(c) That the design of streets and buildings shall reinforce safe environments, but not at the expense of accessibility.

(d) That architecture and landscape design shall grow from local climate, topography, history, and building practice.

(e) That buildings shall provide their inhabitants with a clear sense of geography and climate through energy-efficient methods via a mixture of elements including windows, floor plan, and public and private space.

(f) That encourage civic buildings and other public gathering places be provided as locations that reinforce community identity and activity.

(g) That civic buildings shall be distinctive and appropriate to a role more important than the other buildings that constitute the fabric of the City.

See reverse →

(h) That the preservation and renewal of historic buildings shall be facilitated.

(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed building and/or use.

(j) That if the relief is granted, the surrounding neighborhood is not negatively impacted.

Planning Staff feels that the applicant has adequately shown compliance with the criteria as specified in §170-19.B.2. The existing streetscape is primarily paved for the accessway and is proposed to remain. While the area does not allow for the inclusion of all of the streetscape standards, the applicant has proposed pedestrian improvements to the site and public infrastructure that access the site. The proposed plan also includes onsite bike racks and landscaping.

Consistency with Land Use Regulations – Gateway CUP Criteria

Chapter 170-20.B(2) outlines the criteria for granting a Conditional Use Permit for relief within the Gateway Zoning District. Staff feels this proposal meets those criteria which include:

(a) The requested use shall be compatible with abutting uses and the surrounding neighborhood.

(b) The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

(c) The requested use will not result in objectionable noise or odor which would constitute a nuisance.

Staff feels that this proposal complies with the Gateway CUP criteria. Within the primary frontage area along Central Avenue, the applicant is proposing pedestrian improvements to ensure the crosswalks are safe and accessible. Also of note, many of the abutting uses are commercial, and given the proximity to the Spaulding Turnpike, these streetscape standards are not currently present in the immediate area.

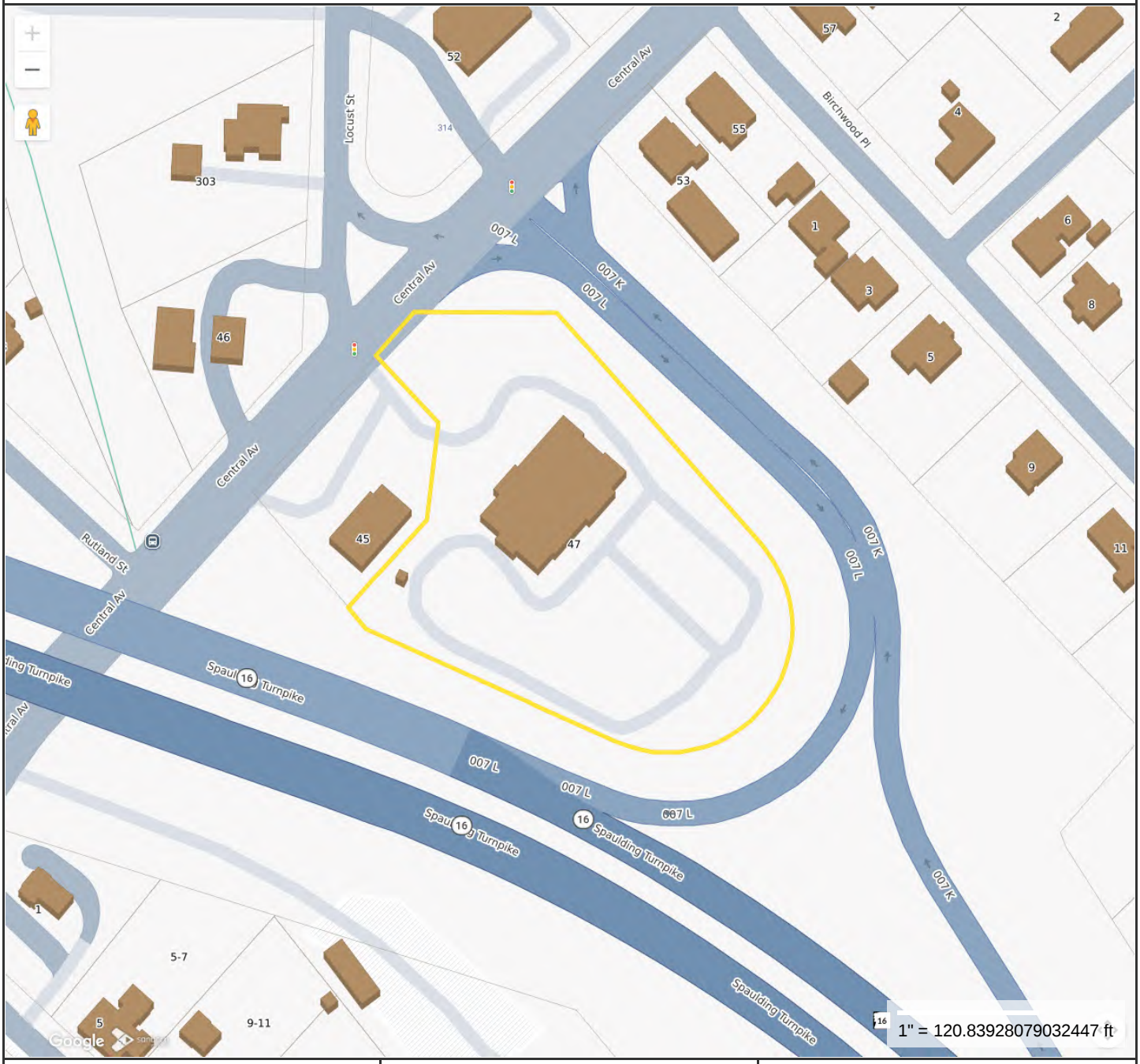
Staff Recommendation:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions of approval:

Subsequent Conditions to Be Met Prior to the Issuance of Conditional Use Permit:

1. Approval of Site Plan (SITE-2026-0001);
2. Approval of Conditional Use Permits (COND-2026-0015, COND-2026-0016, and COND-2026-0017);
3. Work with the Planning Department to endorse a development agreement per Chapter 170-20B(3) and then record at SCRD.

COND-2026-0018 47 CENTRAL AVENUE



Property Information

Location	47 CENTRAL AV
Owner	ARC CAFEUSA001 LLC
Land Use	326C
Zoning Code	G
Property Id	17076-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2026-0018
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	03/06/2026
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Conditional Use Permit request for flexibility from the Gateway District Streetscape standards for the proposed TownePlace Suites hotel at 47 Central Avenue.

Parcel: 17076-000000 Main	**Address:** 47 Central Av Main Dover, NH	**Zone:** G(Gateway District)

Architect	Plan Preparer	Applicant	Owner
David Sherborne Business: (603) 527-9090	Brian Jones Business: (603) 527-5500	Barry Stowe 11 Corporate Drive Belmont, NH 03220 Business: (603) 527-9090	Timothy Burkhardt Business: (508) 676-7888

Engineer	Wetlands Scientist
Jeffrey Dirk Business: (978) 269-6830	Cynthia Balcius Business: (603) 527-9090

Permit Custom Fields

Select Permit Type	Gateway District
What is the parcel zoned?	G

General Purpose	New Construction
New Change in Impervious/Paved Area (sq ft)	-533

Project Zone	Mixed Use
Work	Proposed TownePlace Suites by Marriott – 47 Central Avenue, Dover, NH. The applicant proposes redevelopment of the former Burger King property into a 94-room hotel within the Gateway District. The project frontage along Central Avenue is largely comprised of a paved signalized intersection with no existing streetscape features such as planting strips, street trees, or street furniture within the public right-of-way adjacent to the site. The secondary frontage is along the Spaulding Turnpike right-of-way, which functions as a NHDOT limited-access highway where pedestrian and bicycle access is prohibited. Due to these existing conditions, the prescribed Gateway streetscape elements cannot be meaningfully implemented within the adjacent public way. The site design instead focuses on pedestrian connectivity

	within the property, including a direct ADA-compliant walkway connection from the building entrance to the public sidewalk along Central Avenue. The requested flexibility reflects the unique frontage conditions of the site and will not result in adverse impacts to surrounding properties.	permitstatefed	NHDES Sewer Connection Permit - Pending local sign off before sending to the NHDES Wastewater Engineering Bureau

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Barry_Stowe_3/6/2026.jpg	03/06/2026 13:11	Stowe, Barry		Uploaded via CSS
Permit Snapshot Report.pdf	03/06/2026 13:12	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000721	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000721	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			03/10/2026 15:32
Confirm application complete v.1	Generic Action		03/10/2026 15:32
~~Conditional Use Review v.1~~	Receive Submittal		03/10/2026 15:32
Planning Board v.1		03/10/2026 15:32	
Planning Board Agenda v.1	Task	03/10/2026 15:32	03/10/2026 15:33
Invoice for Notices v.1	Task	03/10/2026 15:32	03/10/2026 15:33
Send Notices v.1	Task	03/10/2026 15:33	
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: *Lafrance Bowden Hospitality II, LLC* Telephone # *603-527-9090 (agent)*

Address of Applicant: *41 Old Bedford Road, Westport, MA 02790*

E-Mail Address: *barrys@opechee.com (agent)*

Name of Property Owner (if different from applicant): *Arc Cafeusa001 Llc* Telephone # *603-527-9090 (agent)*

Address of Property Owner: *11995 El Camino Real, San Diego, CA 92130*

PROPERTY INFORMATION

Assessor's Map # *17* Lot(s) # *76*

Address of Property: *47 Central Avenue*

Zoning District(s) *Gateway District (G)* Overlay District(s) *N/A*

Existing Use of Property: *Abandon Burger King Fast Food Restaurant*

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☑ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☐ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Streetscape Standards - Section 170-20E

See attached CUP narrative

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Connection Permit (pending)

Name of Professional That Prepared Plans: Brian Jones, P.E., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 13,809 E-mail address: bjones@allenmajor.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 1-28-2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ (Agent) Date: 1-28-2026

OPECHEE
CONSTRUCTION CORPORATION

Conditional Use Permit Narrative
Streetscape Standards, Chapter 170-20E – Gateway District
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

The applicant proposes a **94-room TownePlace Suites by Marriott** hotel at **47 Central Avenue** within the City of Dover's **Gateway District**. A Conditional Use Permit is being requested for the **Streetscape** standards, as required by **Chapter 170-20E** of the **Zoning Ordinance**. This narrative addresses the existing condition of the subject parcel's frontage and that streetscape elements are not present relative to the general principles and intent of the Gateway District.

The project represents the redevelopment of a previously developed and abandoned commercial site, formerly occupied by a fast-food restaurant. The replacement of an underutilized property with a professionally managed lodging use supports reinvestment along a designated gateway corridor and aligns with the district's purpose of accommodating commercial and service-oriented uses that benefit from regional access.

The Gateway District streetscape standards are intended to ensure that street elements within the public right-of-way maintain a relationship with adjacent buildings, accommodate pedestrians and bicyclists, and are compatible with the character of Dover's neighborhoods. As written, these streetscape standards apply specifically to street elements occurring within the public way along a project's street frontage.

The project's primary frontage along Central Avenue is entirely comprised of a paved traffic intersection with no existing streetscape features such as sidewalks, planting strips, street trees, or street furniture within the public right-of-way adjacent to the site. Accordingly, there are no existing streetscape elements to modify and/or improve; nor is there an opportunity to propose new streetscape elements along the project's frontage.

The secondary frontage consists of the Spaulding Turnpike right-of-way, which is a NHDOT-controlled limited-access highway where pedestrian and bicycle access is prohibited by law. As such, the streetscape standards related to pedestrian and bicycle accommodation are not applicable to this frontage.

Given the existing conditions and the nature of both frontages, the Gateway District streetscape standards do not impose additional improvements within the public right-of-way for this project. The site design instead focuses on pedestrian connectivity to the street and landscape improvements within the property boundary.

11 CORPORATE DRIVE ▪ BELMONT ▪ NH 03220
PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2026-0001

Application Type:	Site Review
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Meeting Date:	March 24, 2026

INTENT: Proposal is to construct a four-story, 50,120± s.f., 94-room hotel with associated patios, landscaping, parking, and utilities. *(Four related City of Dover Conditional Use Permits (CUPs) applications are being considered as part of this proposal.)*

AGENDA ITEM #: 4-K

FILE: SITE-2026-0001

APPLICANT: Lafrance Bowden Hospitality II, LLC

OWNER: ARC CAFEUSA001, LLC

LOCATION: 47 Central Ave. (Assessor's Map 17, Lot 76)

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 rooms

ACREAGE: 1.77 ± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

WAIVERS REQUESTED: None.

ZBA ACTION: N/A for proposal.

PERMITS REQUIRED: NHDES Sewer Connection Permit and four City of Dover CUPs are required for relief related to the streetscape standards, frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

CONSERVATION COMMISSION: N/A, no environmental impacts proposed.

TECHNICAL REVIEW COMMITTEE: Reviewed on February 19, 2026.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

ATTACHMENTS: Application materials including site plan.

Summary of Request and Background

The applicant is proposing a four-story, 94-room extended stay hotel with 97 parking spaces at 47 Central Ave. (Assessor's Map 17, Lot 76).

Along with landscaping, the applicant is proposing a patio area for customers and pedestrian access leading to Central Avenue and the nearby trailhead to the Community Trail.

The applicant has applied for four CUPs in relation to this proposal, seeking relief from the streetscape standards, frontage build-to requirements, primary and secondary frontage build-out requirements, and to allow a hotel use (or a lodging use exceeding 12 rooms). The requested dimensional relief primarily stems from the unique shape of the lot and the lack of reusable frontage, which totals approximately 47.5 feet and is associated with access lanes.

The site previously contained a fast-food restaurant but has fallen into disrepair and has been vacant since 2021. Of note, the proposed hotel use is projected to generate significantly less traffic than a fast-food restaurant, with approximately 90% fewer trips during typical weekdays and weekends.

The Technical Review Committee reviewed the application at their February 19, 2026 meeting. Part of the TRC discussion and review focused on emergency access, surrounding municipal infrastructure including the crosswalk in the vicinity, floor plan layout, and the traffic impact statement. *(minutes attached)*

Consistency with Land Use Regulations – Site Plan

§153-13 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board makes the necessary and supporting findings of fact, and vote to approve the site plan with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   1.1. Permit File #SITE-2026-0001;
   1.2. Owner's signatures;
   1.3. Professional stamps and signatures;
2. Approval of Conditional Use Permits (COND-2026-0015, COND-2026-0016, COND-2026-0017, and COND-2026-0018);
3. Provide copy of approved NHDES Sewer Connection Permit;

Subsequent Condition to Be Met Prior to Construction:

4. A preconstruction meeting must be held with City staff;

See reverse →

5. A hydrant flow test must be conducted in coordination with the Community Services Department, and the domestic water service design will be determined following the results of the hydrant flow test, subject to review of the Engineering Department;
6. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;

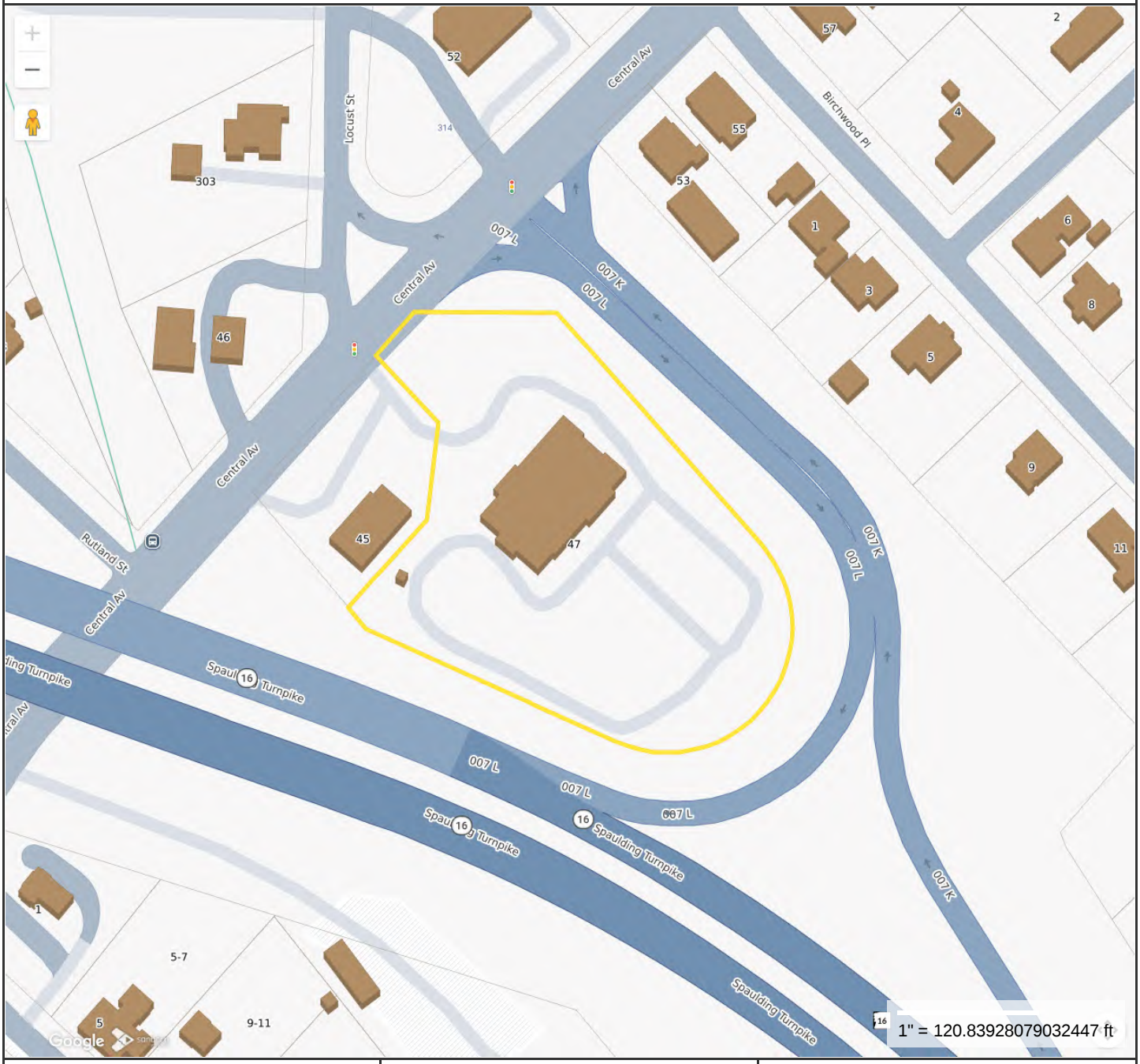
Subsequent Condition to Be Met Prior to Building Permit:

7. Submit updated roof plan showing solar array for review;
8. Submit proposed generator size for review and approval by Inspections Services;
9. Payment of Water and Sewer Investment Fees, if applicable, at time of request of service;

Subsequent Conditions to Be Met Prior to Occupancy:

10. Issuance of Certificate of Occupancy;
11. Surety or other form of security acceptable to the City is provided for any unfinished work;
12. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

SITE-2026-0001 SITE-2026-0001



Property Information

Location	47 CENTRAL AV
Owner	ARC CAFEUSA001 LLC
Land Use	326C
Zoning Code	G
Property Id	17076-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PLAN SNAPSHOT REPORT SITE-2026-0001
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	01/30/2026
Work Class:	New Construction	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Project consists of the design and construction of approximately 50,120 square-foot, 94-unit extend stay hotel with associated patios, landscaping, parking and utilities. The hotel will be limited service, but offer some amenities, such as: lobby/community area, buffet breakfast, fitness, small convenience store, guest laundry, and outdoor patio with cooking grills & fireplace. There will be a total of 97 parking spaces that includes 2 EV charging stations and accessible spaces, all in compliance with franchise standards (note: 1 space per room is required by Marriott).

Parcel:	17076-000000 Main	**Address:**	47 Central Av Dover, NH Main	**Zone:**	G(Gateway District)

Engineer
Brian Jones
Business: (603) 527-5500

Engineer
Jeffrey Dirk
Business: (978) 269-6830

Applicant
Barry Stowe
11 Corporate Drive
Belmont, NH 03220
Business: (603) 527-9090

Wetlands Scientist
Cynthia Balcius
Business: (603) 527-9090

Developer
Timothy Burkhardt
Business: (508) 676-7888

Architect
David Sherborne
Business: (603) 527-9090

Plan Custom Fields

Total2	50120	Total3	0	Total	0
Total5	0	Total4	94	Total6	0
Total7	0	Total9	50120	Total8	50120
Street Classification Type	Municipal	Recording Number	Doc# 0012211	Net Change in # Parking Spaces (+/-)	18
Water Service	Municipal	Sewer Service	Municipal	Deed Book	4148
Total Acres (GIS)	1.77	Deed Page	0409	Total SQFT	77101.2
Deed Date	July 18, 2013	Proposed Property Use	Hotel	Area of Parcel to be Developed (SQFT)	77900
Number of Parking Spaces Existing	79	Number of Parking Spaces Proposed	97	Number of Employees Total	20
Number of Employees in Max Shift	13	Distance to City Water	315	Distance to City Sewer	170
Type of Building to be Built	Hotel made of Type 2B Non-combustible construction type consisting of structural steel building frame, steel bar joists with concrete floors and light gage metal wall framing.	Estimated Construction Value	15000000.00	Refuse Removal	Private
Is there an existing Conservation Easement?	No	Existing Conservation Easement Details		Total of Impact Fees to be Assessed	0.00
TotalImpactFeeSDTOD	0.00	Sub Total Residential	0.00	TotalImpactFeeTHTOD	0.00
TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00
TotalImpactFeeADUTOD	0.00	TotalImpactFeeAONRTOD	0.00	TotalImpactFeeAR55TOD	0.00
TotalImpactFeeAR62TOD	0.00	TotalImpactFeeRIRCTOD	0.00	Sub Total Non-Residential	0.00
TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00

PLAN SNAPSHOT REPORT (SITE-2026-0001)

TotalImpactFeeOIUTOD	0.00
TotalImpactFeeAFAOTOD	0.00

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Barry_Stowe_1/30/2026.jpg	01/30/2026 9:35	Stowe, Barry		Uploaded via CSS
2026.02.19_PlanningTechnicalReviewCommittee.Agenda.pdf	02/02/2026 14:08	Blonigen, Rachel		TRC Agenda

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2026000274	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2026000274	$200.00	$0.00
INV-2026000544	Planning Non-Res/Mixed Use – New Construction	$7,518.00	$7,518.00
	Planning Non-Residential - Lodging	$3,290.00	$3,290.00
	Total for Invoice INV-2026000544	$10,808.00	$10,808.00
	Grand Total for Plan	**$11,008.00**	**$10,808.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	02/19/2026	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	02/02/2026	02/18/2026		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Approved	02/02/2026	03/02/2026	02/18/2026

Comments:
- The use appears consistent with and appropriate to the highway-oriented nature of this site.
- Please let us know how Business Development can support the operators/management as this project moves forward.
- Once open the hotel can claim a free business listing on Dover's destination marketing site Discoverdovernh.com

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Gibbons, Matthew	In Review	02/02/2026	02/18/2026	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	In Review	02/02/2026	03/02/2026	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	In Review	02/02/2026	02/18/2026	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	Requires Re-submit	02/02/2026	02/18/2026	02/16/2026

Comments: 1) IBC requires 4 accessible parking spaces when 76-100 parking spaces in a lot. Provide accessible signage and detail for EV accessible charging location
2)Clarify access aisle min 8' aisle width for EV station.
3) IS generator indented to be a life safety generator
4) Indicate location of FDC on the front side of the proposed structure
5) Indicate generator size, fuel type and capacity of fuel storage if applicable
6)Identify the exits, and provide interior floor plan.
7) Accessible signage language to coincide with accessibility requirements (references to Handicap to be revised)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic	Police	Mitrushi, Alex	In Review	02/02/2026	02/18/2026	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		01/30/2026 14:55	
Confirm application complete v.1	Generic Action		01/30/2026 14:55

PLAN SNAPSHOT REPORT (SITE-2026-0001)

Technical Review Committee Meeting Agenda v.1	Task	01/30/2026 14:55	02/02/2026 14:09
Land Use Plan Technical Review v.1	Receive Submittal	02/02/2026 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	02/02/2026 14:10	
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Stamped and Signed v.1	Generic Action		
Recording v.1	Task		
Document Archival v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Lafrance Bowden Hospitality II, LLC Telephone # 603-527-9090 (agent)

Address of Applicant: 41 Old Bedford Road, Westport, MA 02790

E-Mail Address: barrys@opechee.com (agent)

Name of Property Owner (*if different from applicant*): Arc Cafeusa001 Llc Telephone # 603-527-9090 (agent)

Address of Property Owner: 11995 El Camino Real, San Diego, CA 92130

PROPERTY INFORMATION

Address of Property: 47 Central Avenue

Assessor's Map # 17 Lot(s) # 76

Zoning District(s) Gateway District (G) Overlay District(s) _____

Size of Parcel: 77,053 sq. ft. 1.77 ac. Property Deed: Book 4148 Page: 409

Existing Use of Property: Abandon Burger King Fast Food Restaurant

SITE PLAN INFORMATION

Describe Proposed Use: Extended-Stay Hotel

Area of Parcel to be Developed: 76,995 sq. ft.

If Multi-family Residential: Number of Units _____ & Buildings Proposed _____

If lodging: Number of Units 94 & number of Buildings 1

Number of Parking Spaces: Existing 76 Proposed 97

Highway Access (check where applicable): ✓ City Street ____ State Highway (NHDOT Urban Compact Zone)

Number of Employees Total: ± 20 In Maximum Shift: ± 13

Disposition of Parcel:

Building Footprint 12,620 sq. ft.

Total Building Area 50,120 sq. ft.

Paved Area 37,500 sq. ft.

Building Setbacks:

Front Yard 153.8' (primary) 16.7' (secondary) ft.

Rear Yard N/A ft.

Side Yard: 29.3' ft.

City Water? ✓ Yes ___ No How far is city water from the property? *315 LF of water line*

City Sewer? ✓ Yes ___ No How far is city sewer from the property? *170 LF of sewer line*

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

□ Residential □ Residential (reduced size) □ Industrial | □ Purchase □ Land Preservation

Relief sought (Check All That Apply):

□ Lot Size □ Frontage □ Setback □ 30' Buffer □ Increase by _____ units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: *A hotel consisting of Type 2B Non-combustible construction consisting of structural steel frame, steel bar joists, concrete floors and light gage metal wall framing.*

Height of Building: *4-story 53'-3" top of parapet)* Finished Floor Elevation: *105.5 '*

Number of Seats (where applicable) *N/A*

Estimated value of construction: *$15mm* Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

Justification for waiver request(s) (*attach additional sheets as needed*):

_____

_____

_____

_____

_____

_____

_____

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) James P. Smith, Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 908 E-mail address: jsmith@allenmajor.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Brian Jones, P.E., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 13,809 E-mail address: bjones@allenmajor.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) David Sherborne, Architect, Opechee Construction Corporation.

Address 11 Corporate Drive, Belmont, NH 03220 Telephone #: 603-527-9090

Professional License #: 4,114 E-mail address: davids@opechee.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Bethany Dermody, L.A., Allen & Major Associates, Inc.

Address 400 Harvey Road, Suite D, Manchester, NH 03103 Telephone #: 603-627-5500

Professional License #: 06 E-mail address: bdermody@allenmajor.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Stoney Ridge Environmental, LLC

Address 8 Kiana Road, Alton, NH 03809 Telephone #: 603-776-5825

Professional License #: 06 E-mail address: cbalcius@stoneyridgeenv.com

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Abutters List

TownePlace Suites by Marriott
47 Central Avenue, Dover, NH 0303820
January 28, 2026

Owner:

Tax Map 17 Lot 76
Arc Cafeusa001
11995 El Camino Real
San Diego, CA 92130

Applicant:

Lafrance Bowden Hospitality II, LLC
c/o: Tim Burkhardt, CHA
41 Old Bedford Road
Westport, MA 02790

Design-Build Firm/Architect/Agent:

Opechee Construction Corporation
c/o: Barry Stowe & David Sherborne, Architect
11 Corporate Drive
Belmont, NH 03220

Civil Engineer/Surveyor/Landscape Architect:

Allen & Major Associates, LLC
c/o: Brian Jones, P.E/James Smith, L.S./ Bethany Dermondy, L.A
400 Harvey Road, Suite D
Manchester, NH 03103

Transportation Engineer:

Vanasse & Associates, Inc.
c/o: Jeffrey Dirk, P.E.
35 New England Business Center Drive,
Suite 140
Andover, MA 01810-1066

Wetland Scientist:

Stoney Ridge Environmental, LLC
c/o: Cynthia Balcius, CSS, CWS
8 Kiana Road
Alton, NH 03809

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (*if different from owner*): _____ Date: _____

Signature of Agent: Barry Stowe Date: Jan. 28, 2026

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Barry Stowe (Agent) Date: Jan. 28, 2026

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Barry Stowe (Agent) Date: Jan. 28, 2026

Signature of Applicant (*if different from owner*): _____ Date: _____

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: _____ Date: _____

Signature of Applicant (*if different from owner*): Barry Stowe (Agent) Date: Jan. 28, 2026

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan review fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☐ CONDITIONAL USE PERMIT Application fee $200.00 x # _____ per Application = $_____
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $_____

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $10.00= $_____
- ☐ Certified letters fee: # of abutters _____ X $10.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

The amount due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This site plan review checklist, as required by Chapter 153-6-B(2), should be completed by the applicant. It is intended to assist the applicant in the planning process of preparing a Site Plan Review application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

The first step would be to appear before the Technical Review Committee, to apply, eight (8) folded copies of the site plan with scale of not less than 1"=50' or 1" =100' for larger site plans, need to be provided, along with payment of plan review fees.

Two weeks prior to Planning Board, three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, including response to TRC comments, will be due. Abutter/Notice Fees will be invoiced and need to be paid 28 hours prior to the Planning Board meeting.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan Review Regulations for full details.

APPLICANT: Lafrance Bowden Hospitality II, LLC File Number: _____

PROJECT TITLE: Proposed Hotel

PROPERTY LOCATION: 47 Central Avenue Tax Map: 17 Lot: 76

	Where/How Provided	Reviewed
1. Completed and signed Application form	Yes	
2. Plan Review Fees are provided	Pending invoice from city	
3. Electronic copy of the engineered/surveyed plan layout	Yes	
4. Electronic copy of supplementary materials and application	Yes	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Yes	
6. Waiver requests to the Site Plan Review Regulations, with written justification	N/A	
7. Conditional Use Permit applications	Yes	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	A3.03	
9. A colored architectural plan showing all sides of buildings	A3.01 & A3.02	
10. Folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	Yes	
Location map at appropriate scale	Cover Sheet	
Proposed Project name and title and Planning File #	Yes and file # pending	
Date, north arrow and scale	Yes	
Names of all abutting property owners	C106	
Name and address of owners and/or applicants	Yes	
Signature & stamp of NH licensed land surveyor and/or engineer	Yes	
Zoning District boundaries, including any special or overlay districts	C106	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	V101	
Location and widths of existing & proposed easements & right of ways	V101	
Location and width of existing and proposed access/egress ways	V101 (existing) C102 (proposed)	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	*C102*	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	*V101*	
Existing and proposed topographic information at two foot intervals	*V101 (existing) C102 (proposed)*	
Existing and proposed buildings and structure locations	*V101 (existing) C102 (proposed)*	
Minimum building setbacks or build to lines on all lots	*C102*	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	*C104*	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	*C104*	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	*C104*	
Existing and proposed stormwater lines and facilities	*C103*	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	*C105*	
Location of Flood Hazard Zone	*N/A*	
Location of all bodies of water and watercourses	*N/A, see letter from CWS*	
Location of wetlands and buffers	*N/A, see letter from CWS*	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	*C106*	
Existing natural features and/or significant vegetation on property	*V101*	
Depict existing contours up to 100 ft. beyond project limits	*V101*	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	*V101*	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	*C102*	
Location, material and size of existing and proposed pavement area	*V101 (existing) C102 (proposed)*	
Location of proposed fire lanes	*C102 (travel lanes)*	
Specify finished floor elevations of buildings	*C103*	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	*C102*	
Depict all service, storage, loading bays and utility areas	*N/A*	
All applicable Dover Common Site Plan notes	*Yes*	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	*Drainage report provided*	
Stormwater Management System Operation and Maintenance Plan	*Drainage report provided*	
Letter to Serve from Public and Private Utilities	*sewer/water/gas (elec pending)*	
Erosion and Sedimentation Control Plan	*C101*	
Landscape Operation and Maintenance Plan	*C502*	
Proposed restrictive covenants or homeowners association documents	*N/A*	
Dates and permit numbers of all required state and federal permits	*Pending*	
If wetland buffer, indicate placards locations, as applicable	*N/A, see letter from CWS*	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	*C103*	
Location of proposed drive-in facilities	*C102*	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	*Traffic report*	

REVIEWED BY: _____ DATE_____ TRC DATE_____

OPECHEE
CONSTRUCTION CORPORATION

Site Plan Review Narrative
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

The applicant proposes the redevelopment of a previously developed property located at **47 Central Avenue** in the City of Dover. The site was formerly occupied by a Burger King restaurant that has since been abandoned and currently contains existing impervious surfaces and site improvements. The proposed project consists of the construction of a **94-room TownePlace Suites by Marriott** hotel within the City's **Gateway District**, representing reinvestment in an underutilized parcel along a major gateway corridor.

The subject parcel is approximately **1.77± acres** in size and is uniquely configured with **dual frontage along Central Avenue and the Spaulding Turnpike (Route 16)**. Central Avenue functions as the primary frontage, while the Spaulding Turnpike serves as a secondary frontage with limited-access characteristics. The site's irregular geometry, curved roadway frontage along Route 16, and proximity to the Spaulding Turnpike interchange significantly influence building placement, access, and circulation. Unlike properties located within Dover's downtown core, this portion of Central Avenue is characterized by regional traffic patterns and gateway-scale development.

The proposed site layout has been designed to respond directly to these physical constraints while maintaining a strong and visible architectural presence along Central Avenue. Building placement prioritizes frontage visibility, safe vehicular access, and efficient internal circulation while maintaining appropriate separation from the Spaulding Turnpike right-of-way. Parking areas are arranged to support hotel operations while minimizing their visual prominence from the public way, reinforcing the intent of the Gateway District to balance corridor visibility with orderly site design.

The development includes requests for **three Conditional Use Permits**, including approvals related to the Central Avenue primary frontage build-to standards, the Spaulding Turnpike secondary frontage build-out standards, and the proposed hotel use within the Gateway District. These requests are addressed separately and are not the subject of this Site Plan Review narrative, which focuses on the physical layout, circulation, and infrastructure of the site.

Vehicular access to the site is provided from Central Avenue, with internal circulation designed to accommodate guest arrival, parking, and service movements in a clear and intuitive manner. Parking is provided on site in a configuration consistent with the operational needs of a **limited-service, extended-stay hotel** and aligns with industry-recognized standards for the TownePlace Suites brand, which generally anticipate approximately one parking space per guestroom. The parking layout provides spaces proximate to building entrances while maintaining safe circulation and minimizing conflicts between vehicles and pedestrians.

Pedestrian connectivity is an integral component of the site design. An **ADA-compliant pedestrian walkway** is provided to establish a direct and accessible connection between the primary building entrance and the **public**

sidewalk along Central Avenue. Internal pedestrian routes also connect parking areas to the building entrance, providing safe and clearly defined circulation throughout the site consistent with Gateway District objectives.

The proposed hotel is a **limited-service, extended-stay lodging use** intended to accommodate guests staying for longer durations, including business travelers, and families. The hotel program is intentionally limited in scope and does not include restaurants, bars, drive-through facilities, or meeting and conference spaces. Food and beverage service is limited to continental breakfast offerings and small grab-and-go items. In addition to indoor amenities, the project includes an **outdoor guest patio area with a fireplace and grilling facilities**, intended as amenity-scale features for registered guests only. The patio is not designed or programmed for public access, events, or amplified activities.

Architecturally, the building is designed as a **four-story structure** consistent with established TownePlace Suites design standards and adapted to the Gateway District context. Exterior materials include a combination of **fiber-cement panel siding and exterior insulation finish systems (EIFS)**, providing visual variation, articulation, and long-term durability. Façade modulation, material transitions, and window placement are used to reduce perceived building mass and establish an appropriate scale along Central Avenue, while maintaining a cohesive architectural form visible from both road frontages. Windows consist of thermally broken aluminum frames with insulated glazing, and the roof utilizes a low-slope membrane system with internal drainage to maintain a clean roofline profile.

The project qualifies as a **redevelopment** under the City's Site Plan Review Regulations, with existing impervious surface coverage exceeding forty percent (40%). Stormwater management for the site has been designed in accordance with the City's redevelopment standards and incorporates **on-site mitigation and treatment measures**, resulting in improved stormwater management relative to the abandoned prior use. Municipal water and sewer services are available to the site, and utilities will be extended and coordinated as part of the redevelopment.

Overall, the proposed project represents a thoughtful reinvestment in a previously developed and abandoned site and is consistent with the intent of the Gateway District. The site layout, circulation, parking, pedestrian access, stormwater management, and architectural design have been carefully coordinated to respond to documented site constraints while avoiding adverse impacts to adjacent properties or the public realm. The application satisfies the objectives of the City's Site Plan Review regulations and is appropriate for Planning Board approval.

Doc # 0012211 Jul 18, 2013 1:56 PM
Book 4148 Page 0409 Page 1 of 4
Register of Deeds, Strafford County

C/H
L-CHIP
STA068186

Return to:
First American Title Ins Co.
Attn: Jay Melkonian
101 Huntington Ave., 13th Floor
Boston, MA 02199

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
***36 Thousand 6 Hundred 35 Dollars
DATE 07/18/2013 ST827372 AMOUNT $ ***36635.00
VOID IF ALTERED

WARRANTY DEED

GRANTOR: RAI RESTAURANTS, INC.

GRANTE: ARC CAFEUSA001, LLC

PROPERTY: 47 Central Avenue, Dover, NH

QUITCLAIM DEED (WITH COVENANTS)

KNOW ALL MEN BY THESE PRESENTS:

RAI RESTAURANTS, INC., a Florida corporation ("***Grantor***"), for consideration paid, grants to **ARC CAFEUSA001, LLC**, a Delaware limited liability company ("***Grantee***"), whose address is 106 York Road, Jenkintown, Pennsylvania 19046, with quitclaim covenants, a certain parcel of land with the buildings thereon situated in Strafford County, New Hampshire, more fully described on ***Exhibit A*** to this Deed (the "***Property***").

The Property is conveyed subject to current taxes and assessments, reservations in patents, all easements, rights-of-way, encumbrances, liens, covenants, conditions, restrictions, obligations, liabilities and other matters as may appear of record, the rights of parties in possession under unrecorded leases, and all matters which an accurate survey of the Property or a physical inspection of the Property would disclose. The Grantor covenants with the Grantee, its heirs and assigns, that it will warrant and forever defend the Property to said Grantee, its heirs and assigns forever, against the lawful claims and demands of all persons claiming by, through or under it but against none other.

For Grantor's title see Quit Claim Deed from CNL Restaurant Investments III, a Florida general partnership, dated February 25, 2005, and recorded in the Strafford County, New Hampshire Registry of Deeds on March 15, 2005, at Book 3155, Pages 515-518.

Executed as an instrument under seal as of this 27 day of June, 2013.

PLEASE RETURN TO: JAY MELKONIAN
FIRST AMERICAN TITLE INSURANCE COMPANY
101 HUNTINGTON AVENUE, 13TH FLOOR
BOSTON, MA 02199
60592INH04

Asset No. 700
Dover, NH

GRANTOR:

RAI RESTAURANTS, INC., a Florida corporation

By: _____
Printed Name: Todd V. Jones
Its Vice President

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA) June 21, 2013

Then personally appeared the above-named Todd V. Jones, the Vice President of RAI Restaurants, Inc., a Florida corporation, as aforesaid, and acknowledged the foregoing to be the free act and deed of RAI Restaurants, Inc., a Florida corporation, before me.

OFFICIAL SEAL
ANNIE M. CAPARROS
Notary Public - State of Arizona
MARICOPA COUNTY
My Comm. Expires April 16, 2015

Notary Public

My Commission Expires:
4/16/2015

Asset No. 700
Dover, NH

EXHIBIT A
LEGAL DESCRIPTION

That parcel of land situated in Dover, County of Strafford, State of New Hampshire, bounded and described as follows:

Beginning at a point in the southeasterly sideline of Central Avenue at the westerly corner of the parcel herein described, and at land of the State of New Hampshire;

Thence N 40° 59' E by Central Avenue for a distance of 47.45 feet to a New Hampshire Highway Bound at other land of the State of New Hampshire, said land being the southerly boundary of the ramp connection from Central Avenue to the Spaulding Turnpike;

Thence N 87° 17' 52" E for a distance of 114.50 feet to another New Hampshire Highway Bound;

Thence S 47° 40' 28" E for a distance of 237.85 feet by land of the State of New Hampshire to another New Hampshire Highway Bound;

Thence continuing by the arc of a curve to the right having a radius of 101 feet for a distance of 290.37 feet to another New Hampshire Highway Bound in the northerly sideline of Spaulding Turnpike;

Thence N 66° 49' 59" W for a distance of 212.01 feet to another New Hampshire Highway Bound;

Thence N 49° 03' 09" W for a distance of 20.70 feet to a point;

Thence N 40° 59' 00" E by land now or formerly of Jeannine Lord for a distance of 90.00 feet to a point;

Thence N 02° 21' 59" W by a mutual right of way with the said Jeannine Lord for a distance of 72.84 feet to a point;

Thence N 49° 03' 19" W for a distance of 70.00 feet to the southeasterly sideline of Central Avenue, at the point of beginning.

APPLICANT
LETTER OF AUTHORIZATION

City of Dover, c/o City Planning
288 Central Avenue, Dover, NH 03820

New Hampshire Department of Transportation, c/o District 6
271 Main Street, PO Box 740, Durham, NH 03824

New Hampshire Department of Environmental Services
29 Hazen Drive, Concord, NH 03302

Re: Proposed Hotel
Assessors Map 17 Lot 76 (Parcel ID: 17076)
47 Central Avenue, Dover, NH 03820

To Whom It May Concern:

By this letter, I hereby Authorize Opechee Construction Corporation and their design consultants to act as agents for the purposes of preparing, executing, submitting, and representing permit applications to the City of Dover and New Hampshire state agencies for a proposed hotel at the property referenced above.

List of agents, including, but not limited to:

- Andrew Pike, President, Opechee Construction Corporation
- David Sherborne, Architect & Vice President, Opechee Construction Corporation
- Barry Stowe, Civil Design Manager, Opechee Construction Corporation
- Brian Jones, Civil Engineer, Allen & Major Associates, Inc.
- Jeffrey Dirk, Transportation Engineer, Vanasse & Associates, Inc.

ARC CAFEUSA001, LLC, a Delaware limited liability company
By: VEREIT Operating Partnership, L.P., a Delaware limited partnership, its member manager

Daniel Haug
Daniel Haug (Jan 20, 2026 17:12:52 MST)
Signature

January 20, 2026
Date

Daniel Haug, SVP, Associate General Counsel
Print Name

Landowner: Arc Cafeusa001 LLC Address: 11995 El Camino Real, San Diego, CA 92130

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- Brian Jones, Civil Engineer, Allen & Major Associates, Inc.
- Jeffrey Dirk, Transportation Engineer, Vanasse & Associates, Inc.

Timothy Burkhardt, President of Hotels, CHA
Lafrance Hospitality

1/8/26
Date

Applicant:

Lafrance Bowden Hospitality II, LLC
PO Box 248
41 Old Bedford Road,
Westport, MA 02790

January 28th, 2026

Barry Stowe
Civil Design Manager
Opechee Construction Corporation
11 Corporate Dr
Belmont, NH

Natural Gas to Proposed Hotel at 47 Central Ave. in Dover, NH

Hello Barry.

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for Natural Gas service.

Unitil hereby confirms that natural gas is available for the proposed building at 47 Central Ave. in Dover, New Hampshire.

If you have any questions, please contact me at 603-264-2033.

Sincerely,



Josh Wilk
Senior Business Development Rep
Unitil
T 603.227.4628
M 603.264.2033
F 603.294.5264
Email wilkj@unitil.com

Barry Stowe

From: Semprini, Jillian <J.Semprini@dover.nh.gov>
Sent: Friday, January 23, 2026 1:15 PM
To: Barry Stowe
Subject: RE: Proposed Hotel, 47 Central Ave (Existing Burger King)

Good afternoon, Barry,

Water and sewer are available at the subject property. City records indicate the sewer main is 10" VCP and the water main is 8" CI. Please reach out to the Water/Sewer Billing to determine if the previous usage is similar to the proposed usage. You may contact Water/Sewer Billing at dover-utilitybilling@dover.nh.gov or (603) 516-6028.

Also, please note that if you need to submit a NHDES Wastewater Connection Permit, the city's Engineering Department has standardized around using the unit design flows in Env-WQ Table 1008-1 to be consistent with how the investment fees are calculated. This ensures that the city has capacity for the flows that the applicants are paying for. See the Dover Utilities Commission Rules and Regulations for more information: https://www.dover.nh.gov/Assets/government/city-operations/2document/community-services/utilities/2010%20DUC%20Rules%20and%20Regulations.pdf.

Please let me know if you have questions.

Thank you,

Jillian Semprini
City Engineer
City of Dover, NH

From: Barry Stowe <barrys@opechee.com>
Sent: Wednesday, January 21, 2026 4:31 PM
To: Semprini, Jillian <J.Semprini@dover.nh.gov>
Subject: Proposed Hotel, 47 Central Ave (Existing Burger King)

Security Notice: External sender. Use caution with hyperlinks or attachments.

Hello Jillian,

Opechee Construction is pleased to inform you that we will be proposing a new hotel in the City of Dover at the former Burger King site at 47 Central Avenue. We are currently in the civil design phase and plan to submit our planning board applications on January 30th. We would like to request a basic "Ability to Serve" letter from DPW for the sewer & water as required by the planning board site plan review check list. Please let me know next steps to obtain this letter.

Thank you!

APPLICANT
LETTER OF AUTHORIZATION

City of Dover, c/o City Planning
288 Central Avenue, Dover, NH 03820

New Hampshire Department of Transportation, c/o District 6
271 Main Street, PO Box 740, Durham, NH 03824

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ARC CAFEUSA001, LLC, a Delaware limited liability company
By: VEREIT Operating Partnership, L.P., a Delaware limited partnership, its member manager

Daniel Haug
Daniel Haug (Jan 20, 2026 17:12:52 MST)
Signature

January 20, 2026
Date

Daniel Haug, SVP, Associate General Counsel
Print Name

Landowner: Arc Cafeusa001 LLC Address: 11995 El Camino Real, San Diego, CA 92130

SITE-2026-0001 **47 CENTRAL AVENUE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
17069-000000	1 BIRCHWOOD PL	OLIVA STEPHEN V & AMY M TRUSTEES	OLIVA STEPHEN V & AMY M REVOCABLE TRUST	1 BIRCHWOOD PL	DOVER	NH	03820
15018-000000	118 RUTLAND ST	HAZEN BENJAMIN C		1601 29TH ST #1292 PMB 1105	BOULDER	CO	80301
17068-000000	53 CENTRAL AV	HURLEY THOMAS A		53 CENTRAL AVE	DOVER	NH	03820
17071-000000	5 BIRCHWOOD PL	GAGNE SANDRA D TRUSTEE	GAGNE SANDRA D REVOCABLE TRUST	5 BIRCHWOOD PL	DOVER	NH	03820
15020-000000	303 LOCUST ST	HANCOCK TYLER R REAL ESTATE LLC		303 LOCUST ST	DOVER	NH	03820
15019-000000	46 CENTRAL AV	GTY MA/NH LEASING INC	C/O GETTY REALTY CORP	292 MADISON AVE FL 9	NEW YORK	NY	10017-6376
17067-000000	55 CENTRAL AV	GILLIS BENJAMIN T	THURLOW KORIE	55 CENTRAL AVE UNIT #2	DOVER	NH	03820
17074-000000	11 BIRCHWOOD PL	THOMPSON THERESA B		9 BLUEBERRY HILL RD	GROVELAND	MA	01834
15021-022000	271 LOCUST ST	DOUBLE DIAMOND HOLDINGS SOUTH LLC		340 CENTRAL AVE #202	DOVER	NH	03820
15071-000000	52 CENTRAL AV	ARANOSIAN OIL CO INC		557 NO STATE ST	CONCORD	NH	03301
17073-000000	9 BIRCHWOOD PL	BAHALKEH ESMAEIL		67 FEDERAL ST APT 3D	PITTSFIELD	MA	01201-6364
17076-E00001	45 CENTRAL AV	WHITE MOUNTAIN SUBWAYS LLC		377 WHITTIER HIGHWAY	MOULTONBOROUGH	NH	03254
17070-000000	3 BIRCHWOOD PL	ARNOLD ROBERT JW	EVANS NANCY	POST BOX 1489	WELLS	ME	04090
17076-000000	47 CENTRAL AV	ARC CAFEUSA001 LLC		11995 EL CAMINO REAL	SAN DIEGO	CA	92130
		LAFRANCE BOWDEN HOSPITALITY II, LLC	TIM BURKHARDT, CHA	41 OLD BEDFORD ROAD	WESTPORT	MA	02790
		OPECHEE CONSTRUCTION CORPORATION	BARRY STOWE	11 CORPORATE DRIVE	BELMONT	NH	03220
		ALLEN & MAJOR ASSOCIATES, LLC	BRIAN JONES	400 HARVEY ROAD, SUITE D	MANCHESTER	NH	03103
		VANASSE & ASSOCIATES, INC	JEFFREY DIRK, PE	35 NEW ENGLAND BUSINESS C	ANDOVER	MA	01810-1066
		STONEY RIDGE ENVIRONMENTAL, LLC	CYNTHIA BALCIUS, CSS, CWS	8 KIANA ROAD	ALTON	NH	03809

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE NOTES– SITE-2026-0001

Application Type:	Site Plan
Applicant(s):	Lafrance Bowden Hospitality II, LLC
Owner(s):	ARC CAFEUSA001, LLC
Location:	47 Central Ave. (Assessor's Map 17, Lot 76)
Date Sent:	February 19, 2026

INTENT: Proposal is to construct a four-story, 50,120± s.f., 94-unit hotel with associated patios, landscaping, parking, and utilities. (SITE-2026-0001) *(There are three (3) Conditional Use Permits associated with this application.)*

LOTS/UNITS PROPOSED: Extended-stay hotel with 94 units

AGENDA ITEM #: 1

ACREAGE: 1.77± ac.

ZONING DISTRICT: Gateway (G)

EXISTING LAND USE: Formerly commerical, currently vacant

PROPOSED LAND USE: Hotel

SURROUNDING LAND USE: Commercial, Residential, Spaulding Turnpike

ZBA ACTION: None.

PERMITS/RELIEF REQUESTED: Three City of Dover Conditional Use Permits (CUPs) are required for relief related to the frontage build-to, primary and secondary frontage built-out, and the permitted use for more than 12 lodging units.

ATTENDANCE:
Donna Benton, Planning
Erin Bassegio, Zoning
Matthew Gibbons, Engineering
Alex Mitrushi, Police Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Sean Lafrance, Lafrance Hospitality
Tim Burkhardt, Lafrance Hospitality
Brian Jones, Allen & Major
Barry Stowe, Opechee Construction
Bruce Reed, Opechee Construction
Stephan Zaets, Vanasse & Associates

Approval of minutes from January 22, 2026:
T. Clark moved to approve the January 22, 2026 minutes. Seconded by A. Mitrushi. Vote: U/A.

PLAN REVIEW:
Planning:

- Reminder: Water and sewer investment fees
- Please provide a landscape operations and maintenance plan per §153-13A(20)
- Please review Gateway Table of Use for Streetscape and Building Design standards and provide narrative for how those standards are met with proposed design or revise design accordingly
- Target market for extended stay units?
- No signage on plan set- administrative function for approval. If relief is requested from allowed signage, a variance would be required.
    - Reminder that signage should not interfere with site distance.
- Revise plans to include:
    - Add Solar panels/green roof required based on building size
    - Please include a streetscape from the Spaulding Turnpike northbound.
    - Adjust lighting plan to address light spill off onto abutting private properties.
    - Confirm lighting is dark sky compliant
    - Add note to plans about traffic recommendations regarding snow and landscaping and maintaining striping per Traffic Impact Analysis.
    - Measurement from residential homes on Charles Street.

Engineering:

- General Comments:
- C-103:
    - CB-01 & CB-03 captured stormwater to be treated. Redesign as required to provide full treatment.
- C-104:
    - Existing water main is 8" C.I., 8X8 tee with 3-way gate cluster will be required.
    - Add SMH on Central Ave and confirm size and material from SMH 2 to Central Ave SMH.

  - Note road bed is 8" reinforced concrete on Central Ave.
  - Hydrants will require anchor tee and gate valve
  - Schedule hydrant flow test with CS Utilities Department
  - Maximum size 2" for water meters on domestic service, recommend reducing to 2"
  - Add hydrant at end of line on southside of building after fire service connection, relocate reducer after fire service connection
- C-105:
  - Add lighting shields and revise to show no light trespass
- C-107:
  - Show turning analysis for garbage truck
  - Drainage Report
  - Provide a detailed narrative how each item of Dover Code Section 153-14 is addressed
  - Recommend providing Infiltration calculations in accordance with Section Env-Wq 1504.14.
  - Report refers to A soil, B soils are addressed in the hydrocad file
- Traffic Analysis
  - Applicant to relocate crosswalk from northern to southern side and provide all infrastructure.

Police:

- No comments.

Inspection Services:

- Understand that building is to be sprinkled.
- IBC requires 4 accessible parking spaces when 76-100 parking spaces in a lot. Provide accessible signage and detail for EV accessible charging location
- Clarify access aisle min 8' aisle width for EV station.
- IS generator indented to be a life safety generator
- Indicate location of FDC on the front side of the proposed structure
- Indicate generator size, fuel type and capacity of fuel storage if applicable
- Identify the exits, and provide interior floor plan.
- Accessible signage language to coincide with accessibility requirements (references to Handicap to be revised)

Fire Department:

- FDC location to Fire Department's satisfaction
- How would FD access rear of building?

Business Development:

- The use appears consistent with and appropriate to the highway-oriented nature of this site.
- Please let us know how Business Development can support the operators/management as this project moves forward.
- Once open, the hotel can claim a free business listing on Dover's destination marketing site Discoverdovernh.com

Planning Board:

- Note that there have been sewage and water issues onsite in the past.

Next Steps: Revise plans per comments above and resubmit for unofficial TRC review and Planning Board submission.

Meeting paused at: 10:59 a.m.

OPECHEE
CONSTRUCTION CORPORATION

Dover Planning Board
c/o Planning and Community Development
288 Central Avenue, Dover, NH 03820

February 26th, 2026

RE: Resubmission #1 – Proposed TownePlace Suites by Marriott

Application Type:	Site Plan (2026-0001)
Buyer/Applicant:	Lafrance Bowden Hospitality II, LLC
Owner:	ARC CAFEUSA001, LLC
Project address:	47 Central Avenue (Assessor's Map 17 Lot 76)
Zoning Districts:	Gateway District (G)

Dear Planning Board Chair and Members:

On behalf of the developers, Opechee Construction is pleased to submit documents to address comments received at the February 19, 2026 Technical Review Committee Meeting. Revised plans and supporting materials have been updated accordingly. Responses are provided below.

Planning:

- Reminder: Water and sewer investment fees.
  Acknowledged. The applicant will coordinate with the city prior to issuance of building permits.

- Provide landscape operations and maintenance plan per §153-13A(20).
  Landscape operation and maintenance plan is provided on Sheet L-502.

- Review Gateway Table of Use for Streetscape and Building Design standards and provide narrative of compliance.
  See attached narrative addressing compliance with the design standards.

- Target market for extended stay units?
  - ***Business travelers*** *- Professionals (consultants, engineers, IT contractors, sales reps) assigned to work in the region for weeks or months.*
  - ***Remote Workers*** *- Individuals working remotely who prefer a comfortable place with kitchen, workspace, and strong Wi-Fi over a short-term rental or apartment lease.*
  - ***Healthcare-Related Guests*** *- Travel nurses, medical interns, or patients and families undergoing treatment at local hospitals who need lodging for extended periods.*

- ***Students & Interns*** *- Students in internships, co-ops, or temporary academic programs at nearby colleges may use extended stays when semester housing isn't required.*
- ***Temporary Project Workforce*** *- People involved in construction projects, seasonal work, or other temporary labor in the region.*

- No signage on plan set- administrative function for approval. If relief is requested from allowed signage, a variance would be required. Reminder that signage should not interfere with site distance.
  All signage has been removed from the planning site review application.

- Revise plans to include solar panels/green roof as required based on building size.
  A 40kW solar array will be provided for 30% of the roof area and a plan note was added to sheet C-103. A roof plan depicting these details can be provided for building permit.
  This can be made a condition of Planning Board approval.

- Include streetscape from Spaulding Turnpike northbound.
  An additional architect's perspective view has been provided.

- Adjust lighting plan to address light spill onto abutting private properties.
  - ***Adjustments to the proposed lighting have been made to mitigate the distance of illumination.***
  - ***However, by easements, the property is allowed parking lot improvements with vehicle & pedestrian rights within the northeast corner of the abutter's parcel. With that said, parking lots and pedestrian walkways require lighting and are inherent to those improvements.***
  - ***Additionally, the properties share access whereas the property line is located within the common the driveway and both users have existing lights illuminating that general location of shared access.***

- Confirm lighting is dark sky compliant.
  - ***The parking lot and walkway lighting is dark sky compliant.***
  - ***The roof accent lighting and porte cochere lights are dark sky compliant.***
  - ***The decorative wall sconces at the main entrance, patio, and exit doors are not dark sky fixtures. However, we request the Planning Board to permit the architectural style light as alternates in accordance with 149-14.E(2)(c) in consideration of compatibility with the building aesthetics.***

- Add note to plans about traffic recommendations for snow removal, landscaping, and striping per Traffic Impact Analysis.
  Notes regarding snow and landscaping have been added to the Layout & Materials Plan, see note #7 and #8. The striping has been revised to reflect the turning lanes as directed by the Traffic Impact Analysis.

- Measurement from residential homes on Charles Street.
  The hotel is setback 212' to the Spaulding Turnpike westerly ROW, at its closest point.

Engineering:

- CB-01 & CB-03 captured stormwater to be treated. Redesign as required to provide full treatment.
  A&M Response: CB-03 and a portion of the building rooftop have been re-routed to flow to the infiltration system for full treatment. The drainage report has been revised to reflect this change and demonstrate compliance with the City of Dover treatment standards.

- Existing water main is 8" C.I., 8x8 tee with 3-way gate cluster will be required.
  A&M Response: The plan has been revised as requested.

- Add SMH on Central Ave and confirm size and material from SMH 2 to Central Ave SMH.
  A&M Response: A SMH has been added on Central Ave, as requested.

- Note road bed is 8" reinforced concrete on Central Ave.
  A&M Response: This has been noted on the Utilities Plan.

- Hydrants will require anchor tee and gate valve.
  A&M Response: The City's standard Fire Hydrant detail is on sheet C-505, which indicates an anchor tee and gate valve.

- Schedule hydrant flow test with CS Utilities Department.
  A&M Response: The Applicant has reached out to Dover DPW to schedule the flow test.
  This can be made a condition of Planning Board approval.

- Maximum size 2" for water meters on domestic service; recommend reducing to 2".
  A&M Response: The required size of the domestic service will be determined by the plumbing engineer following the results of the hydrant flow test.
  This can be made a condition of Planning Board approval.

- Add hydrant at end of line on south side of building after fire service connection; relocate reducer after fire service connection.
  A&M Response: A blow-off hydrant has been added and the reducer relocated, as requested.

- Add lighting shields and revise to show no light trespass.
  A&M Response: Please see Opechee's response to planning above.

- Show turning analysis for garbage truck.
  A&M Response: A turning analysis for a garbage truck has been added to sheet C-107.

- Provide a detailed narrative how each item of Dover Code Section 153-14 is addressed.
  A&M Response: The requested narrative has been added to the Drainage Report, see page 11.

- Recommend providing Infiltration calculations in accordance with Section Env-Wq 1504.14.
  A&M Response: Section Env-Wq 1504.14 describes the methods for calculating the design infiltration rate. Page 6 of the Drainage Report describes how the design infiltration rate was calculated using methods consistent with Section Env-Wq 1504.14.

- Report refers to A soils, B soils are addressed in the hydroCAD file.
  A&M Response: The analysis used Hydrologic Soil Group "B" based on the results of the test pits performed by A&M. See page 6 of the Drainage Report for additional information.

Traffic:

- Applicant to relocate crosswalk from northern to southern side and provide all infrastructure.
  The crosswalk will be relocated per the request. Vanasse & Associates has prepared a "Proposed Intersection Improvements Plan" and it's attached for review and approval.

Inspection Services:

- IBC requires 4 accessible parking spaces when 76-100 parking spaces in a lot. Provide accessible signage and detail for EV accessible charging location.
  An additional accessible parking space has been provided.

- Clarify access aisle min. 8' width for EV station.
  The access aisle for the EV station has been revised to be 8 feet wide.

- Is generator intended to be a life safety generator
  That is not the intention.

- Indicate location of FDC on front side of structure.
  A fire department connection has been shown on the front of the building with a stone path to provide unobstructed access.

- Indicate generator size, fuel type, and storage capacity if applicable.
  The generator will be supplied with natural gas without the need for storage capacity. The generator size will be determined later during the design-build construction process and can be provided to the Inspection Services as a condition of Planning Board approval.

- Identify exits and provide interior floor plan.
  Floor plans have been provided with entrance & exit locations identified.

- Accessible signage language to coincide with accessibility requirements (references to Handicap to be revised).
  The notation has been revised to "accessible" parking spaces.

Fire Department:

- FDC location to Fire Department's satisfaction
  A fire department connection has been shown on the front of the building with a stone path to provide unobstructed access.

- How would FD access rear of building?
  Fire Department access to the rear of the building is provided in accordance with NFPA 1 (2021 Edition) as adopted by the State of New Hampshire.
  - *Per Section 18.2.3.2.1, a fire apparatus access road is required to extend within 50 feet of at least one exterior door opening. The site layout provides access within 50 feet of three (3) exterior doors:*
    - *22 feet from the main entry vestibule door*
    - *30 feet from the easterly building end stairway door*
    - *38 feet from the easterly building end exterior corridor door*
  - *Per Section 18.2.3.2.2.1, where a building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13, fire apparatus access roads shall be arranged such that any portion of the facility or any portion of an exterior wall of the first story is located not more than 450 feet from a fire apparatus access road.*
    - *The proposed building will be protected throughout with an NFPA 13 automatic sprinkler system. The most remote portion of the rear exterior wall is located less than 200 feet from the fire apparatus access road, which is well within the 450-foot maximum permitted distance.*

  Accordingly, fire department access to the rear of the building complies with the applicable provisions of NFPA 1 (2021).

Business Development:

- The use appears consistent with and appropriate to the highway-oriented nature of this site.
  Acknowledged.

- Please let us know how Business Development can support the operators/management as this project moves forward.
  Acknowledged.

- Once open, the hotel can claim a free business listing on Dover's destination marketing site Discoverdovernh.com
  Acknowledged.

Planning Board:

- Note that there have been sewage and water issues onsite in the past.
  Acknowledged.

As we continue to maneuver through the review process with the city staff, the TRC and the Planning Board, please do not hesitate to ask any questions. Thank you!

Sincerely,



David Sherborne, V.P. & Architect Barry Stowe, Civil Design Manager

OPECHEE CONSTRUCTION CORPORATION

Vanasse & Associates inc

Transportation Engineers & Planners

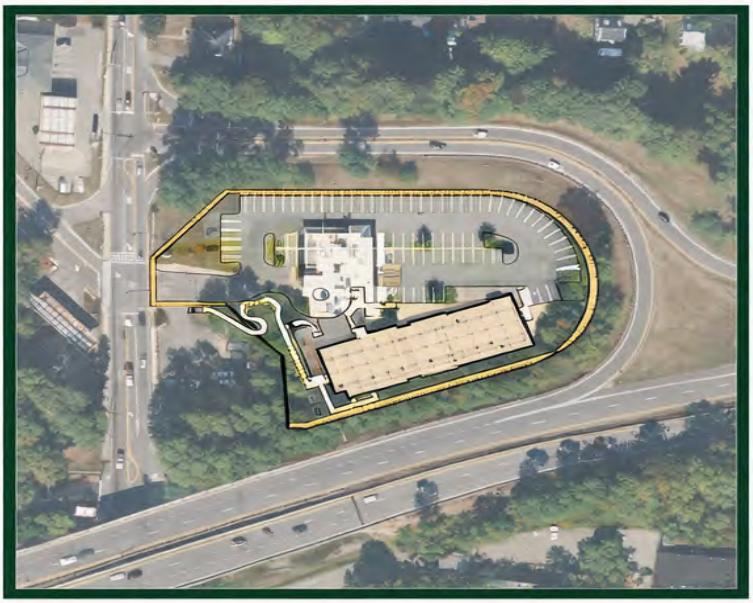
TRAFFIC IMPACT STUDY

Proposed Hotel Development

47 Central Avenue (NH Route 108)

Dover, New Hampshire

LOCUS MAP



Prepared for:

- **Opechee Construction Corporation**
  11 Corporate Drive
  Belmont, NH 03220

Attn: Mr. Barry Stowe
Civil Design Manager

Prepared by:

- **Vanasse & Associates, Inc.**
  35 New England Business Center Drive, Suite 140
  Andover, MA 01810
  (978) 474-8800

Project No.: 10566 Date: January 29, 2026

Traffic Impact Study prepared to evaluate existing and projected traffic conditions associated with the proposed four-story, 94-guest-room hotel development located at 47 Central Avenue in Dover, New Hampshire.

MEMORANDUM

TO: Mr. Barry Stowe
Civil Design Manager
Opechee Construction Corporation
11 Corporate Drive
Belmont, NH 03220

FROM: Scott W. Thornton, P.E. *and*
Stephan Zaets, P.E., PTOE
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810
(978) 474-8800



DATE: January 29, 2026

RE: 10566

SUBJECT: Traffic Impact Study
Proposed Hotel – 47 Central Avenue (NH Route 108)
Dover, New Hampshire

Vanasse & Associates, Inc. (VAI) has prepared this Traffic Impact Study (TIS) in order to identify traffic impacts associated with a proposed hotel development to be located at 47 Central Avenue (NH Route 108) in Dover, New Hampshire (hereafter referred to as the "Project"). The purpose of this memorandum is to review existing and future traffic conditions in the vicinity of the Project site, determine the traffic impact of the proposed Project at key intersections expected to experience increased traffic levels from the Project, and review the need for improvements to mitigate the Project's traffic impact.

PROJECT DESCRIPTION

The Project entails the construction of a four story, 94 guest room hotel. At present, the Project site is vacant and previously contained a Burger King with a drive-through and indoor seating. The Project site is bordered by Spaulding Turnpike (NH Route 16) to the south, Route 16's northbound on and off ramps to the north and the east, and Route 108 to the west.

Vehicle access to and egress from the proposed development will be provided an existing driveway opening that meets the Route 108 at Locust Street intersection.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in January 2026. The field investigation consisted of an inventory of existing roadway geometrics, traffic volumes, and operating characteristics, as well as posted speed limits, sight distance, and land use information within the study area. The study area for the Project is listed below and graphically depicted in Figure 1:

- Central Avenue at NH Route 16 southbound on/off-ramps
- Central Avenue at Locust Street and Project site driveway
- Central Avenue at NH Route 16 northbound on/off-ramps

The following describes the study area roadway and intersections.

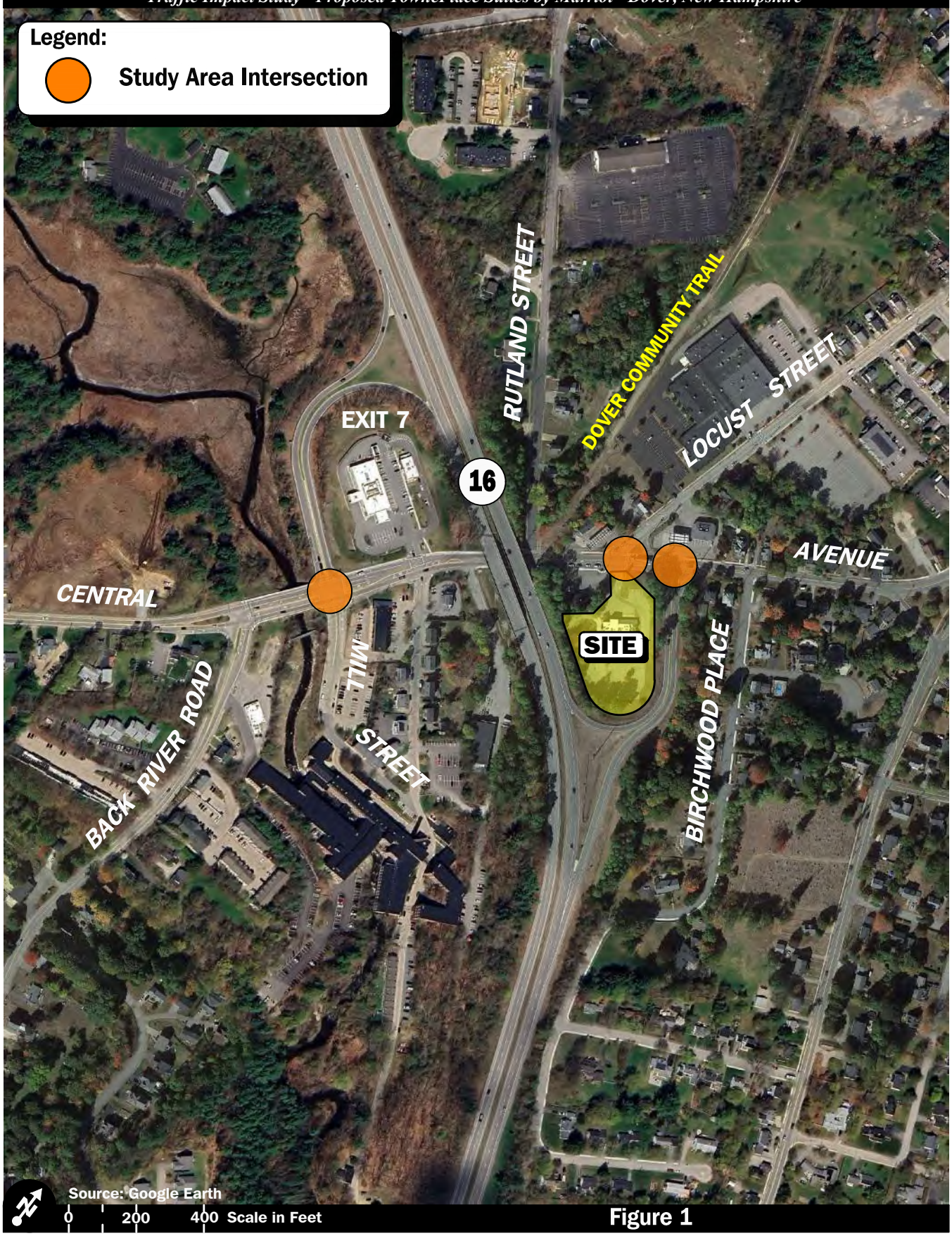


Figure 1

Site Location and Study Area Map

Vanasse & Associates inc

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Study Area

Roadways

Central Avenue

Central Avenue is a two-lane minor arterial roadway under the jurisdiction of the City of Dover and traverses the study area in a general north-south direction, providing additional turn lanes at major intersections. Central Avenue features 11- to 14-foot-wide travel lanes in each direction, separated by a painted double-yellow centerline. The road also includes 4- to 5-foot-wide sidewalk on the north side of the roadway. Illumination is provided within the study area through lights attached to utility poles. The posted speed limit along Central Avenue within the study area is 30 miles per hour (mph). Land use within this area is predominantly commercial with some residential properties.

Intersections

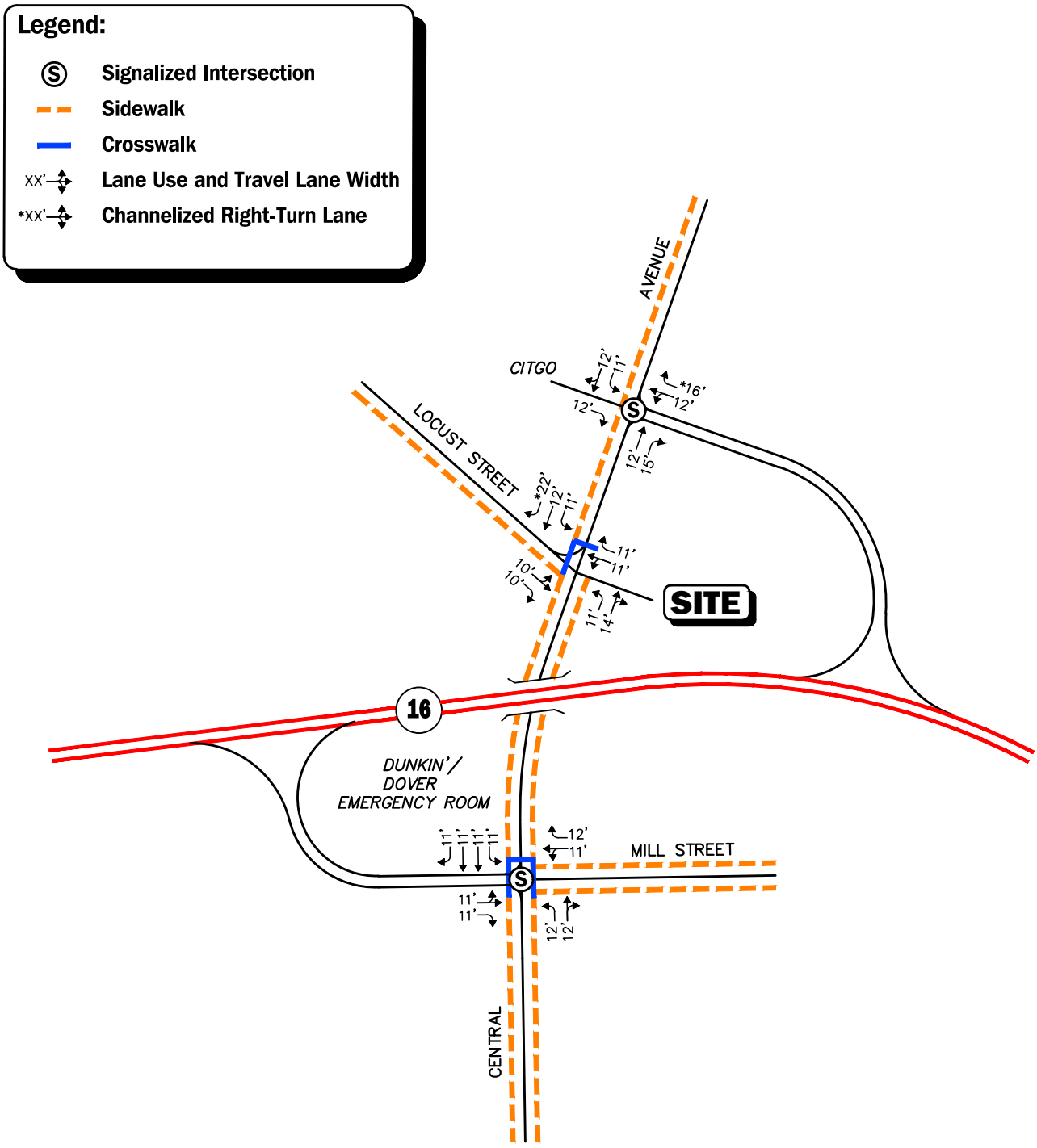
Figure 2 summarizes existing traffic control, lane use, travel lane widths, and pedestrian and bicycle accommodations at the study area intersections as observed in January 2026.

Existing Traffic Volumes

In order to establish base traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts and manual turning movement counts (TMCs) were completed in December 2025. TMCs were conducted on Thursday, December 18, 2025, during the weekday morning (7:00 to 9:00 AM) and weekday evening (3:00 to 6:00 PM) peak periods, and on December 20, 2025 during the Saturday midday (11:00 AM to 2:00 PM) peak periods. The ATR counts were conducted over a 72-hour period on Central Avenue, south of Locust Street, from December 18 to December 20, 2025.

Traffic-Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, NHDOT 2024 Monthly Data, provided for Urban Group 4 (Urban Highways), were reviewed. Based on a review of this data, December volumes were found to be approximately 14.0 percent *below* peak-month conditions. As such, an adjustment factor of 1.14 was applied to the 2025 traffic volumes to represent peak-month conditions in accordance with NHDOT standards. The 2025 Existing traffic volumes are summarized in Table 1, with weekday morning, weekday evening, and Saturday midday peak-month peak-hour traffic volumes graphically depicted on Figures 3, 4, and 5, respectively.



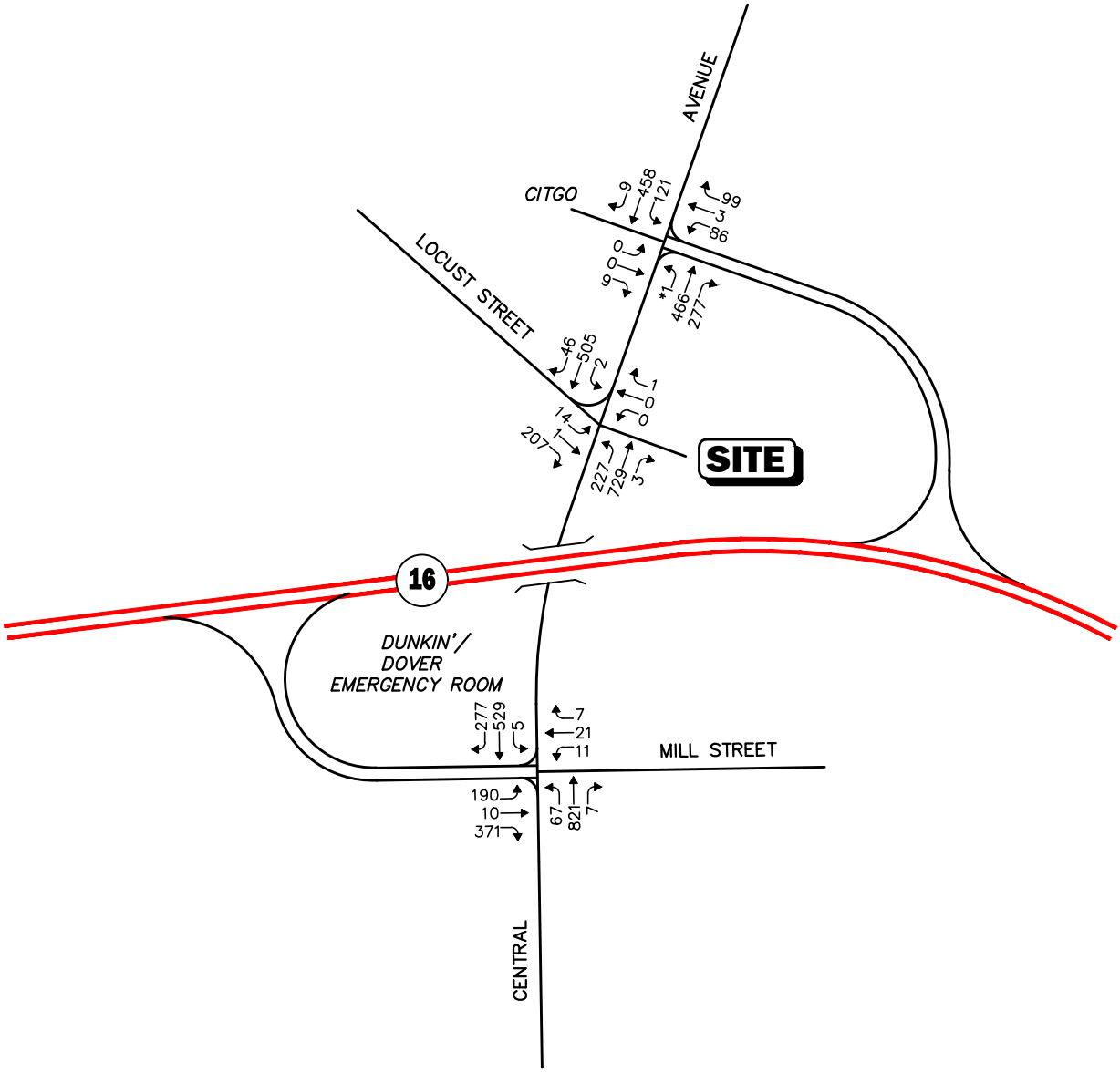
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Figure 2

Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities

Vanasse & Associates inc

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* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

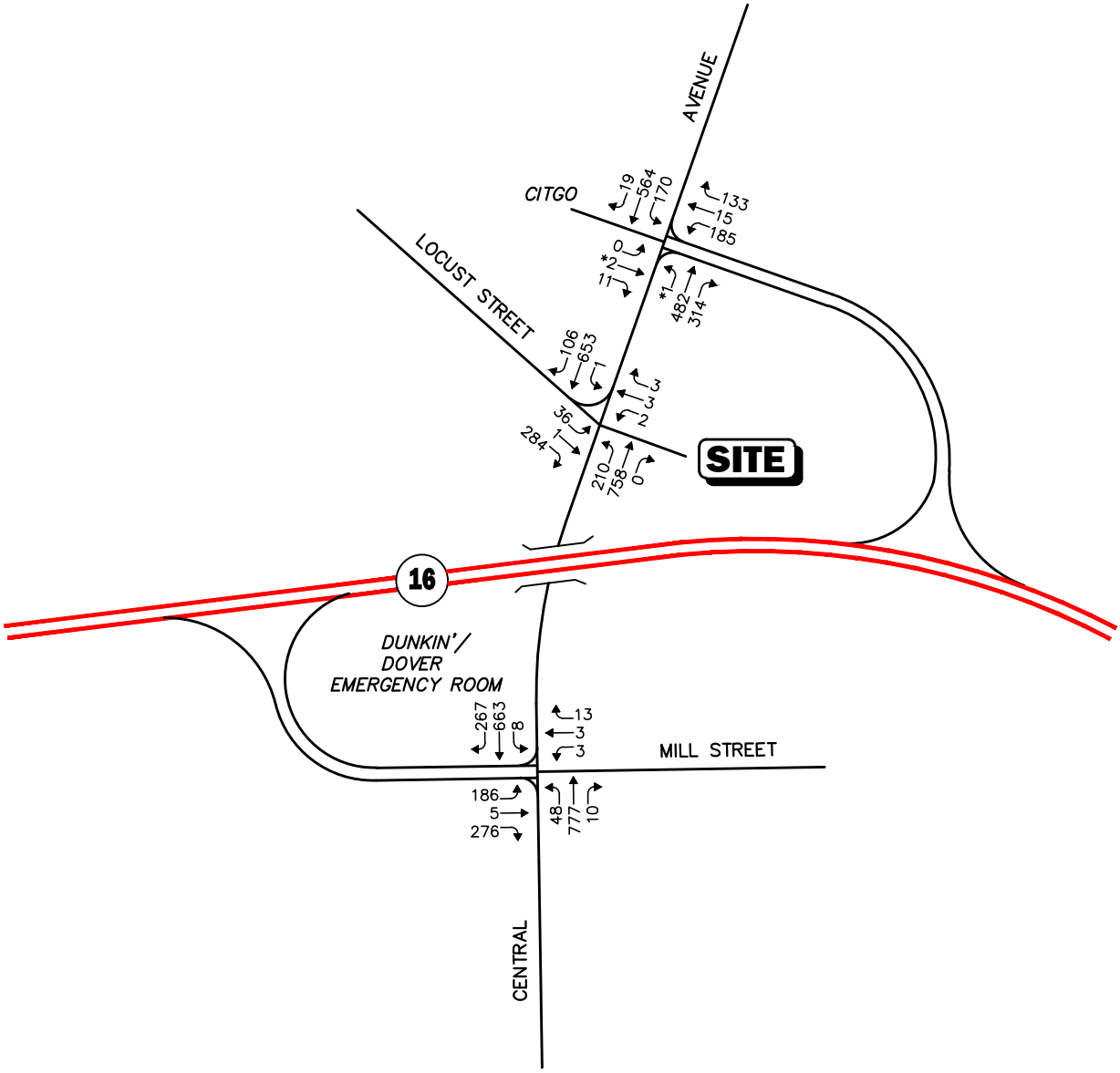
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Figure 3

Vanasse & Associates inc

2025 Existing
Peak-Month
Weekday Morning
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

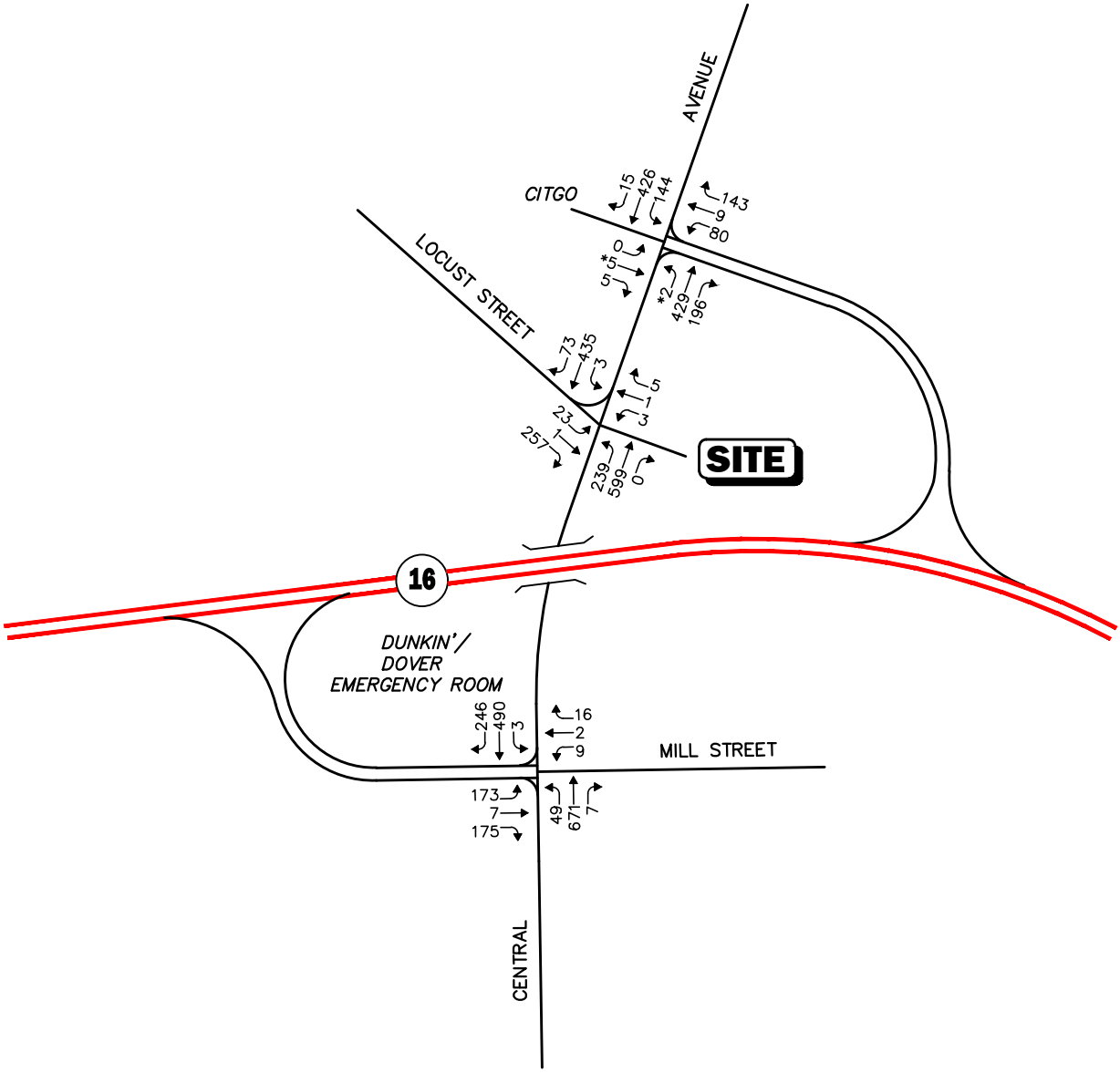
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Figure 4

Vanasse & Associates inc

2025 Existing
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 5

2025 Existing
Peak-Month
Saturday Midday
Peak-Hour Traffic Volumes

Vanasse & Associates inc

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Table 1
EXISTING ROADWAY TRAFFIC-VOLUME SUMMARY

Location/Peak Hour	Daily Volume (vpd)[a]	Volume (vph)[b]	K Factor[c]	Directional Distribution[d]
Central Avenue, south of Locust Road:				
Weekday Daily	18,784	--	--	--
Weekday Morning	--	1,671	8.9	57% NB
Weekday Evening	--	1,907	10.2	51% NB
Saturday Daily	15,961	--	--	--
Saturday Midday	--	1,533	9.6	55% NB

Source: TMCs conducted by VAI in December 2025 adjusted to account for seasonal factors.
[a]Two-way daily traffic expressed in vehicles per day, ATRs conducted by VAI in December 2025 adjusted to account for seasonal factors.
[b]Two-way peak-hour volume expressed in vehicles per hour.
[c]The percentage of daily traffic that occurs during the peak hour.
[d]Percent traveling in peak direction.

As can be seen in Table 1, Central Avenue, in the vicinity of the site, is observed to carry approximately 18,784 vehicles on an average weekday and 15,961 vehicles on an average Saturday under peak-month conditions, with approximately 1,671 vehicles per hour (vph) during the weekday morning peak hour, 1,907 vph during the weekday evening peak hour, and 1,533 vph during the Saturday midday peak hour.

Public Transportation

Public transportation services are provided within the City of Dover by the Cooperative Alliance for Seacoast Transportation (COAST). However, there are no public transportation stops in the vicinity of the Project site.

Motor Vehicle Crash Data

Motor vehicle crash data for the study area intersections were requested from the City of Dover Police Department for the most recent three-year period available (2022 through 2024) to examine crash trends in the study area. To date, these data have not been provided. When the data are provided, an update or supplement will be issued.

Vehicle Speed Measurements

Existing vehicle speeds along Central Avenue, south of Locust Street, in the vicinity of the Project site were recorded in conjunction with the ATR to determine the average and 85th percentile vehicle speeds. The speed limit on Central Avenue in the vicinity of the site is posted at 30 mph. The results of the speed measurements are shown in Table 2.

Table 2
VEHICLE TRAVEL SPEED MEASUREMENTS

	Central Avenue	
	Northbound	Southbound
Average Travel Speed (mph)	24	24
85th Percentile Speed (mph)	28	29
Speed Limit (mph)	30	30

mph = miles per hour.

As can be seen in Table 2, the mean vehicle travel speed along Central Avenue in the vicinity of the Project site was found to be 24 mph in both directions. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be 28 mph in the northbound direction and 29 mph in the southbound direction.

FUTURE CONDITIONS

To determine the impact of site-generated traffic volumes on the roadway network under future conditions, existing traffic volumes in the study area were projected to the years 2026 and 2036. Traffic volumes on the roadway network at that time, in the absence of the Project (i.e., the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others expected to be completed by 2026 and 2036. Inclusion of these factors resulted in the development of 2026 and 2036 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2026 Opening-Year and 2036 Design-Year Build traffic-volume conditions.

Future Traffic Growth

Traffic growth on area roadways is a function of the expected land development impacting the study area. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all existing traffic volumes under study. In addition, we research the location and type of planned development affecting the study area.

General Background Growth

To assess general traffic growth trends within the study area, NHDOT traffic-volume data from several permanent count stations within Region E were summarized and reviewed. NHDOT indicates that traffic volumes in Region E have fluctuated between 2014 and 2024, with a compound annual growth rate of approximately 0.87 percent. An exponential projection suggests that the average annual daily traffic is expected to grow by 0.25 percent annually. By averaging both compounded annual growth and exponential projections, the traffic in this area is anticipated to increase by an average of 0.56 percent per year.

In order to provide a prudent planning condition for the Project, a slightly higher 1.0 percent per year compounded annual traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Specific Development by Others

The City of Dover Planning Department was contacted in order to determine if there are any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on these discussions, the following project was identified for possible inclusion in this assessment:

- ***Proposed Multifamily Development – 23 Cataract Avenue.*** This project entails the construction of 176 units dispersed between four (4) four-story buildings to be located at 23 Cataract Avenue in Dover, New Hampshire. This project has been approved and is currently under construction. Estimates of traffic expected to be generated by this development were obtained from the *Traffic Impact Study*[1] *and Traffic Impact Evaluation*[2] prepared for this project and have been incorporated into the analysis of the 2026 and 2036 future traffic conditions.

- ***Proposed Residential Development – 105 Durham Road***. This project entails the construction of 9 residential units to be located at 105 Durham Road in Dover, New Hampshire. This project has been approved and is currently under construction. Based on the unit count, It is assumed that traffic under this development is encompassed within the one percent background growth rate.

No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate of 1.0 percent.

Planned Roadway Improvements

The City of Dover Department of Public Works and NHDOT were contacted in order to determine if there were any planned future roadway improvement projects within the study area. Based on these discussions, the corridor recently underwent signal improvements to all of the signalized intersections within the study. No projects aside from routine maintenance activities were identified to be planned within the study area at this time.

No-Build Traffic Volumes

The 2026 and 2036 No-Build peak-month peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to 2025 Existing peak-month peak-hour traffic volumes and incorporating the above background development traffic volumes. The resulting 2026 and 2036 No-Build weekday morning, weekday evening, and Saturday midday peak-month peak-hour traffic volumes are graphically depicted on Figures 6 through 11, respectively.

Project-Generated Traffic

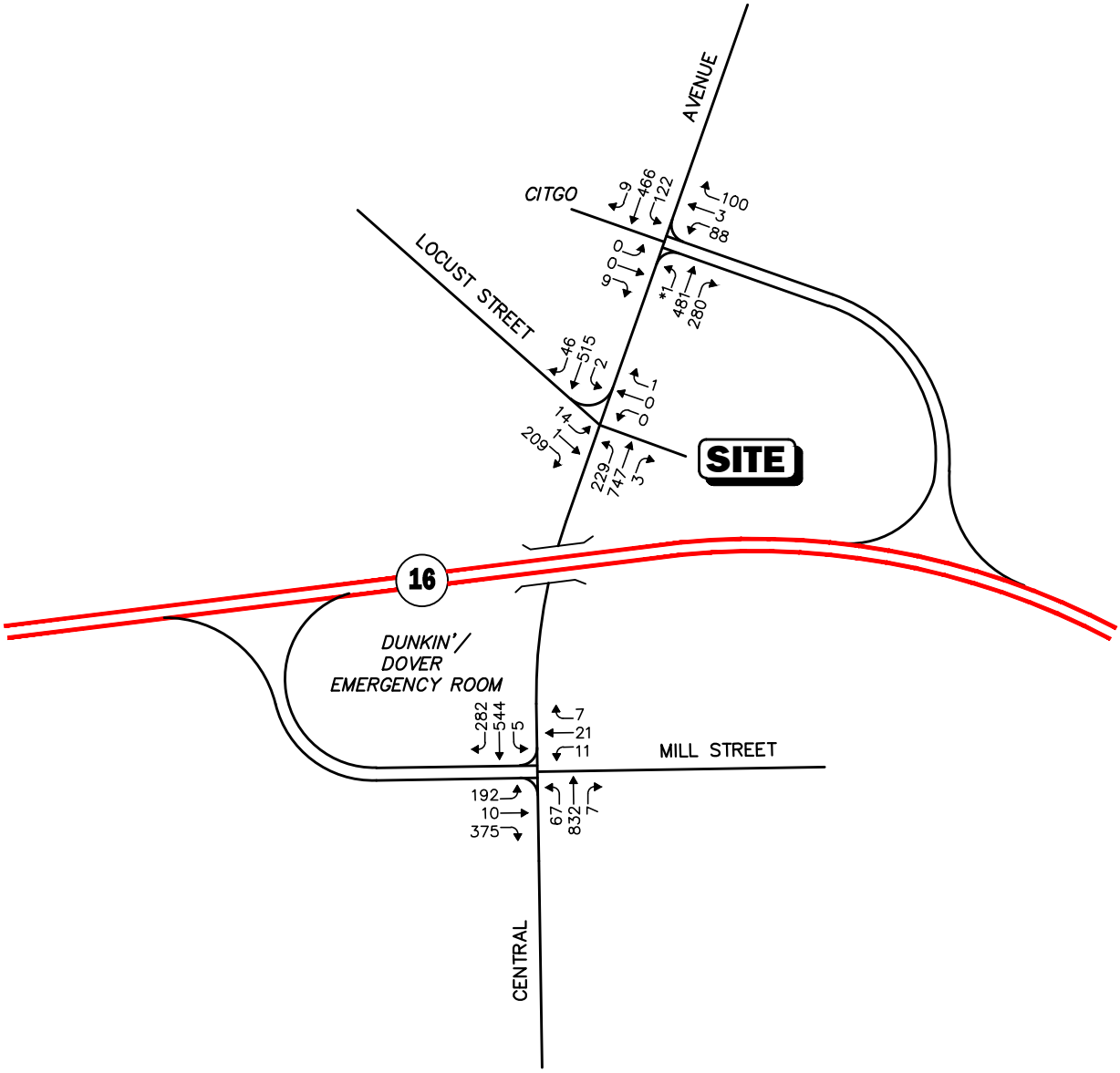
In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)[3] for similar land uses as those proposed were used. ITE Land Use Code (LUC) 311, *All Suites Hotel* was used to develop the anticipated traffic characteristics of the Project. In addition to this, the proposed hotel land use was compared to the by-right fast food restaurant, as the site currently contains a vacant Burger King with one drive-through lane (Identified as LUC 934, *Fast-Food Restaurant with Drive-Through Window)*.

---

[1] *Traffic Impact Assessment*, Proposed Residential Development – 23 Cataract Avenue , *Dover, New Hampshire*; Stephen G. Pernaw & Company, Inc. (July 2021)

[2] *Traffic Impact Evaluation,* McIntosh Apartments Expansion – 23 Cataract Avenue, *Dover, New Hampshire*; VAI, (July 2025)

[3] *Trip Generation Manual,* 12th Edition; Institute of Transportation Engineers; Washington, DC; 2025.



* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

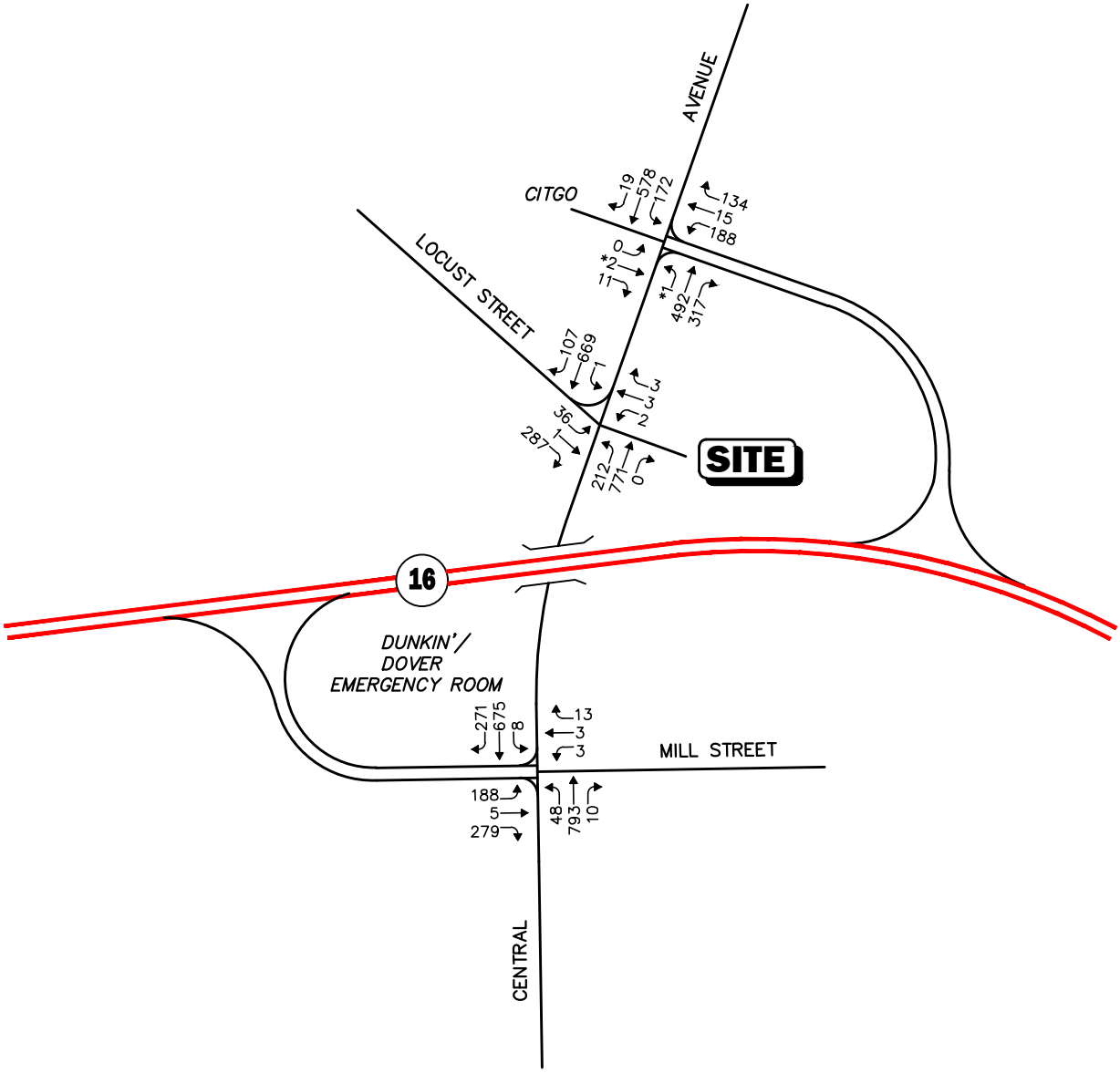
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Figure 6

Vanasse & Associates inc

2026 No-Build
Peak-Month
Weekday Morning
Peak-Hour Traffic Volumes

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*** Illegal movement.**
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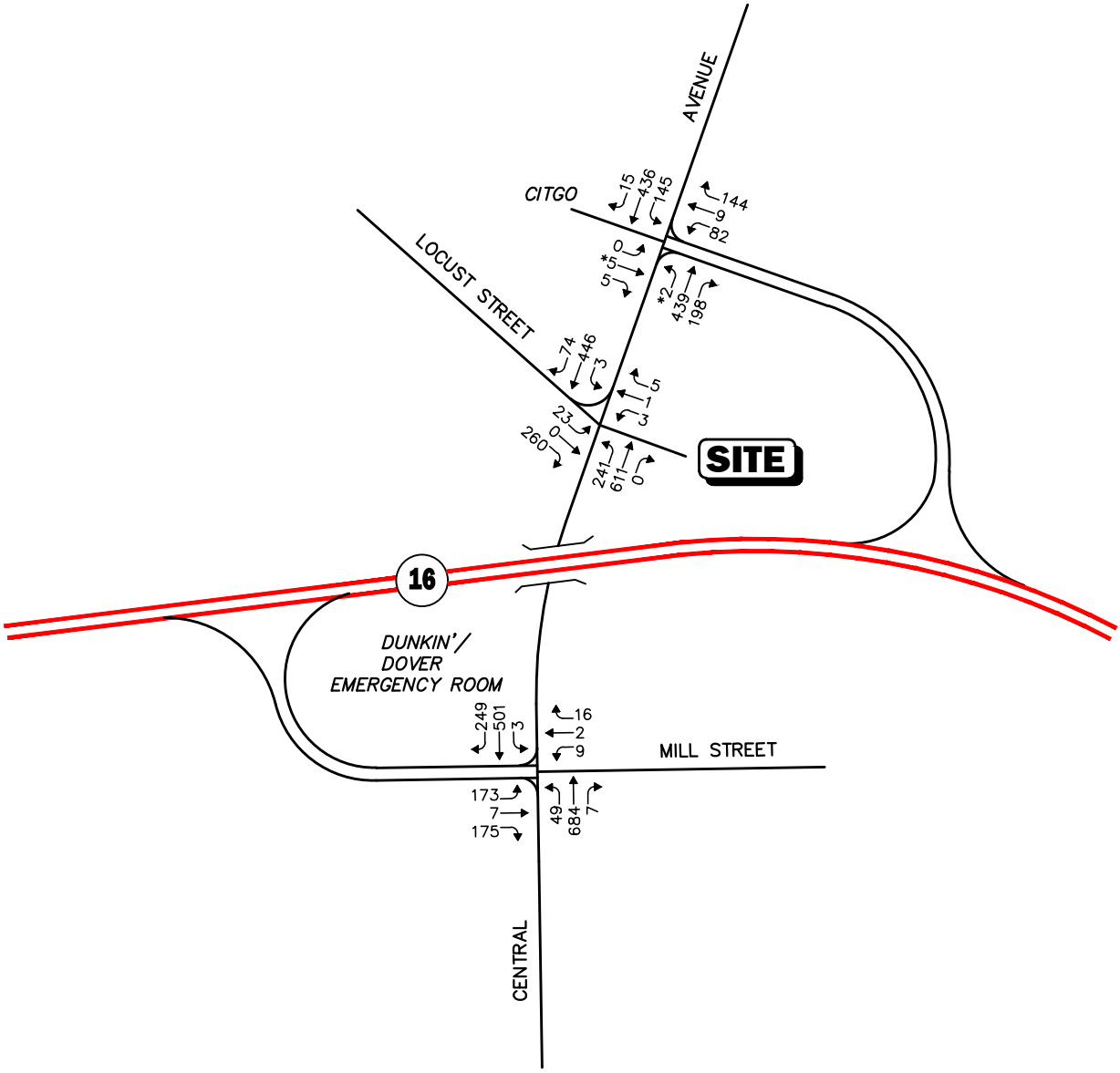
Not To Scale

Figure 7

Vanasse & Associates inc

2026 No-Build
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes

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*** Illegal movement.**
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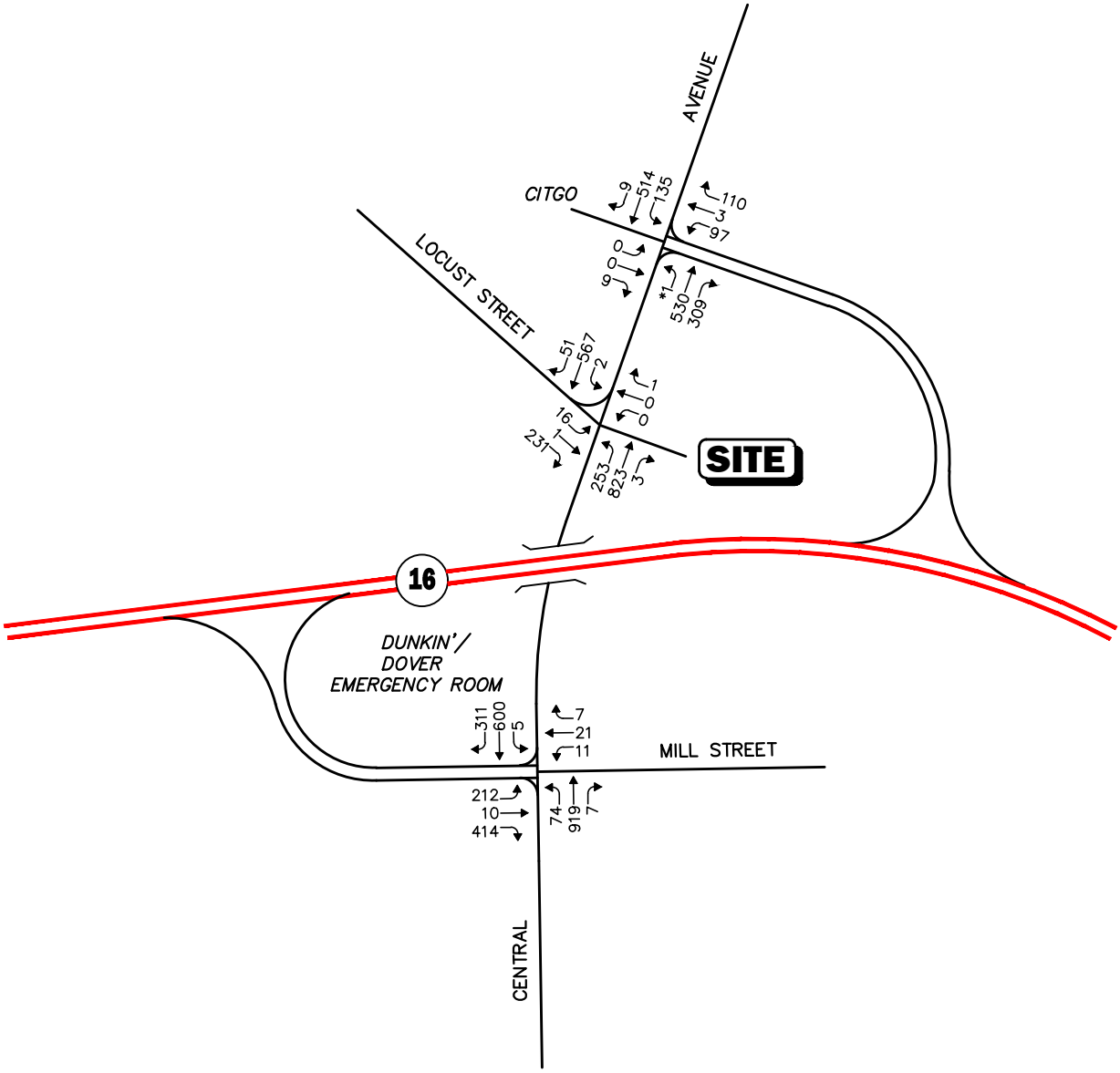
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Figure 8

Vanasse & Associates inc

2026 No-Build
Peak-Month
Saturday Midday
Peak-Hour Traffic Volumes

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* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

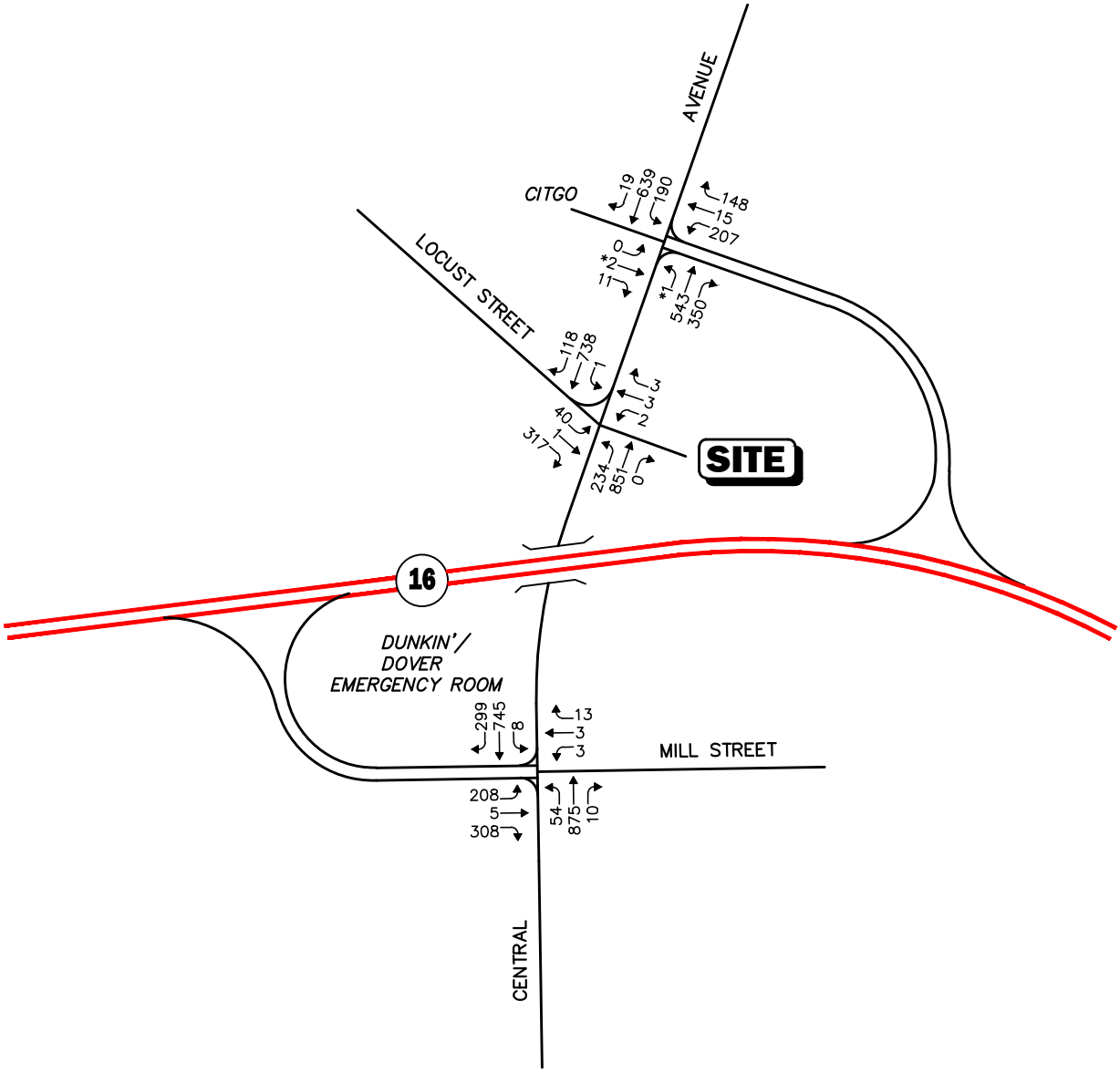
Not To Scale

Figure 9

Vanasse & Associates inc

2036 No-Build
Peak-Month
Weekday Morning
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

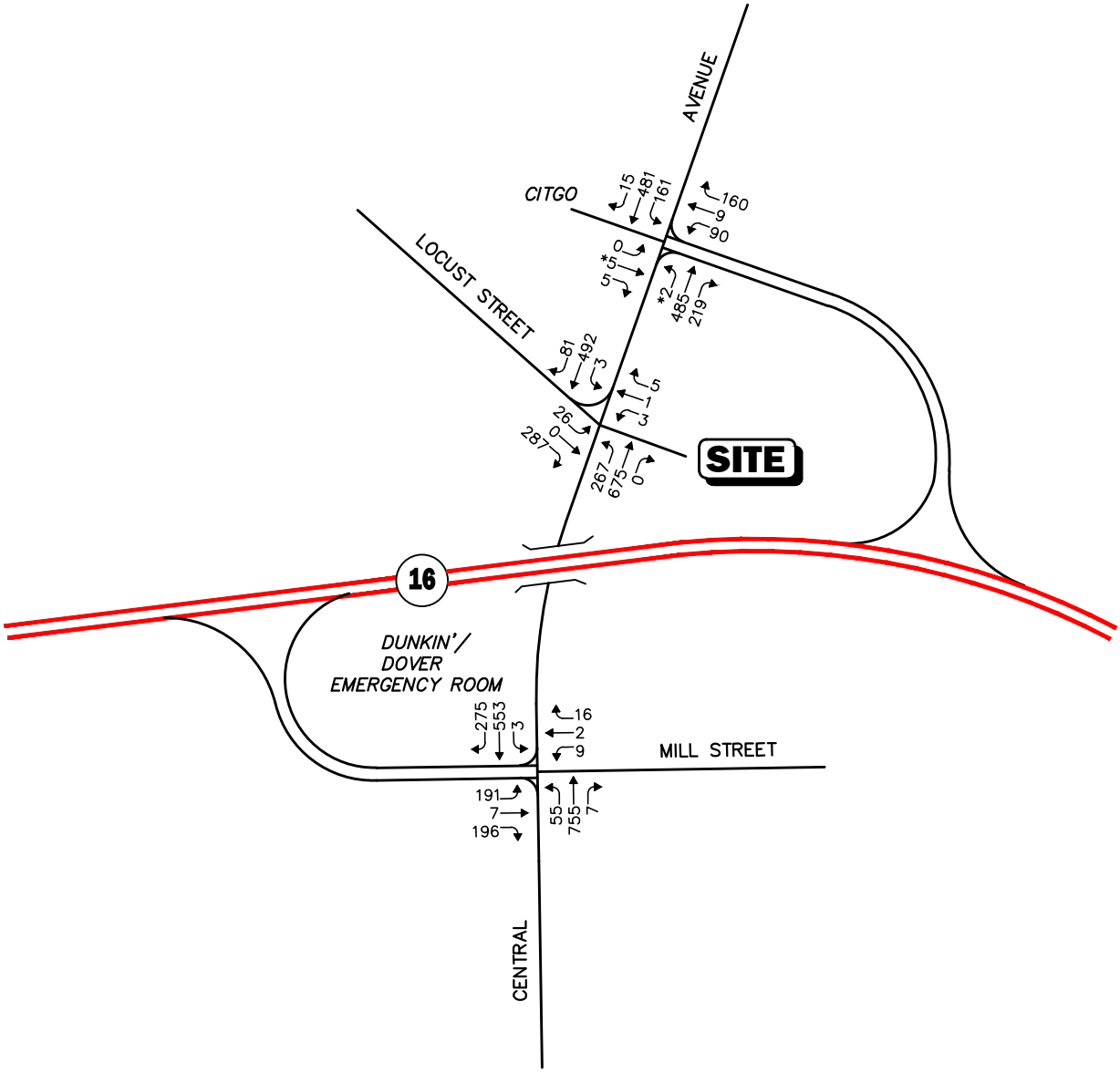
Not To Scale

Figure 10

Vanasse & Associates inc

2036 No-Build
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 11

Vanasse & Associates inc

2036 No-Build
Peak-Month
Saturday Midday
Peak-Hour Traffic Volumes

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Trip-generation calculations were performed for a typical weekday and Saturday as well as the weekday morning, weekday evening, and Saturday midday peak hours, the critical time periods for Project-related traffic activity. A summary of the expected vehicle-trip generation is summarized in Table 3.

Table 3
TRIP-GENERATION COMPARISON

Time Period/ Directional Distribution	Proposed Hotel Trips[a]	By-Right Fast Food Restaurant Trips[b]
Weekday Daily:		
Entering	186	1,459
Exiting	186	1,459
Total	372	2,918
Weekday Morning Peak Hour:		
Entering	11	110
Exiting	10	106
Total	21	216
Weekday Evening Peak Hour:		
Entering	15	107
Exiting	15	99
Total	30	206
Saturday Daily:		
Entering	235	1,700
Exiting	235	1,700
Total	470	3,400
Saturday Midday Peak Hour:		
Entering	16	168
Exiting	16	162
Total	32	330

[a]Based on ITE LUC 311, *All Suites Hotel (94 rooms)*
[b]Based on ITE LUC 934, *Fast Food Restaurant with Drive-Through Window (6.51/ 1,000 SF).*

As shown in Table 3, the Project is expected to generate approximately 372 vehicle trips on an average weekday and 470 vehicle trips on an average Saturday, with 21 vehicle trips (11 entering and 10 exiting) during the weekday morning peak hour, 30 vehicle trips (15 entering and 15 exiting) during the weekday evening peak hour, and 32 vehicle trips (16 entering and 16 exiting) during the Saturday midday peak hour.

When comparing the proposed hotel to the by-right fast-food restaurant use, the proposed hotel is expected to generate approximately 90 percent less trips during a typical weekday and typical Saturday, with comparable reductions in vehicle trips expected during the weekday morning, weekday evening, and Saturday midday peak hour periods as well.

Trip Distribution and Assignment

The directional distribution of generated trips to and from the Project site was developed based on a review of existing traffic patterns along the study area roadways and at the study intersections. Because hotel business is typically a function of regional travel, trips to/ from Route 16 were proportionally scaled based on an assumption that approximately 70 percent of traffic will come from the highway. The general trip distribution for the Project is summarized in Table 4 and graphically depicted in Figure 12.

Table 4
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction (To/From)	Distribution Percentage (To/From)
Route 16 NB Ramp	East	20
Route 16 SB Ramp	West	50
NH Route 108	North	10
NH Route 108	South	20
TOTAL		**100**

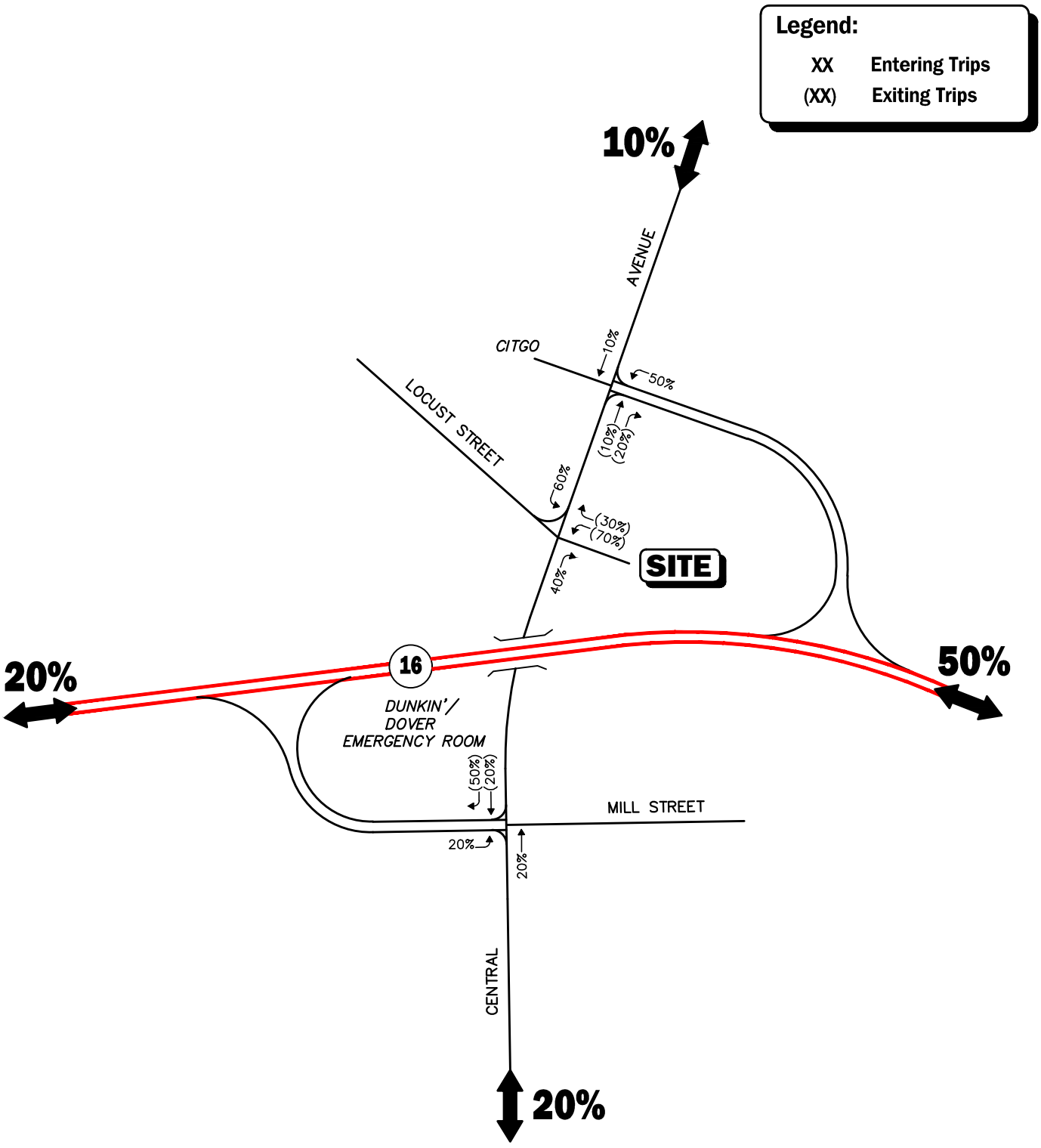
The weekday morning, weekday evening, and Saturday midday peak-month peak-hour traffic volumes expected to be generated by the Project were assigned on the study area roadway network as shown on Figures 13, 14, and 15, respectively.

Future Traffic Volumes – Build Condition

The 2026 Opening-Year Build condition networks consist of the 2026 Opening-Year No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2026 Opening-Year Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are graphically depicted on Figures 16, 17, and 18, respectively.

The 2036 Design-Year Build condition networks consist of the 2036 Design-Year No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2036 Design-Year Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are graphically depicted on Figures 19, 20, and 21, respectively.

A summary of peak-month peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 5. These volumes are based on the expected increases from the Project.



Not To Scale

Figure 12

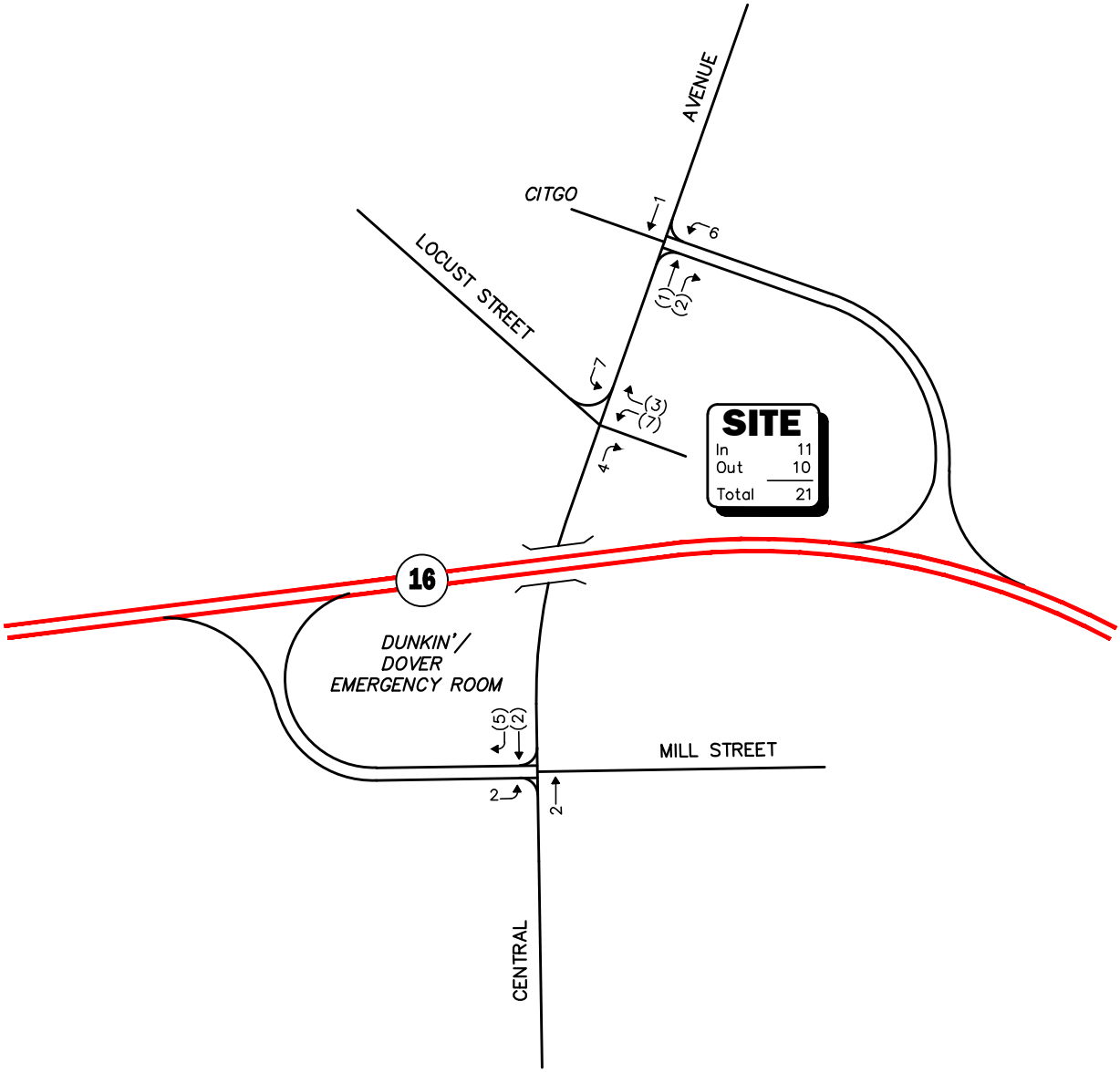
Trip Distribution Map

Vanasse & Associates inc

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Legend:

XX	Entering Trips
(XX)	Exiting Trips



Not To Scale

Figure 13

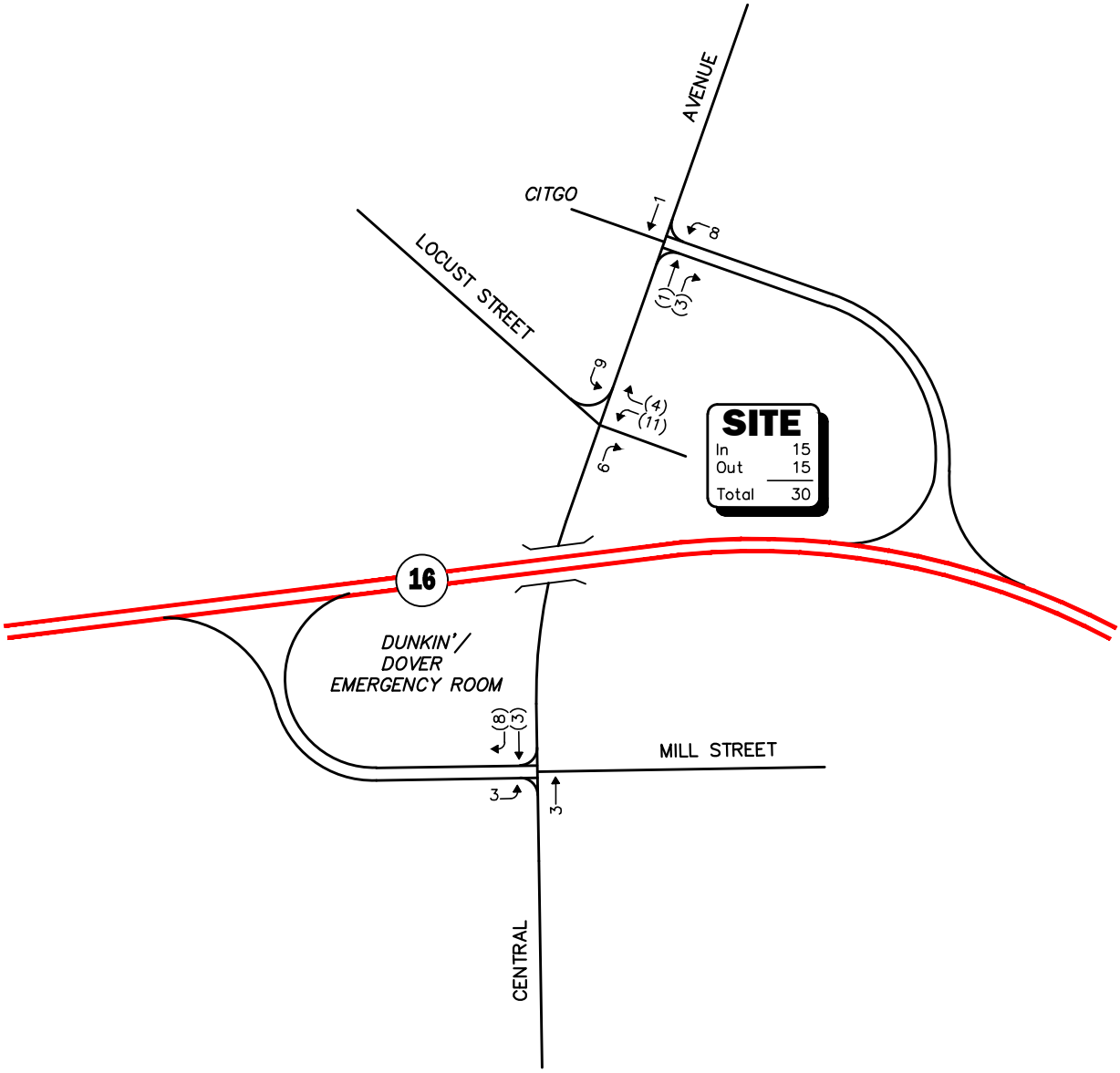
Site-Generated Peak-Month Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc

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Legend:

XX	Entering Trips
(XX)	Exiting Trips



Not To Scale

Figure 14

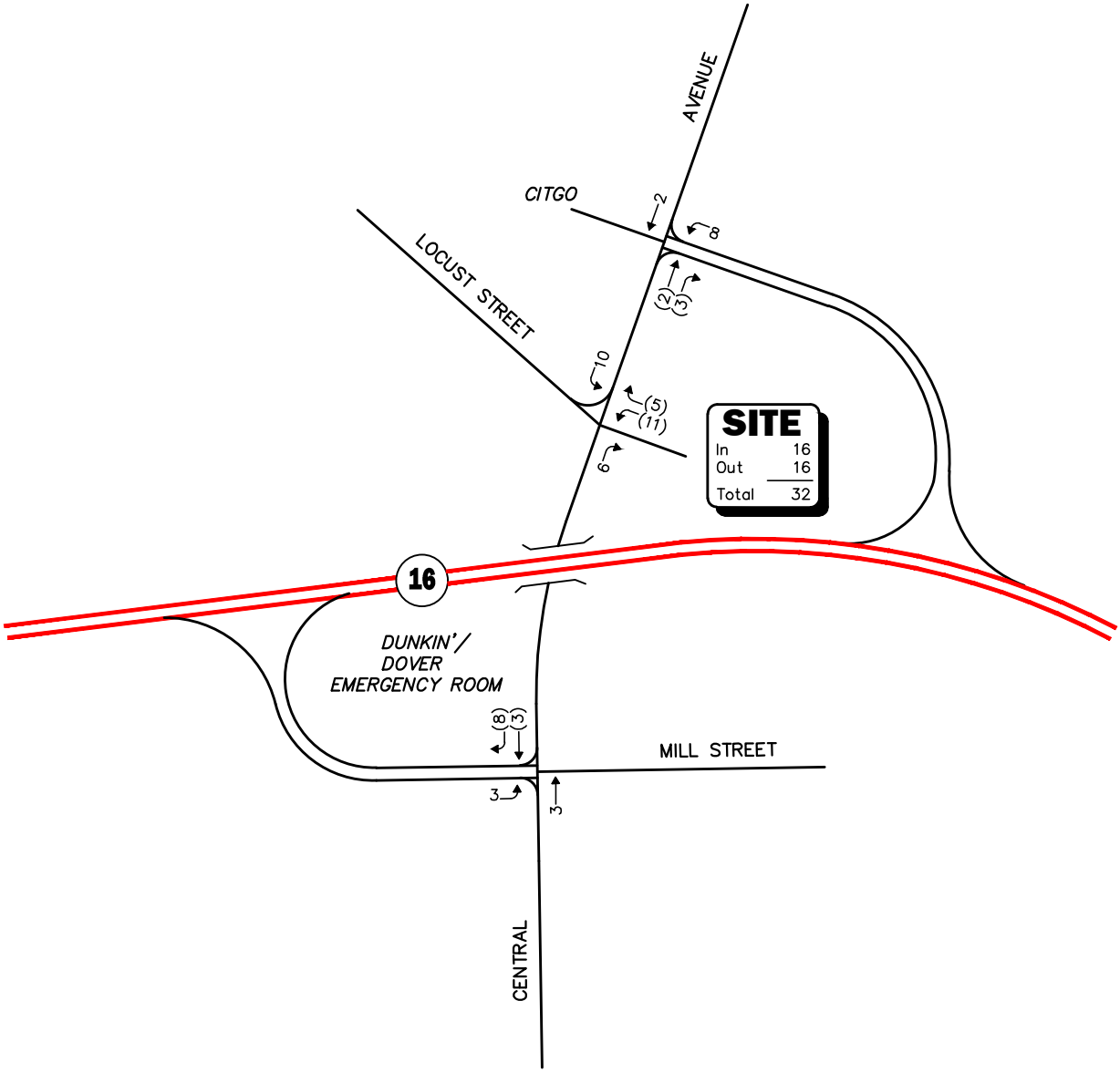
**Site-Generated
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes**

Vanasse & Associates inc

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Legend:

XX	Entering Trips
(XX)	Exiting Trips



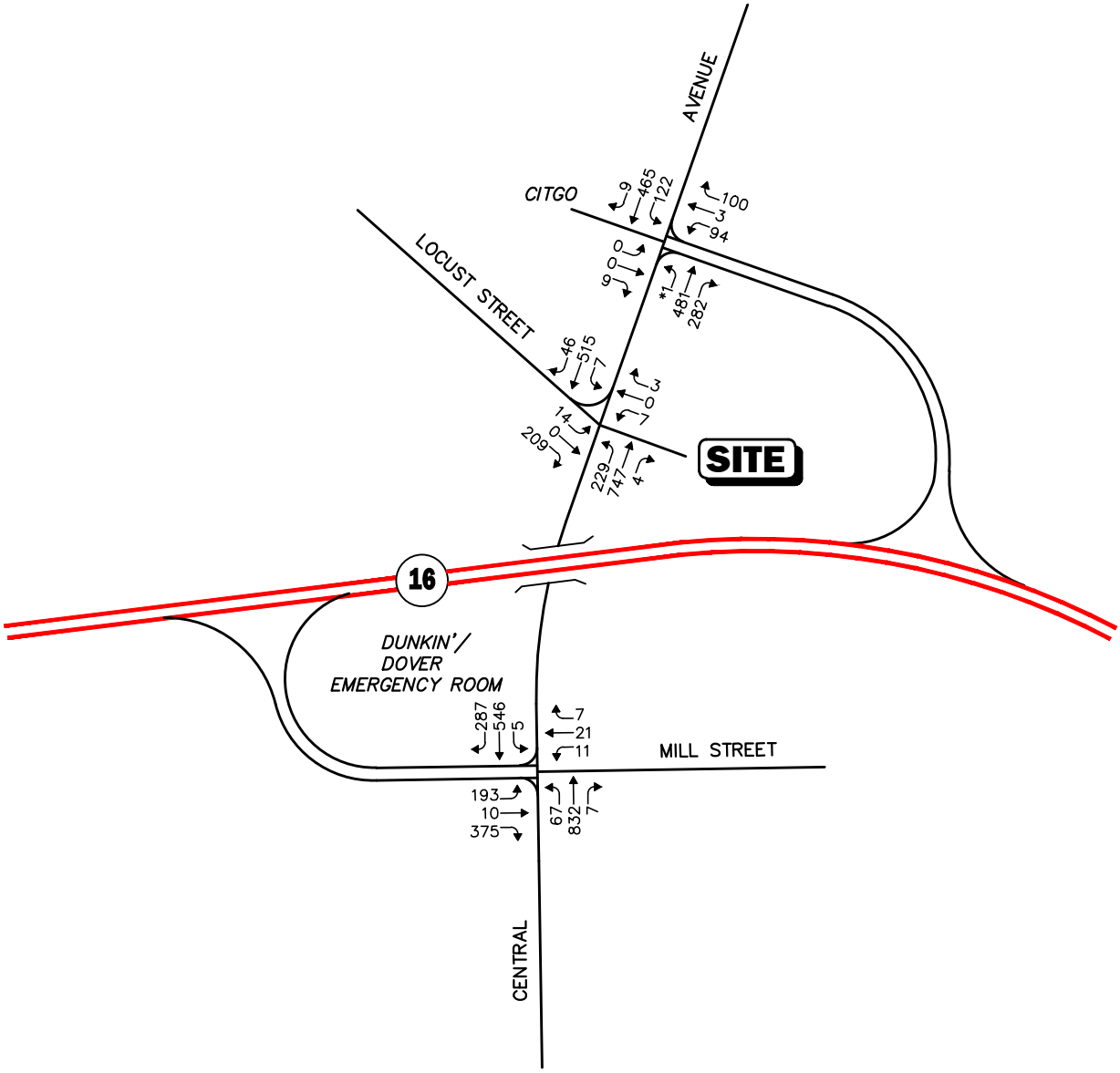
Not To Scale

Figure 15

Site-Generated Peak-Month Saturday Midday Peak-Hour Traffic Volumes

Vanasse & Associates inc

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* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

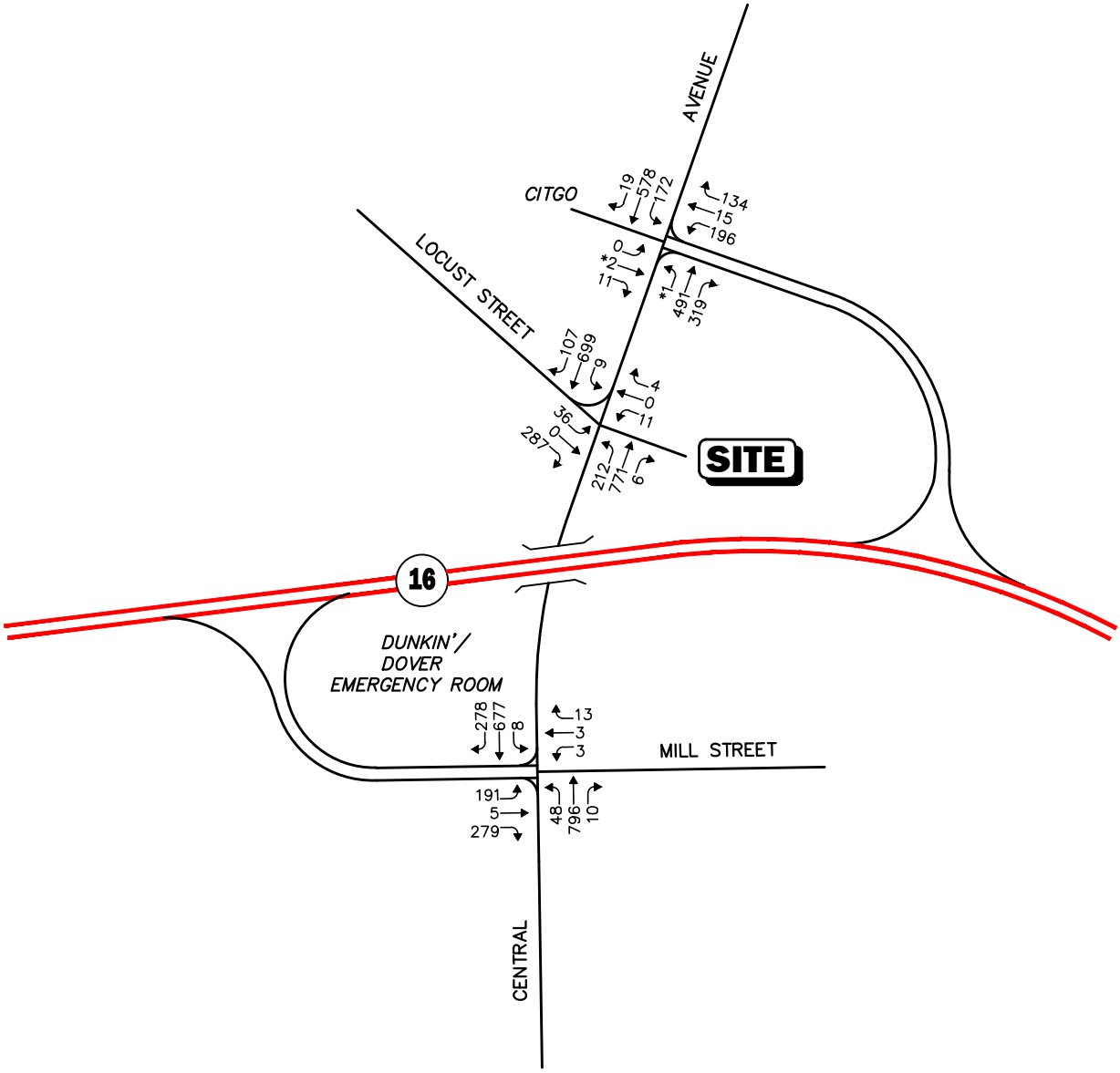
Not To Scale

Figure 16

Vanasse & Associates inc

2026 Build
Peak-Month
Weekday Morning
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

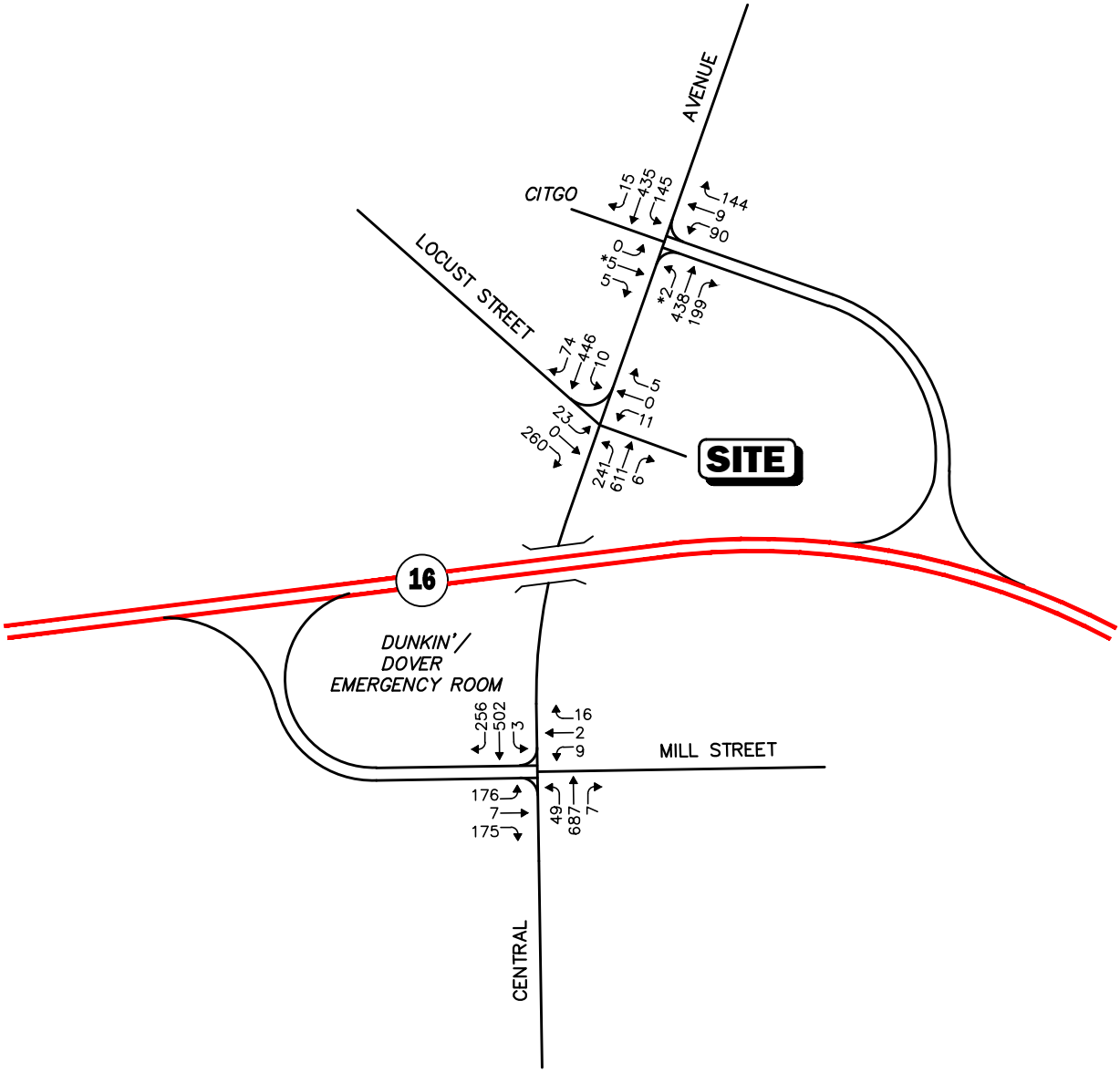
Not To Scale

Figure 17

Vanasse & Associates inc

2026 Build
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes

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* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

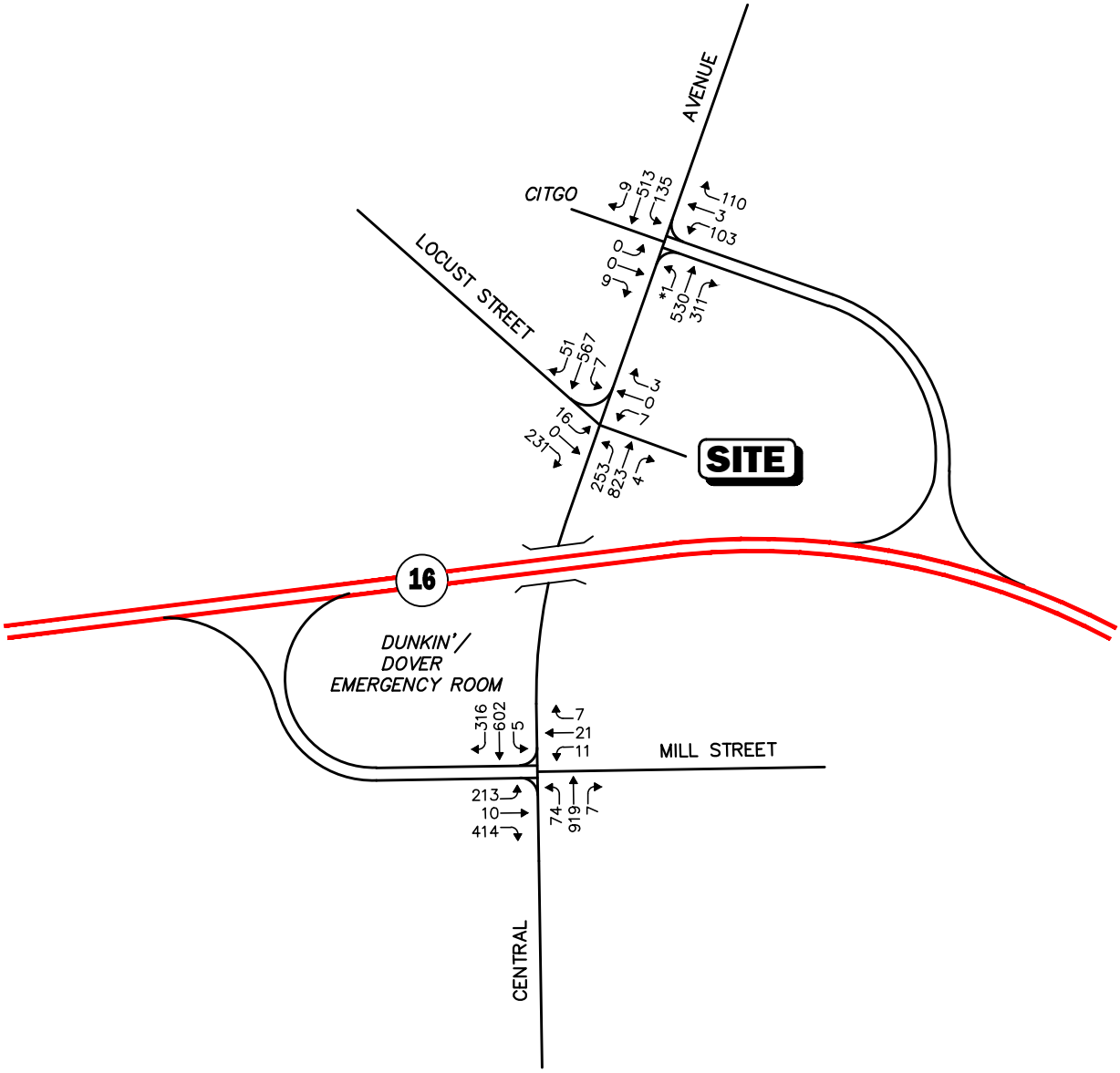
Not To Scale

Figure 18

Vanasse & Associates inc

2026 Build
Peak-Month
Saturday Midday
Peak-Hour Traffic Volumes

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* Illegal movement.
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

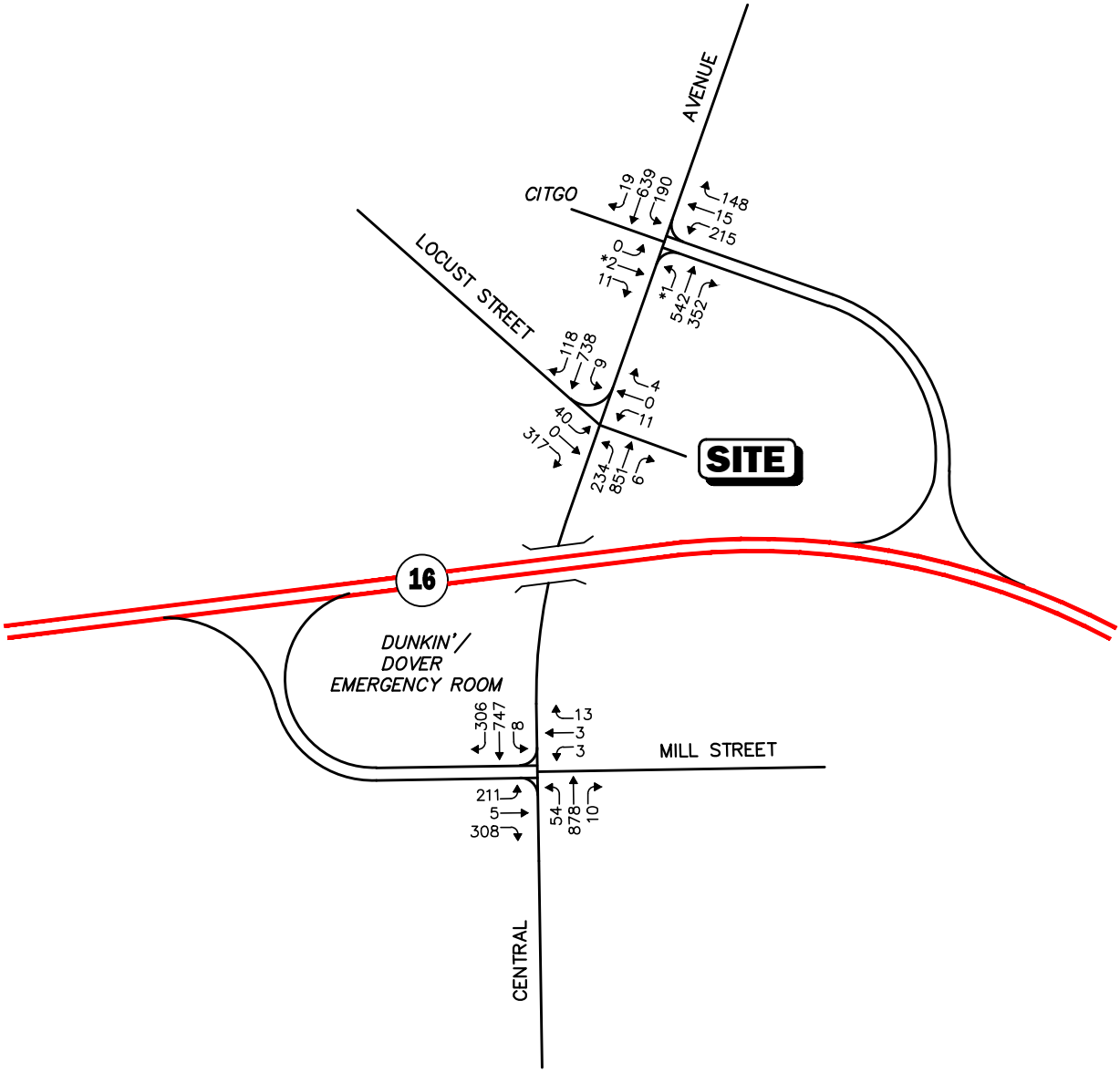
Not To Scale

Figure 19

Vanasse & Associates inc

2036 Build
Peak-Month
Weekday Morning
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

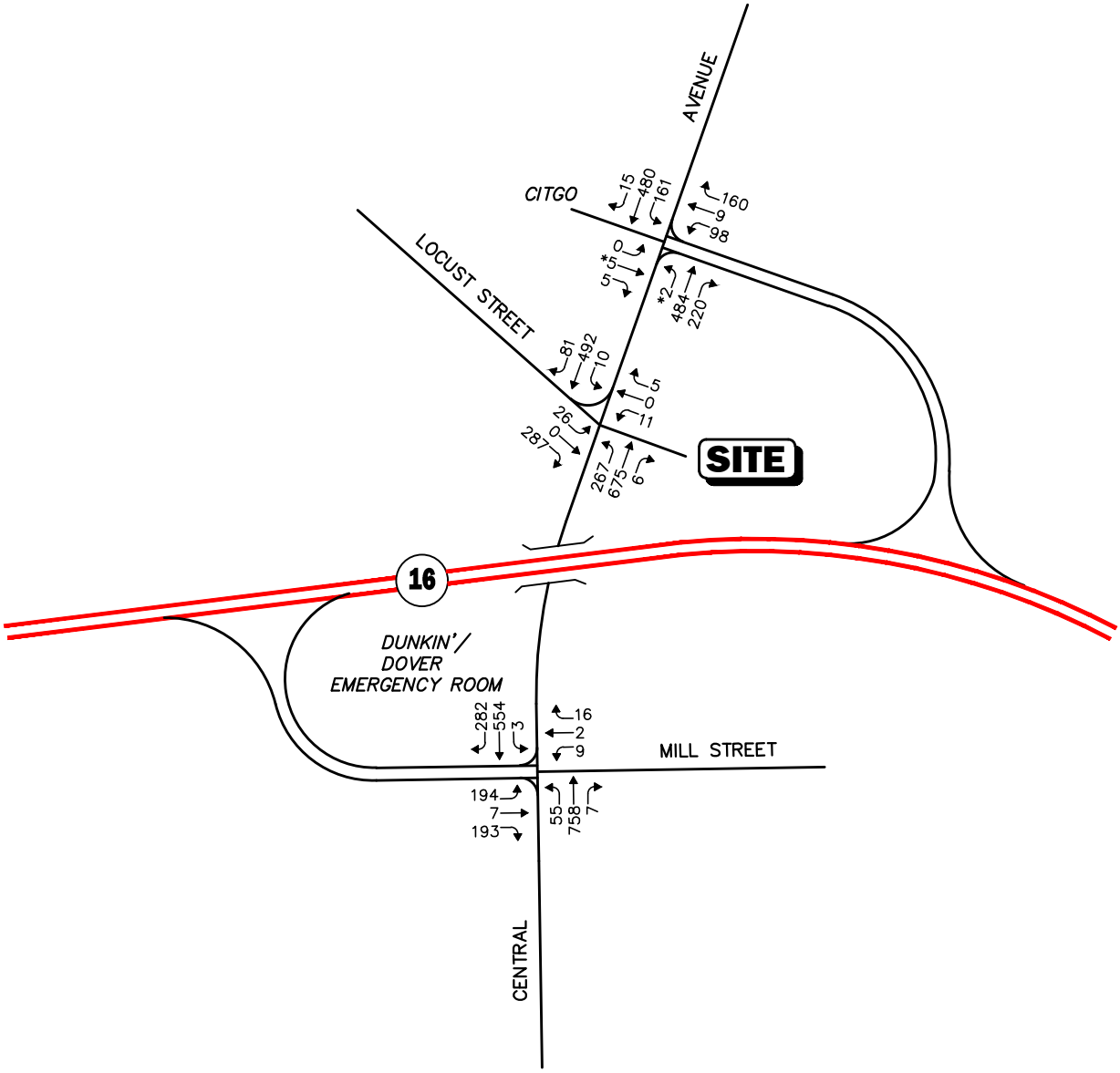
Not To Scale

Figure 20

Vanasse & Associates inc

2036 Build
Peak-Month
Weekday Evening
Peak-Hour Traffic Volumes

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*** Illegal movement.**
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 21

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2026 Build
Peak-Month
Saturday Midday
Peak-Hour Traffic Volumes

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Table 5
PEAK-MONTH PEAK-HOUR TRAFFIC-VOLUME INCREASES[a]

Location/Peak Hour	2026 No-Build	2026 Build	2036 No-Build	2036 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
Central Avenue, north of Citgo Driveway:						
Weekday Morning	1,178	1,177	1,298	1,297	-1	0.1/0.1
Weekday Evening	1,395	1,394	1,539	1,538	-1	0.1/0.1
Saturday Midday	1,179	1,177	1,302	1,300	-2	0.2/0.2
Central Avenue, South of Mill Street:						
Weekday Morning	1,836	1,838	2,025	2,027	2	0.1/0.1
Weekday Evening	1,808	1,813	1,995	2,000	5	0.3/0.3
Saturday Midday	1,425	1,429	1,572	1,576	4	0.3/0.3

[a]Two-way traffic flow in vehicles per hour (vph).

As shown in Table 5, Project-related traffic-volume increases external to the study area relative to 2026 and 2036 No-Build conditions are anticipated to range from -1 to 5 vehicles or -0.1 to 0.3 percent during the peak periods.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the proposed site driveway intersection with Locust Street and Central Avenue in accordance with NHDOT and the American Association of State Highway and Transportation Officials (AASHTO)[4] recommendations. For this evaluation, the required 400-foot "all-season safe sight distance" required by the NHDOT Driveway Permit Policy[5] was also included in this study. Stopping sight distance (SSD) and intersection sight distance (ISD) measurements were also performed. In brief, SSD is the distance recommended to be provided by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD is the sight distance recommended to be provided to a driver entering or crossing an intersecting roadway in order to be perceived by an on-coming vehicle and not require the on-coming vehicle to need to reduce their speed to less than 70 percent of their initial speed.

Table 6 summarizes the sight distances available at the driveway location.

[4]*A Policy on Geometric Design of Highway and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.

[5]NHDOT Policy for Permitting Driveways on State Highways, Item 8.a, Driveway Limitation, p. 16.

Table 6
SIGHT DISTANCE MEASUREMENTS[a]

Intersection/Sight Distance Measurement	Recommended Minimum Distances (Feet) AASHTO (Based on Vehicle Speeds)[b]	NHDOT All-Season Safe Sight Distance[c]	Measured
Central Avenue at the Proposed Site Driveway			
Stopping Sight Distance:			
Central Avenue approaching from the north	190	--	500+
Central Avenue approaching from the south	180	--	500+
Intersection Sight Distance:			
Looking to the north from the driveway	320	400	500+
Looking to the south from the driveway	310	400	500+

[a]Recommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.
[b]Central Avenue: 28 mph northbound and 29 mph southbound.
[c]As defined in the NHDOT Driveway Permit Policy (Page 16).
[d]Values shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control.
[e]Sight distance if vegetation within the sight triangle is trimmed back.

As shown in Table 6, the available lines of sight at the proposed site driveway meet the NHDOT's requirements for sight distance. In addition, the measured sight distance at the sight driveway exceed AASHTO standards based on the observed vehicle speeds along Central Avenue.

TRAFFIC OPERATIONS ANALYSIS

Six levels of service[6] are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best-operating conditions and LOS F representing congested or constrained operating conditions.

Following NHDOT Synchro guidelines,[7] under the future 2026 Opening-Year Build and 2036 Design-Year Build conditions, a peak-hour factor (PHF) of 0.90 was applied to lanes where calculations indicated a PHF below 0.90, as well as at intersections, where capacity is being increased through geometric improvements. The truck percentages at all analysis conditions were adjusted to the approach weighted average with the removal of the volumes at the approach with truck percentages above 8 percent.

Analysis Results

Level-of-service analyses were conducted for 2025 Existing, 2026 Opening-Year No-Build, 2026 Opening-Year Build, 2036 Design-Year No-Build, and 2036 Design-Year Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Table 7.

[6]The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition;* Transportation Research Board; Washington, DC; 2016.
[7]NHDOT Synchro Inputs Checklist, Revised August 16, 2021.

Signalized Intersection Analysis Results

Route 108 at Route 16 Southbound Ramp and Mill Street

The intersection is anticipated to operate at LOS D or better during all analysis periods. When comparing the 2026 No-Build to 2026 Build, minimal delays are reported. In the 2036 conditions, overall delays due to project generated traffic increase by 0.5 seconds or less, with vehicle queues increasing by up to 1 vehicle.

Route 108 at Locust Street and Project Site Driveway

The intersection is anticipated to operate at LOS C or better through all analysis periods. In comparing no-build to build conditions, delays are shown to increase by up to 1.1 second under any analysis period.

Route 108 at Route 16 Northbound Ramp and Citgo Driveway

The intersection was shown to operate at varying level of services throughout the day, with observed LOS B to C in the weekday morning and Saturday midday peak hours and LOS D to E in the weekday evening peak hours. The existing conditions show that the Route 16 northbound ramps operate at capacity, with LOS F and queues ranging from 16-20 vehicles. Increases to overall intersection delay due to project generated traffic is up to 3.2 seconds in the weekday evening peak hours and less than 2 seconds in the weekday morning and Saturday midday peak hours.

Table 7
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak-Hour/Movement	2025 Existing				2026 Opening-Year No-Build				2026 Opening-Year Build				2036 Design-Year No-Build				2036 Design-Year Build			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 108 at Route 16 Southbound Ramp and Mill Street																				
Weekday Morning:																				
Route 16 SB Off-Ramp EB LT/TH	0.80	63.3	E	256/333	0.81	64.3	E	260/337	0.78	68.2	E	205/364	0.74	60.4	E	221/415	0.74	60.1	E	221/417
Route 108 SB Off-Ramp EB RT	0.38	37.3	D	23/46	0.40	37.6	D	30/60	0.27	41.5	D	0/51	0.30	38.0	D	0/52	0.30	37.9	D	0/52
Mill Street WB LT/TH	0.10	41.0	D	30/59	0.10	41.0	D	30/59	0.10	47.0	D	27/63	0.09	42.9	D	26/63	0.09	42.7	D	26/63
Mill Street WB RT	0.01	39.8	D	0/0	0.01	39.8	D	0/0	0.01	45.9	D	0/0	0.01	41.9	D	0/0	0.01	41.7	D	0/0
Route 108 NB LT	0.17	15.7	B	26/74	0.17	15.8	B	26/74	0.15	12.2	B	21/74	0.19	14.8	B	26/81	0.19	14.9	B	26/81
Route 108 NB TH/RT	0.92	44.2	D	645/1281	0.93	46.0	D	663/1305	0.82	28.6	C	506/1315	0.95	47.9	D	693/1518	0.96	48.3	D	698/1518
Route 108 SB LT	0.13	73.8	E	5/20	0.13	73.8	E	5/20	0.13	73.8	E	5/20	0.13	73.8	E	5/20	0.13	73.8	E	5/20
Route 108 SB TH	0.31	21.7	C	147/257	0.32	21.9	C	153/267	0.29	16.9	B	131/261	0.34	20.4	C	160/292	0.34	20.6	C	162/293
Route 108 SB RT	0.19	20.3	C	0/59	0.19	20.4	C	0/60	0.20	16.1	B	0/59	0.22	19.0	B	0/61	0.22	19.2	B	0/61
Overall	--	**37.0**	**D**	--	--	**37.8**	**D**	--	--	**30.0**	**C**	--	--	**36.9**	**D**	--	--	**37.0**	**D**	--
Weekday Evening:																				
Route 16 SB Off-Ramp EB LT/TH	0.79	71.9	E	199/331	0.79	71.5	E	200/335	0.79	71.4	E	201/345	0.78	67.4	E	215/390	0.78	66.1	E	217/396
Route 108 SB Off-Ramp EB RT	0.20	43.3	D	0/45	0.20	43.2	D	0/46	0.20	43.1	D	0/48	0.22	40.8	D	0/49	0.22	40.4	D	0/49
Mill Street WB LT/TH	0.02	48.4	D	6/21	0.02	48.1	D	6/21	0.02	48.0	D	5/19	0.02	45.5	D	5/19	0.02	45.0	D	5/19
Mill Street WB RT	0.01	48.2	D	0/0	0.01	47.9	D	0/0	0.01	47.9	D	0/0	0.01	45.4	D	0/0	0.01	44.9	D	0/0
Route 108 NB LT	0.13	11.3	B	14/56	0.13	11.5	B	15/56	0.12	11.5	B	14/57	0.16	13.3	B	17/63	0.16	13.6	B	17/63
Route 108 NB TH/RT	0.78	24.9	C	459/1170	0.80	26.1	C	483/1205	0.75	23.6	C	425/1228	0.85	31.5	C	564/1408	0.86	32.8	C	578/1414
Route 108 SB LT	0.21	74.9	E	9/29	0.21	74.9	E	9/29	0.21	74.9	E	9/29	0.21	74.9	E	9/29	0.21	74.9	E	9/29
Route 108 SB TH	0.34	15.7	B	162/326	0.35	15.9	B	166/334	0.35	16.0	B	167/333	0.40	18.5	B	204/381	0.41	18.9	B	207/382
Route 108 SB RT	0.19	14.1	B	0/55	0.19	14.2	B	0/56	0.19	14.3	B	0/56	0.21	16.1	B	0/59	0.21	16.5	B	0/59
Overall	--	**27.3**	**C**	--	--	**27.7**	**C**	--	--	**26.8**	**C**	--	--	**29.9**	**C**	--	--	**30.4**	**C**	--
Saturday Midday:																				
Route 16 SB Off-Ramp EB LT/TH	0.78	72.7	E	185/292	0.78	72.7	E	185/292	0.78	72.2	E	187/297	0.79	70.3	E	201/336	0.78	69.6	E	203/343
Route 108 SB Off-Ramp EB RT	0.12	43.7	D	0/39	0.12	43.7	D	0/39	0.12	43.5	D	0/39	0.13	41.7	D	0/41	0.13	41.4	D	0/41
Mill Street WB LT/TH	0.06	50.1	D	12/28	0.06	50.1	D	12/28	0.04	49.7	D	10/29	0.04	47.8	D	9/29	0.04	47.4	D	9/29
Mill Street WB RT	0.01	49.7	D	0/0	0.01	49.7	D	0/0	0.01	49.3	D	0/0	0.01	47.5	D	0/0	0.01	47.1	D	0/0
Route 108 NB LT	0.11	10.1	B	13/58	0.11	10.1	B	13/58	0.10	10.1	B	13/58	0.12	11.3	B	16/64	0.13	11.5	B	16/64
Route 108 NB TH/RT	0.63	18.1	B	295/924	0.64	18.4	B	304/953	0.63	18.3	B	300/965	0.71	22.1	C	388/1123	0.72	22.6	C	397/1129
Route 108 SB LT	0.10	73.5	E	4/16	0.10	73.5	E	4/16	0.08	73.3	E	3/14	0.08	73.3	E	3/14	0.08	73.3	E	3/14
Route 108 SB TH	0.27	13.9	B	113/236	0.27	14.0	B	116/241	0.26	14.0	B	111/245	0.29	15.6	B	133/274	0.30	15.8	B	135/275
Route 108 SB RT	0.19	13.3	B	0/43	0.19	13.4	B	0/43	0.18	13.4	B	0/56	0.20	14.7	B	0/58	0.20	15.0	B	0/58
Overall	--	**24.2**	**C**	--	--	**24.2**	**C**	--	--	**24.3**	**C**	--	--	**25.9**	**C**	--	--	**26.1**	**C**	--

See notes at the end of table.

Table 7 (CONTINUED)
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak-Hour/Movement	2025 Existing				2026 Opening-Year No-Build				2026 Opening-Year Build				2036 Design-Year No-Build				2036 Design-Year Build			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 108 at Locust Street and Project Site Driveway																				
Weekday Morning:																				
Locust Street EB LT/TH	0.35	72.1	E	16/42	0.35	72.1	E	16/42	0.32	71.4	E	15/40	0.30	69.1	E	17/46	0.28	68.6	E	16/44
Locust Street EB RT	0.16	50.8	D	0/50	0.16	50.4	D	0/49	0.16	50.4	D	0/49	0.18	45.3	D	0/45	0.18	45.3	D	0/45
Project Site Driveway WB LT/TH	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.14	68.5	E	7/25	0.00	0.0	A	0/0	0.11	66.5	A	7/25
Project Site Driveway WB RT	0.00	66.9	E	0/0	0.00	66.9	E	0/0	0.00	66.9	E	0/0	0.00	65.4	E	0/0	0.00	65.4	E	0/0
Route 108 NB LT	0.38	4.6	A	0/117	0.38	4.8	A	0/118	0.38	4.8	A	0/119	0.45	7.8	A	27/133	0.45	7.8	A	27/134
Route 108 NB TH/RT	0.49	3.7	A	0/498	0.51	3.8	A	0/521	0.51	3.8	A	0/526	0.56	4.8	A	140/628	0.56	4.8	A	141/633
Route 108 SB LT	0.00	7.1	A	0/6	0.00	7.2	A	0/6	0.02	7.3	A	1/13	0.01	9.5	A	1/7	0.02	9.7	A	2/14
Route 108 SB TH/RT	0.43	11.5	B	141/515	0.47	11.8	B	147/537	0.47	11.8	B	147/540	0.56	16.6	B	296/697	0.56	16.6	B	296/699
Overall	--	**12.7**	**B**	--	--	**12.7**	**B**	--	--	**12.9**	**B**	--	--	**14.3**	**B**	--	--	**14.5**	**B**	--
Weekday Evening:																				
Locust Street EB LT/TH	0.42	67.3	E	36/74	0.42	67.3	E	36/74	0.40	66.9	E	35/73	0.45	67.3	E	40/80	0.43	67.0	E	39/79
Locust Street EB RT	0.20	46.7	D	0/48	0.20	46.6	D	0/48	0.20	46.7	D	0/48	0.22	45.1	D	0/50	0.22	45.2	D	0/50
Project Site Driveway WB LT/TH	0.11	63.2	E	12/15	0.11	63.2	E	12/15	0.12	63.4	E	11/32	0.04	62.1	E	4/18	0.11	62.9	E	11/31
Project Site Driveway WB RT	0.00	62.3	E	0/0	0.00	62.3	E	0/0	0.00	62.4	E	0/0	0.00	61.8	E	0/0	0.00	61.9	E	0/0
Route 108 NB LT	0.46	14.1	B	24/110	0.48	15.3	B	24/111	0.48	15.2	B	24/111	0.59	29.2	C	55/197	0.59	29.0	C	53/196
Route 108 NB TH/RT	0.48	4.9	A	123/504	0.49	5.0	A	127/519	0.50	5.0	A	128/525	0.55	5.7	A	156/628	0.55	5.7	A	159/636
Route 108 SB LT	0.00	9.0	A	0/4	0.00	9.0	A	0/4	0.02	9.2	A	3/18	0.00	9.9	A	0/4	0.03	10.1	A	3/18
Route 108 SB TH/RT	0.70	20.0	B	412/1107	0.72	20.6	C	432/1144	0.72	20.5	C	431/1144	0.81	26.6	C	568/1325	0.81	26.5	C	568/1325
Overall	--	**19.0**	**B**	--	--	**19.3**	**B**	--	--	**19.1**	**B**	--	--	**22.8**	**C**	--	--	**22.7**	**C**	--
Saturday Midday:																				
Locust Street EB LT/TH	0.36	69.0	E	24/56	0.36	69.0	E	24/56	0.36	69.1	E	24/56	0.36	69.1	E	24/56	0.39	69.4	E	26/60
Locust Street EB RT	0.19	50.4	D	0/51	0.19	50.1	D	0/51	0.19	50.1	D	0/53	0.19	55.5	E	0/54	0.21	46.5	D	0/49
Project Site Driveway WB LT/TH	0.06	65.3	E	5/13	0.06	65.3	E	5/13	0.15	66.2	E	11/32	0.15	66.2	E	11/32	0.15	66.0	E	11/32
Project Site Driveway WB RT	0.00	64.8	E	0/0	0.00	64.8	E	0/0	0.00	64.8	E	0/0	0.00	64.8	E	0/0	0.00	64.6	E	0/0
Route 108 NB LT	0.37	4.7	A	25/121	0.38	4.9	A	25/122	0.38	4.9	A	25/122	0.39	4.3	A	25/122	0.43	6.9	A	30/138
Route 108 NB TH/RT	0.38	3.4	A	79/342	0.39	3.5	A	81/351	0.39	3.5	A	81/355	0.39	3.5	A	81/355	0.43	3.8	A	98/415
Route 108 SB LT	0.01	7.4	A	1/7	0.01	7.5	A	1/7	0.02	7.6	A	3/16	0.02	5.6	A	2/16	0.02	9.3	A	3/19
Route 108 SB TH/RT	0.44	11.5	B	198/480	0.45	11.9	B	207/497	0.45	11.9	B	207/497	0.42	8.8	A	152/496	0.52	15.4	B	269/650
Overall	--	**15.3**	**B**	--	--	**15.3**	**B**	--	--	**15.4**	**B**	--	--	**15.2**	**B**	--	--	**16.3**	**B**	--
Route 108 at Route 16 NB Ramp and Citgo Driveway																				
Weekday Morning:																				
Route 16 NB Ramp WB LT/TH/RT	0.70	55.3	E	123/204	0.71	55.8	E	126/209	0.72	56.2	E	132/217	0.75	58.6	E	141/233	0.77	59.3	E	147/254
Route 108 NB TH/RT	0.72	17.9	B	376/618	0.74	18.8	B	399/651	0.75	19.4	B	410/653	0.83	24.1	C	520/881	0.84	25.0	C	534/884
Route 108 SB LT	0.26	5.9	A	23/44	0.27	6.1	A	23/44	0.27	6.3	A	24/44	0.32	7.1	A	28/48	0.32	7.3	A	29/48
Route 108 SB TH/RT	0.36	5.2	A	112/178	0.36	5.3	A	116/182	0.37	5.5	A	120/181	0.41	5.9	A	144/208	0.41	6.1	A	148/207
Overall	--	**17.9**	**B**	--	--	**18.5**	**B**	--	--	**18.9**	**B**	--	--	**21.6**	**C**	--	--	**22.3**	**C**	--
Weekday Evening:																				
Route 16 NB Ramp WB LT/TH/RT	1.16	>80	F	404/508	1.21	>80	F	417/517	1.08	>80	F	347/551	1.25	>80	F	395/598	1.29	>80	F	412/617
Route 108 NB TH/RT	0.87	32.0	C	496/703	0.87	32.3	C	507/729	0.87	32.3	C	508/730	0.94	39.1	D	630/974	0.94	38.8	D	630/975
Route 108 SB LT	0.43	10.9	B	40/61	0.44	10.8	B	40/61	0.44	10.8	B	40/61	0.50	11.0	B	43/67	0.50	10.9	B	43/67
Route 108 SB TH/RT	0.48	9.6	A	183/241	0.49	9.4	A	186/250	0.49	9.4	A	186/250	0.53	9.0	A	212/291	0.53	9.0	A	212/291
Overall	--	**45.8**	**D**	--	--	**49.0**	**D**	--	--	**38.4**	**D**	--	--	**52.1**	**D**	--	--	**55.3**	**E**	--
Saturday Midday:																				
Route 16 NB Ramp WB LT/TH/RT	0.71	53.7	D	144/227	0.74	55.8	E	147/241	0.76	56.3	E	157/278	0.76	56.3	E	157/278	0.78	56.7	E	173/332
Route 108 NB TH/RT	0.61	16.2	B	294/485	0.62	16.3	B	309/467	0.62	16.9	B	318/455	0.62	16.9	B	318/455	0.71	21.0	C	412/533
Route 108 SB LT	0.31	6.6	A	34/61	0.31	6.6	A	35/55	0.29	6.8	A	33/53	0.29	6.8	A	33/53	0.36	8.3	A	41/57
Route 108 SB TH/RT	0.37	6.2	A	128/193	0.38	6.1	A	134/178	0.35	6.2	A	126/173	0.35	6.2	A	126/173	0.40	7.2	A	159/191
Overall	--	**18.0**	**B**	--	--	**18.3**	**B**	--	--	**19.2**	**B**	--	--	**19.2**	**B**	--	--	**21.5**	**C**	--

[a]Volume to capacity ratio.
[b]Delay in seconds per vehicle.
[c]Level of service.
[d]95th percentile queue length in feet.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

RECOMMENDATIONS

On-Site Recommendations

The Project site will maintain the existing curb cut onto Central Avenue. No signal modifications would be required as part of the project. The following recommendations are offered with respect to the design and operation of the Project site driveway:

- The driveway should be restriped to show one left-through lane and one right-turn lane. Prior to occupancy, signal detection should be reviewed to confirm that the movement will actuate after construction.

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.

- Signs and landscaping adjacent to the Project site driveway should be designed and maintained to remain below 24 inches above the driveway so as not to restrict lines of sight.

- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sightlines.

CONCLUSIONS

VAI has prepared this TIS in order to identify traffic impacts associated with a proposed hotel development to be located at 47 Central Avenue (NH Route 18) in Dover, New Hampshire. We have the following conclusions:

- The Project is expected to generate approximately 372 vehicle trips on an average weekday and 470 vehicle trips on an average Saturday (two-way, 24-hour volume), with 21 vehicle trips (11 entering and 10 exiting) during the weekday morning peak hour, 30 vehicle trips (15 entering and 15 exiting) during the weekday evening peak hour, and 32 vehicle trips (16 entering and 16 exiting) during the Saturday midday peak hour.

- When compared to the by-right fast-food restaurant use, the proposed hotel is expected to generate approximately 90 percent fewer trips during a typical weekday and typical Saturday, with comparable reductions during the peak hours.

- Traffic-volume increases related to the Project, external to the study, are anticipated to range from -2 to 5 vehicles or -0.1 to 0.3 percent, during peak periods.

- Lines of sight at the Project site driveway intersection were found to exceed the recommended minimum distance for safe operation based on the measured 85th percentile vehicle speeds.

- The Project will not have a significant impact on motorist delays or vehicle queuing at signalized intersections compared to anticipated future conditions without the Project, with a maximum increase in overall intersection delay of less than 3.2 seconds.

As documented in this study, Project-related traffic increases will not result in significant increases in overall traffic volumes or traffic delays within the study area. The hotel represents a decrease in site traffic activity compared with the previous and by-right use of the site. Project-related traffic can be adequately accommodated within the existing infrastructure with minimal impact on operations within the study area.

APPENDIX

PROJECT SITE PLAN
TRAFFIC COUNT DATA
SEASONAL ADJUSTMENT DATA
VEHICLE SPEED MEASUREMENTS
GROWTH RATE DATA
TRIP GENERATION DATA
REMOVE EXISTING TRIPS NETWORKS
CAPACITY ANALYSIS

PROJECT SITE PLAN



N

PLAN

SITE PLAN

0 15 30 60

GRAPHIC SCALE

December 12, 2025

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PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

OPECHEE
CONSTRUCTION CORPORATION

TRAFFIC COUNT DATA

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	18	135	1	13	2	12	1	63	43	0	1	1	290
07:15 AM	19	77	5	14	1	22	0	86	67	0	0	2	293
07:30 AM	17	105	1	10	1	22	0	89	54	0	0	2	301
07:45 AM	28	98	2	24	0	21	0	103	58	0	0	3	337
Total	82	415	9	61	4	77	1	341	222	0	1	8	1221
08:00 AM	29	108	3	18	1	20	1	83	76	0	0	0	339
08:15 AM	26	97	1	15	1	30	0	117	62	0	0	3	352
08:30 AM	23	91	2	18	1	16	0	106	47	0	0	2	306
08:45 AM	18	89	4	18	1	20	1	92	33	0	0	3	279
Total	96	385	10	69	4	86	2	398	218	0	0	8	1276
Grand Total	178	800	19	130	8	163	3	739	440	0	1	16	2497
Apprch %	17.9	80.2	1.9	43.2	2.7	54.2	0.3	62.5	37.2	0	5.9	94.1	
Total %	7.1	32	0.8	5.2	0.3	6.5	0.1	29.6	17.6	0	0	0.6	
Cars	174	777	17	126	8	160	3	723	408	0	1	16	2413
% Cars	97.8	97.1	89.5	96.9	100	98.2	100	97.8	92.7	0	100	100	96.6
Trucks	4	23	2	4	0	3	0	16	32	0	0	0	84
% Trucks	2.2	2.9	10.5	3.1	0	1.8	0	2.2	7.3	0	0	0	3.4

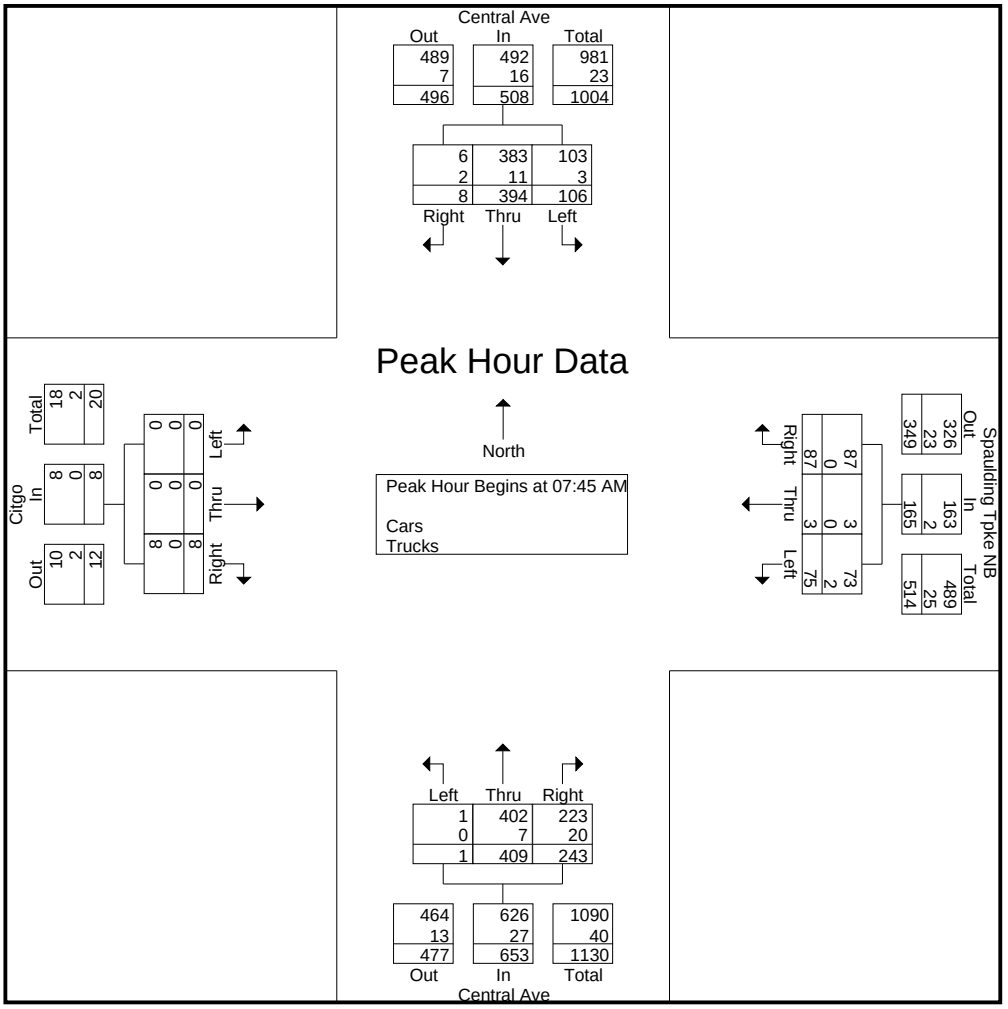
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	28	98	2	128	**24**	0	21	45	0	103	58	161	0	0	**3**	**3**	337
08:00 AM	**29**	**108**	**3**	**140**	18	**1**	20	39	**1**	83	**76**	160	0	0	0	0	339
08:15 AM	26	97	1	124	15	1	**30**	**46**	0	**117**	62	**179**	0	0	3	3	**352**
08:30 AM	23	91	2	116	18	1	16	35	0	106	47	153	0	0	2	2	306
Total Volume	106	394	8	508	75	3	87	165	1	409	243	653	0	0	8	8	1334
% App. Total	20.9	77.6	1.6		45.5	1.8	52.7		0.2	62.6	37.2		0	0	100		
PHF	.914	.912	.667	.907	.781	.750	.725	.897	.250	.874	.799	.912	.000	.000	.667	.667	.947
Cars	103	383	6	492	73	3	87	163	1	402	223	626	0	0	8	8	1289
% Cars	97.2	97.2	75.0	96.9	97.3	100	100	98.8	100	98.3	91.8	95.9	0	0	100	100	96.6
Trucks	3	11	2	16	2	0	0	2	0	7	20	27	0	0	0	0	45
% Trucks	2.8	2.8	25.0	3.1	2.7	0	0	1.2	0	1.7	8.2	4.1	0	0	0	0	3.4

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

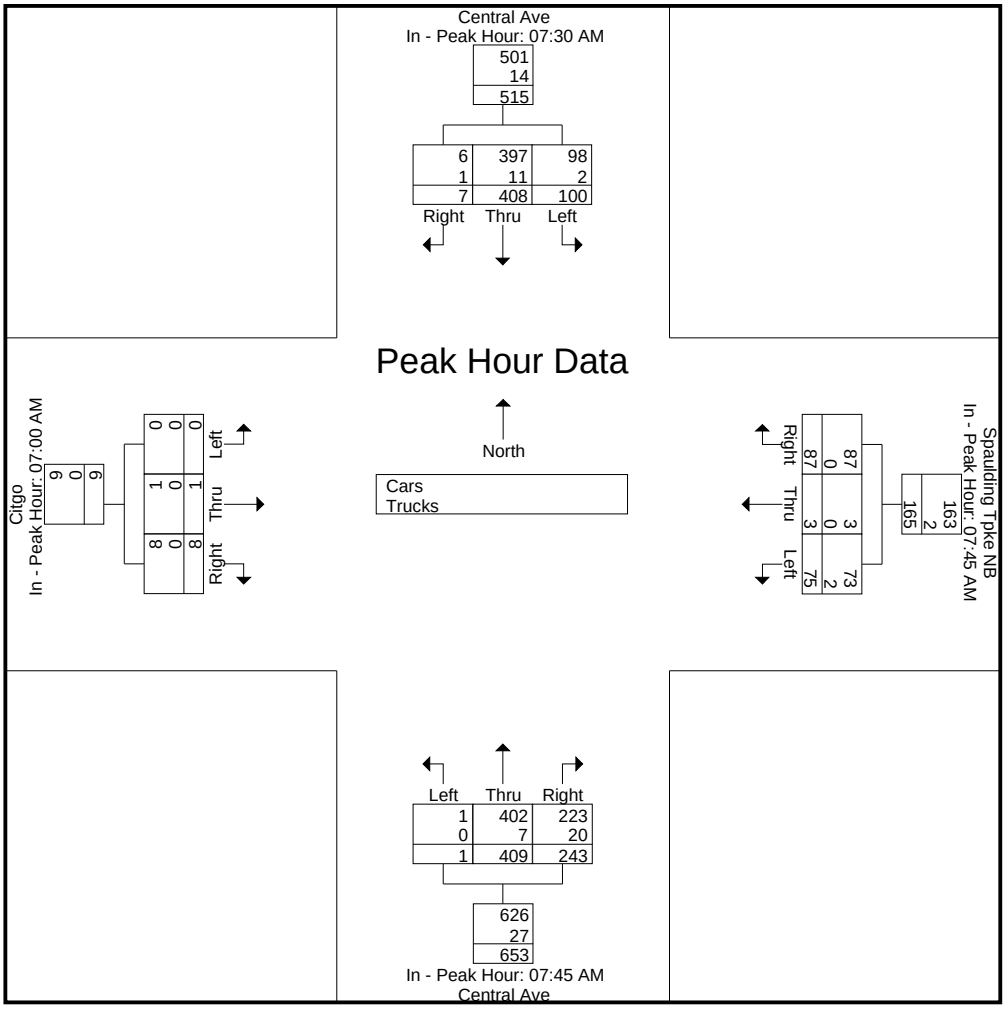
	07:30 AM				07:45 AM				07:45 AM				07:00 AM			
+0 mins.	17	105	1	123	**24**	0	21	45	0	103	58	161	0	**1**	1	2
+15 mins.	28	98	2	128	18	**1**	20	39	**1**	83	**76**	160	0	0	2	2
+30 mins.	**29**	**108**	**3**	**140**	15	1	**30**	**46**	0	**117**	62	**179**	0	0	2	2
+45 mins.	26	97	1	124	18	1	16	35	0	106	47	153	0	0	**3**	**3**
Total Volume	100	408	7	515	75	3	87	165	1	409	243	653	0	1	8	9
% App. Total	19.4	79.2	1.4		45.5	1.8	52.7		0.2	62.6	37.2		0	11.1	88.9	
PHF	.862	.944	.583	.920	.781	.750	.725	.897	.250	.874	.799	.912	.000	.250	.667	.750
Cars	98	397	6	501	73	3	87	163	1	402	223	626	0	1	8	9
% Cars	98	97.3	85.7	97.3	97.3	100	100	98.8	100	98.3	91.8	95.9	0	100	100	100
Trucks	2	11	1	14	2	0	0	2	0	7	20	27	0	0	0	0
% Trucks	2	2.7	14.3	2.7	2.7	0	0	1.2	0	1.7	8.2	4.1	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025

Groups Printed- Cars

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	18	129	1	12	2	12	1	62	41	0	1	1	280
07:15 AM	19	77	5	13	1	20	0	84	59	0	0	2	280
07:30 AM	17	103	1	10	1	22	0	86	54	0	0	2	296
07:45 AM	27	94	1	23	0	21	0	100	53	0	0	3	322
Total	81	403	8	58	4	75	1	332	207	0	1	8	1178
08:00 AM	29	106	3	17	1	20	1	82	66	0	0	0	325
08:15 AM	25	94	1	15	1	30	0	116	61	0	0	3	346
08:30 AM	22	89	1	18	1	16	0	104	43	0	0	2	296
08:45 AM	17	85	4	18	1	19	1	89	31	0	0	3	268
Total	93	374	9	68	4	85	2	391	201	0	0	8	1235
Grand Total	174	777	17	126	8	160	3	723	408	0	1	16	2413
Apprch %	18	80.3	1.8	42.9	2.7	54.4	0.3	63.8	36	0	5.9	94.1	
Total %	7.2	32.2	0.7	5.2	0.3	6.6	0.1	30	16.9	0	0	0.7	

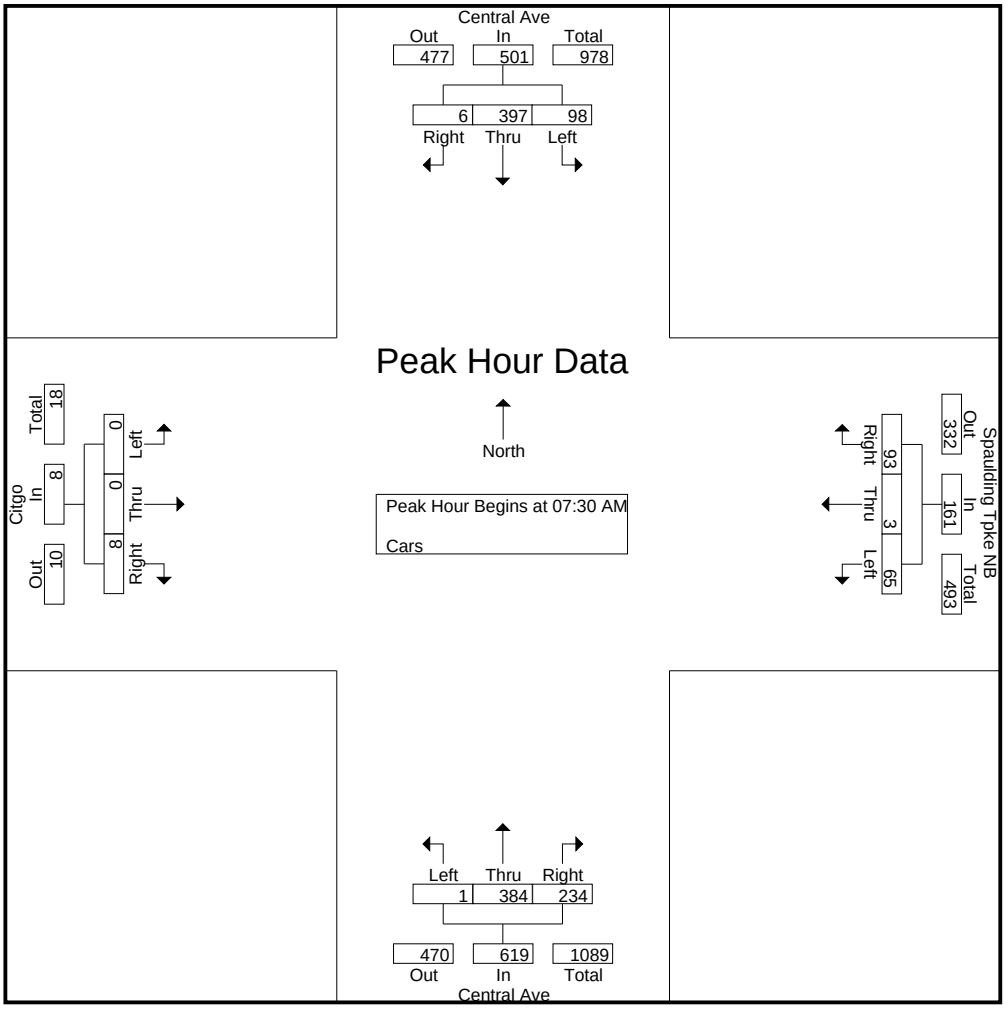
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	103	1	121	10	**1**	22	33	0	86	54	140	0	0	2	2	296
07:45 AM	27	94	1	122	**23**	0	21	44	0	100	53	153	0	0	**3**	**3**	322
08:00 AM	**29**	**106**	**3**	**138**	17	1	20	38	**1**	82	**66**	149	0	0	0	0	325
08:15 AM	25	94	1	120	15	1	**30**	**46**	0	**116**	61	**177**	0	0	3	3	**346**
Total Volume	98	397	6	501	65	3	93	161	1	384	234	619	0	0	8	8	1289
% App. Total	19.6	79.2	1.2		40.4	1.9	57.8		0.2	62	37.8		0	0	100		
PHF	.845	.936	.500	.908	.707	.750	.775	.875	.250	.828	.886	.874	.000	.000	.667	.667	.931

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

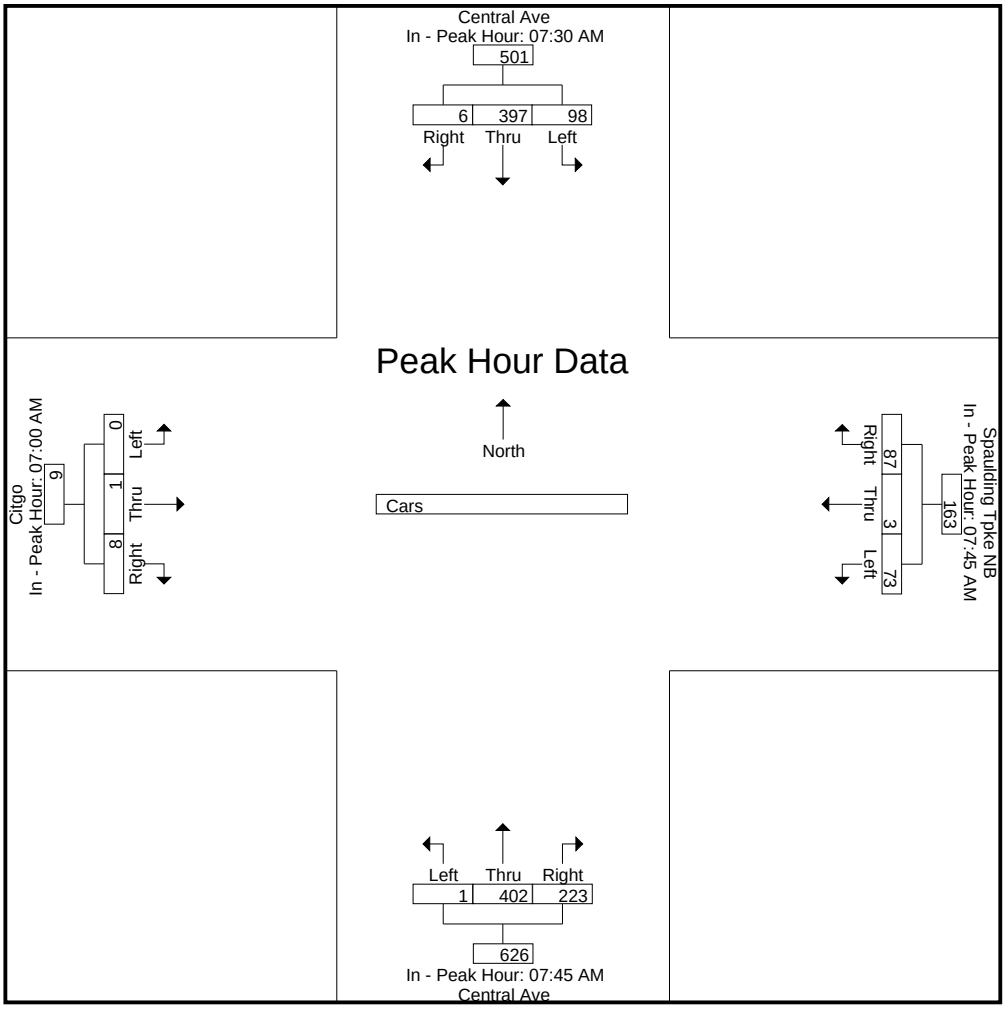
	07:30 AM				07:45 AM				07:45 AM				07:00 AM			
+0 mins.	17	103	1	121	**23**	0	21	44	0	100	53	153	0	**1**	1	2
+15 mins.	27	94	1	122	17	**1**	20	38	**1**	82	**66**	149	0	0	2	2
+30 mins.	**29**	**106**	**3**	**138**	15	1	**30**	**46**	0	**116**	61	**177**	0	0	2	2
+45 mins.	25	94	1	120	18	1	16	35	0	104	43	147	0	0	**3**	**3**
Total Volume	98	397	6	501	73	3	87	163	1	402	223	626	0	1	8	9
% App. Total	19.6	79.2	1.2		44.8	1.8	53.4		0.2	64.2	35.6		0	11.1	88.9	
PHF	.845	.936	.500	.908	.793	.750	.725	.886	.250	.866	.845	.884	.000	.250	.667	.750

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 7

Groups Printed- Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	6	0	1	0	0	0	1	2	0	0	0	10
07:15 AM	0	0	0	1	0	2	0	2	8	0	0	0	13
07:30 AM	0	2	0	0	0	0	0	3	0	0	0	0	5
07:45 AM	1	4	1	1	0	0	0	3	5	0	0	0	15
Total	1	12	1	3	0	2	0	9	15	0	0	0	43
08:00 AM	0	2	0	1	0	0	0	1	10	0	0	0	14
08:15 AM	1	3	0	0	0	0	0	1	1	0	0	0	6
08:30 AM	1	2	1	0	0	0	0	2	4	0	0	0	10
08:45 AM	1	4	0	0	0	1	0	3	2	0	0	0	11
Total	3	11	1	1	0	1	0	7	17	0	0	0	41
Grand Total	4	23	2	4	0	3	0	16	32	0	0	0	84
Apprch %	13.8	79.3	6.9	57.1	0	42.9	0	33.3	66.7	0	0	0	
Total %	4.8	27.4	2.4	4.8	0	3.6	0	19	38.1	0	0	0	

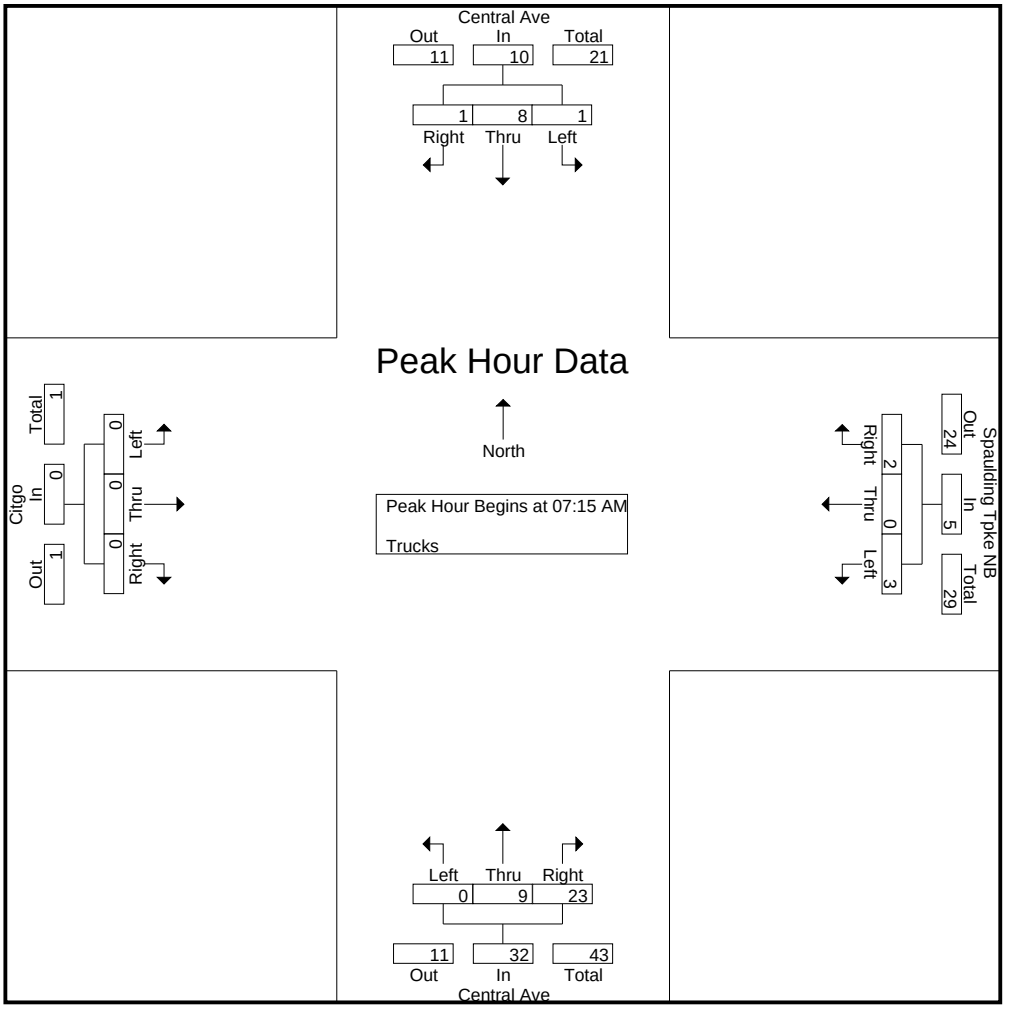
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	**1**	0	**2**	**3**	0	2	8	10	0	0	0	0	13
07:30 AM	0	2	0	2	0	0	0	0	0	**3**	0	3	0	0	0	0	5
07:45 AM	**1**	**4**	**1**	**6**	1	0	0	1	0	3	5	8	0	0	0	0	**15**
08:00 AM	0	2	0	2	1	0	0	1	0	1	**10**	**11**	0	0	0	0	14
Total Volume	1	8	1	10	3	0	2	5	0	9	23	32	0	0	0	0	47
% App. Total	10	80	10		60	0	40		0	28.1	71.9		0	0	0		
PHF	.250	.500	.250	.417	.750	.000	.250	.417	.000	.750	.575	.727	.000	.000	.000	.000	.783

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

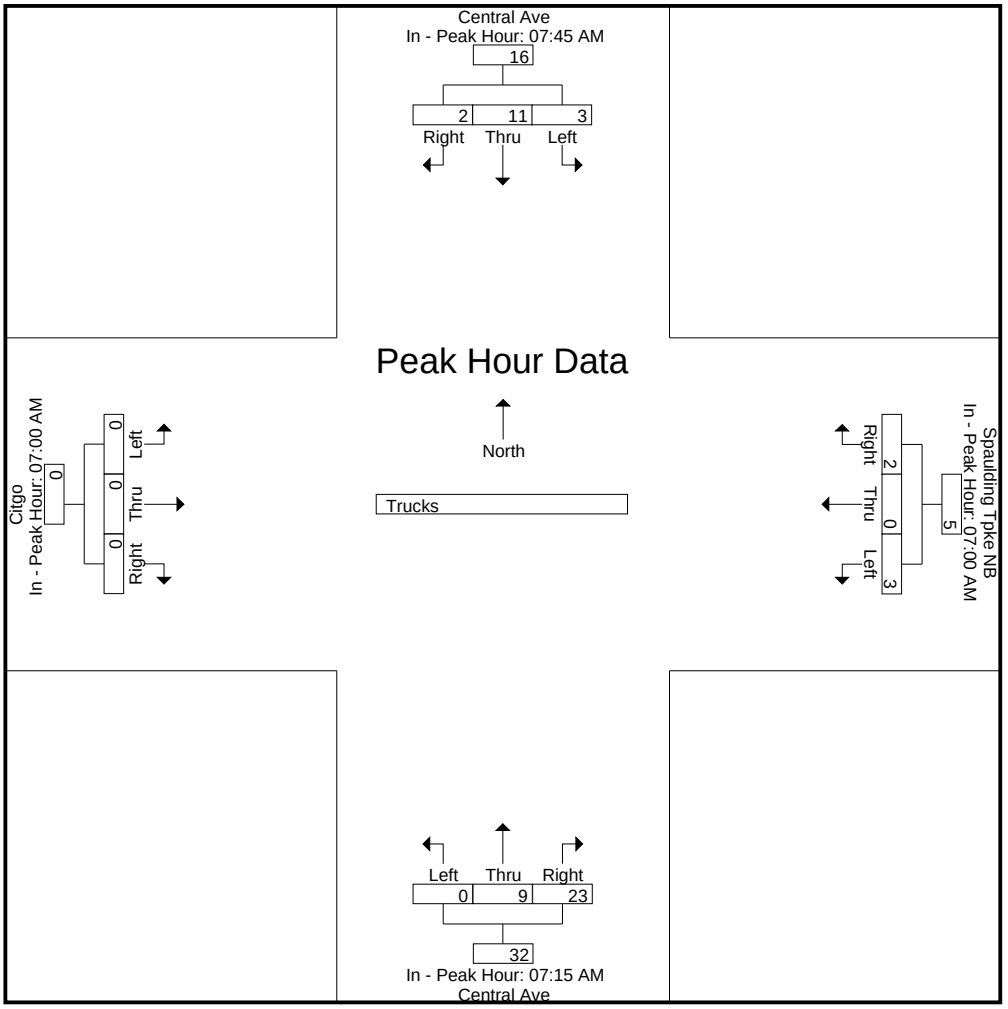
	07:45 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	**1**	**4**	**1**	**6**	**1**	0	0	1	0	2	8	10	0	0	0	0
+15 mins.	0	2	0	2	1	0	**2**	**3**	0	**3**	0	3	0	0	0	0
+30 mins.	1	3	0	4	0	0	0	0	0	3	5	8	0	0	0	0
+45 mins.	1	2	1	4	1	0	0	1	0	1	**10**	**11**	0	0	0	0
Total Volume	3	11	2	16	3	0	2	5	0	9	23	32	0	0	0	0
% App. Total	18.8	68.8	12.5		60	0	40		0	28.1	71.9		0	0	0	
PHF	.750	.688	.500	.667	.750	.000	.250	.417	.000	.750	.575	.727	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 10

Groups Printed- Bikes Peds

	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	7
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

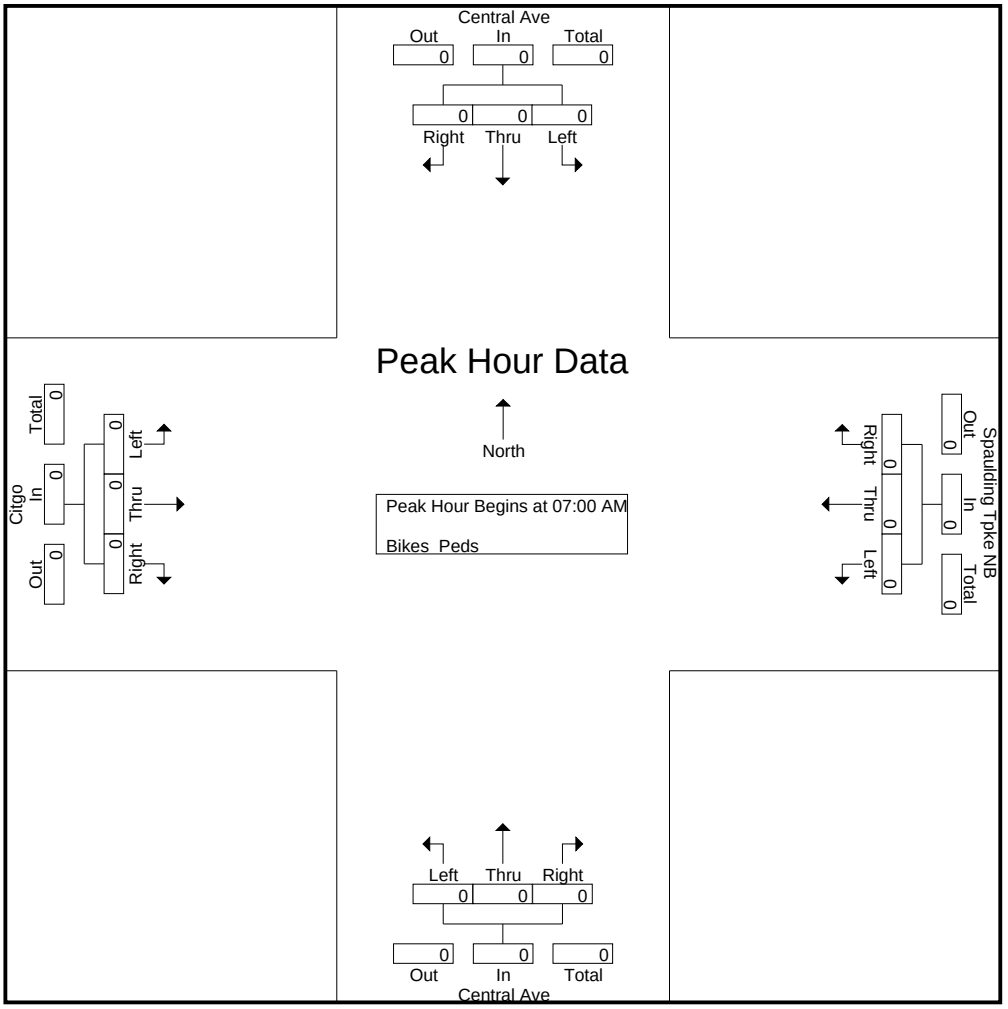
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

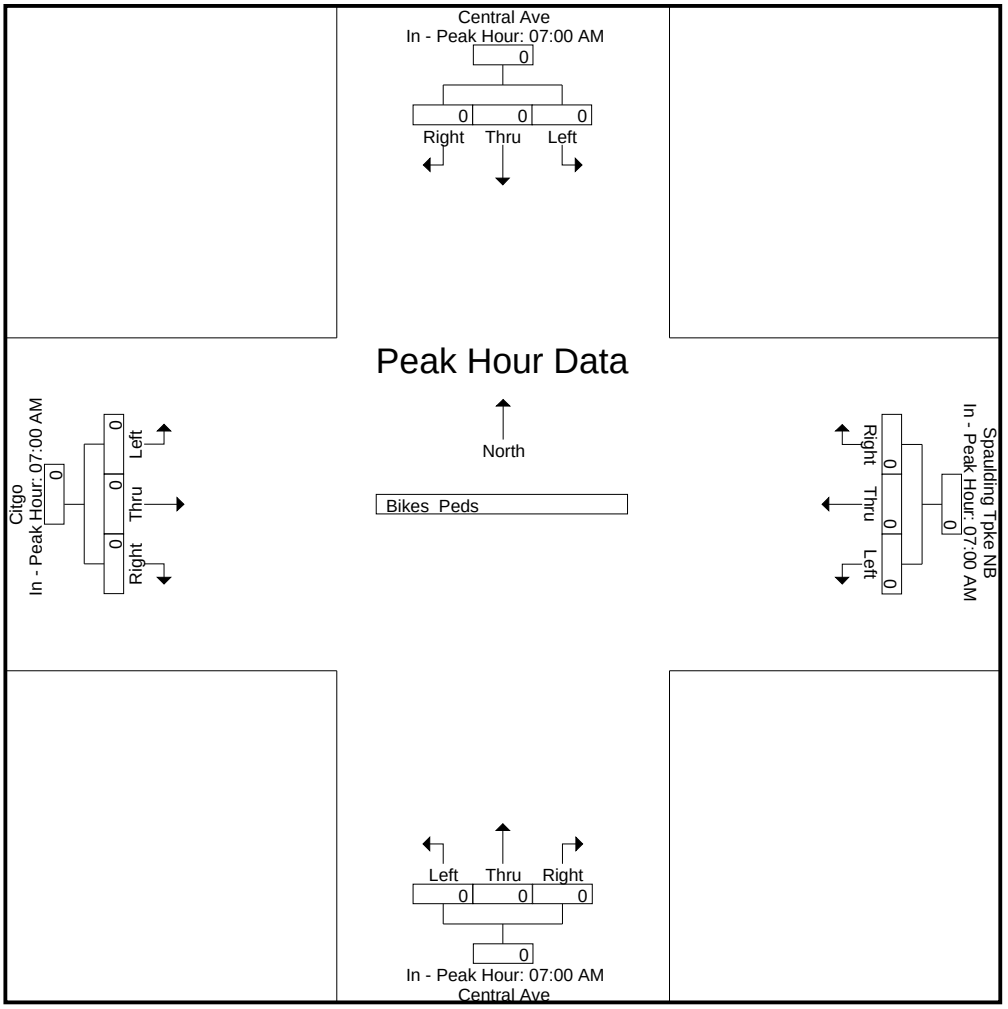
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	52	103	9	36	2	29	0	83	65	0	0	5	384
03:15 PM	51	115	4	31	2	31	1	123	53	0	2	3	416
03:30 PM	35	108	6	35	2	24	0	102	74	0	0	2	388
03:45 PM	45	127	4	43	2	28	0	101	77	0	2	3	432
Total	183	453	23	145	8	112	1	409	269	0	4	13	1620
04:00 PM	37	116	1	31	4	33	0	118	74	0	0	1	415
04:15 PM	37	124	6	46	3	30	1	97	62	0	0	3	409
04:30 PM	33	122	1	31	3	19	0	100	75	0	1	1	386
04:45 PM	42	133	9	54	3	35	0	103	62	0	1	5	447
Total	149	495	17	162	13	117	1	418	273	0	2	10	1657
05:00 PM	47	88	5	30	4	19	0	105	72	0	1	2	373
05:15 PM	37	126	6	35	1	30	0	109	52	0	0	0	396
05:30 PM	34	97	3	32	3	35	0	89	45	0	0	2	340
05:45 PM	22	93	3	45	1	34	0	90	45	0	1	3	337
Total	140	404	17	142	9	118	0	393	214	0	2	7	1446
Grand Total	472	1352	57	449	30	347	2	1220	756	0	8	30	4723
Apprch %	25.1	71.9	3	54.4	3.6	42	0.1	61.7	38.2	0	21.1	78.9	
Total %	10	28.6	1.2	9.5	0.6	7.3	0	25.8	16	0	0.2	0.6	
Cars	468	1337	57	441	30	342	2	1210	751	0	8	30	4676
% Cars	99.2	98.9	100	98.2	100	98.6	100	99.2	99.3	0	100	100	99
Trucks	4	15	0	8	0	5	0	10	5	0	0	0	47
% Trucks	0.8	1.1	0	1.8	0	1.4	0	0.8	0.7	0	0	0	1

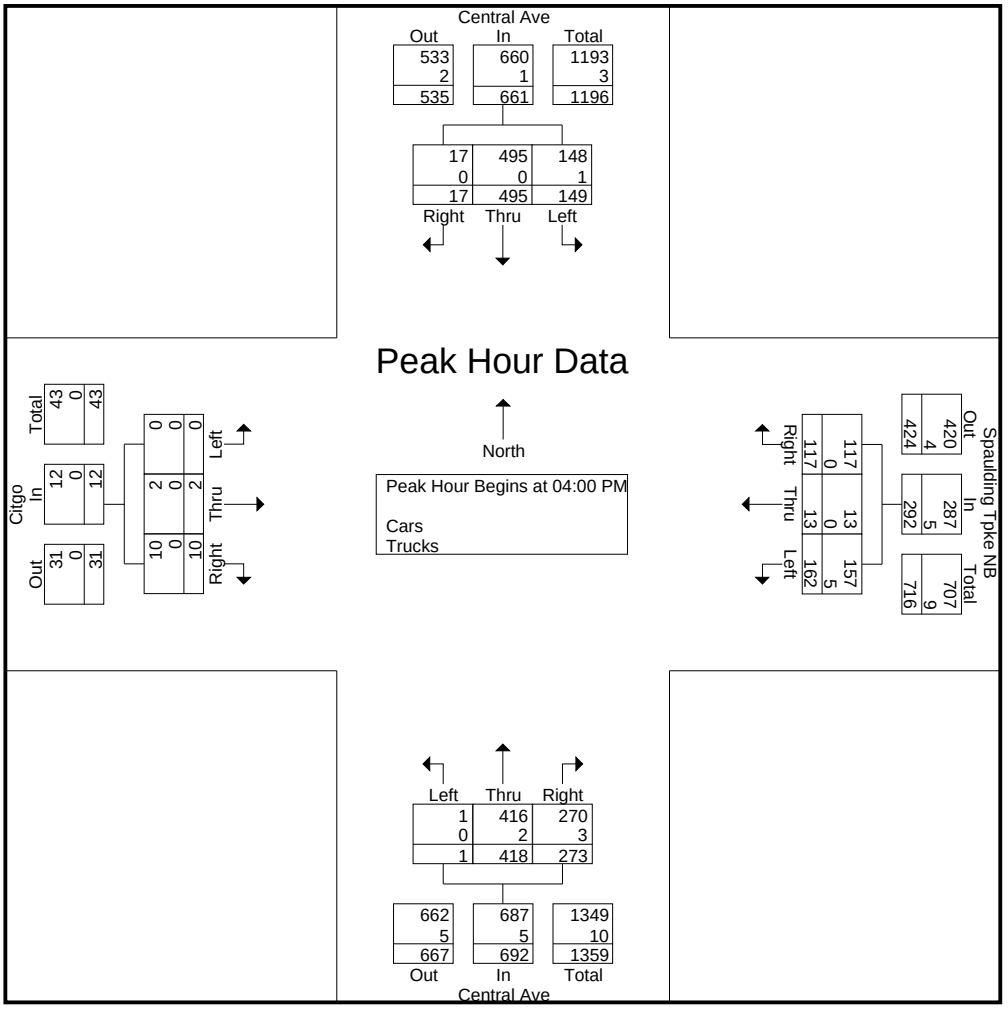
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	37	116	1	154	31	**4**	33	68	0	**118**	74	**192**	0	0	1	1	415
04:15 PM	37	124	6	167	46	3	30	79	**1**	97	62	160	0	0	3	3	409
04:30 PM	33	122	1	156	31	3	19	53	0	100	**75**	175	0	**1**	1	2	386
04:45 PM	**42**	**133**	**9**	**184**	**54**	3	**35**	**92**	0	103	62	165	0	1	**5**	**6**	**447**
Total Volume	149	495	17	661	162	13	117	292	1	418	273	692	0	2	10	12	1657
% App. Total	22.5	74.9	2.6		55.5	4.5	40.1		0.1	60.4	39.5		0	16.7	83.3		
PHF	.887	.930	.472	.898	.750	.813	.836	.793	.250	.886	.910	.901	.000	.500	.500	.500	.927
Cars	148	495	17	660	157	13	117	287	1	416	270	687	0	2	10	12	1646
% Cars	99.3	100	100	99.8	96.9	100	100	98.3	100	99.5	98.9	99.3	0	100	100	100	99.3
Trucks	1	0	0	1	5	0	0	5	0	2	3	5	0	0	0	0	11
% Trucks	0.7	0	0	0.2	3.1	0	0	1.7	0	0.5	1.1	0.7	0	0	0	0	0.7

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

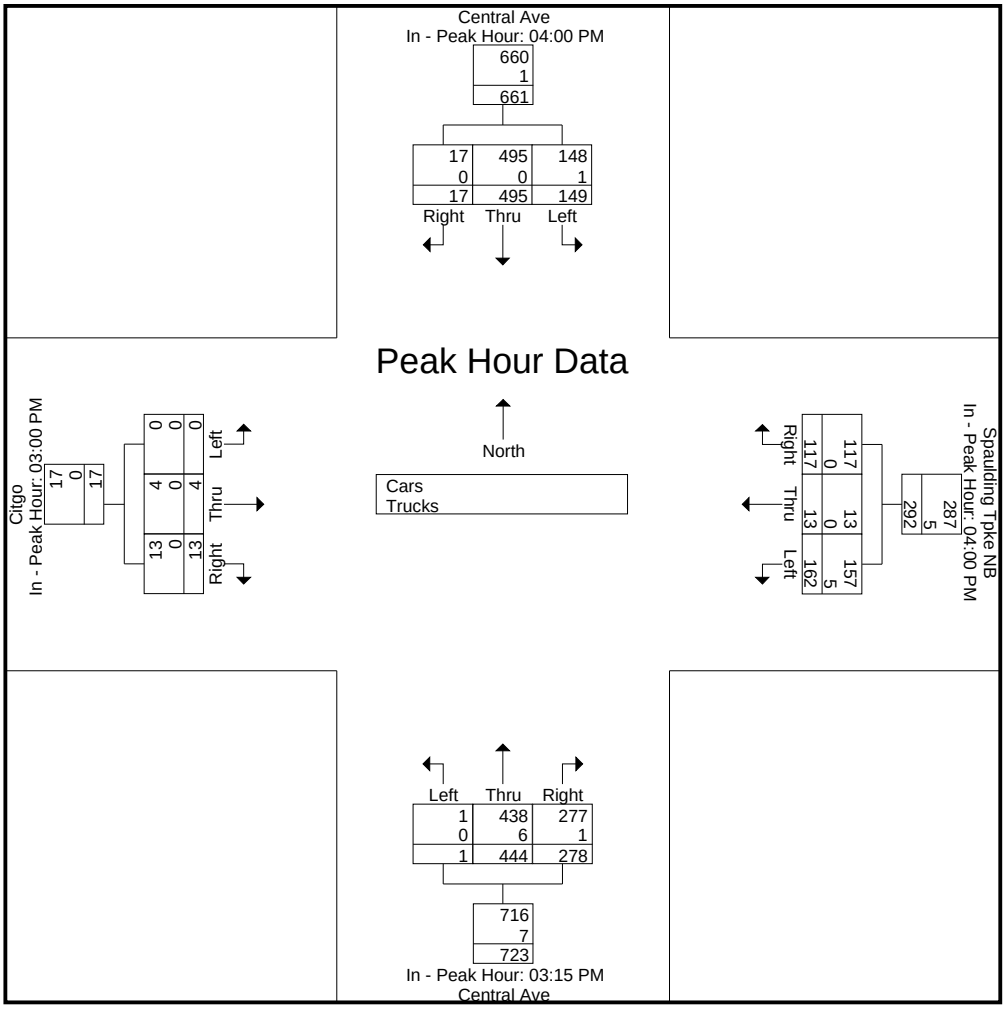
	04:00 PM				04:00 PM				03:15 PM				03:00 PM			
+0 mins.	37	116	1	154	31	**4**	33	68	**1**	**123**	53	177	0	0	**5**	**5**
+15 mins.	37	124	6	167	46	3	30	79	0	102	74	176	0	**2**	3	5
+30 mins.	33	122	1	156	31	3	19	53	0	101	**77**	178	0	0	2	2
+45 mins.	**42**	**133**	**9**	**184**	**54**	3	**35**	**92**	0	118	74	**192**	0	2	3	5
Total Volume	149	495	17	661	162	13	117	292	1	444	278	723	0	4	13	17
% App. Total	22.5	74.9	2.6		55.5	4.5	40.1		0.1	61.4	38.5		0	23.5	76.5	
PHF	.887	.930	.472	.898	.750	.813	.836	.793	.250	.902	.903	.941	.000	.500	.650	.850
Cars	148	495	17	660	157	13	117	287	1	438	277	716	0	4	13	17
% Cars	99.3	100	100	99.8	96.9	100	100	98.3	100	98.6	99.6	99	0	100	100	100
Trucks	1	0	0	1	5	0	0	5	0	6	1	7	0	0	0	0
% Trucks	0.7	0	0	0.2	3.1	0	0	1.7	0	1.4	0.4	1	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	51	100	9	36	2	28	0	81	65	0	0	5	377
03:15 PM	50	111	4	31	2	30	1	119	53	0	2	3	406
03:30 PM	35	106	6	33	2	24	0	101	74	0	0	2	383
03:45 PM	44	125	4	42	2	26	0	101	76	0	2	3	425
Total	180	442	23	142	8	108	1	402	268	0	4	13	1591
04:00 PM	36	116	1	29	4	33	0	117	74	0	0	1	411
04:15 PM	37	124	6	44	3	30	1	97	60	0	0	3	405
04:30 PM	33	122	1	30	3	19	0	99	74	0	1	1	383
04:45 PM	42	133	9	54	3	35	0	103	62	0	1	5	447
Total	148	495	17	157	13	117	1	416	270	0	2	10	1646
05:00 PM	47	87	5	30	4	19	0	105	72	0	1	2	372
05:15 PM	37	125	6	35	1	29	0	108	51	0	0	0	392
05:30 PM	34	96	3	32	3	35	0	89	45	0	0	2	339
05:45 PM	22	92	3	45	1	34	0	90	45	0	1	3	336
Total	140	400	17	142	9	117	0	392	213	0	2	7	1439
Grand Total	468	1337	57	441	30	342	2	1210	751	0	8	30	4676
Apprch %	25.1	71.8	3.1	54.2	3.7	42.1	0.1	61.6	38.3	0	21.1	78.9	
Total %	10	28.6	1.2	9.4	0.6	7.3	0	25.9	16.1	0	0.2	0.6	

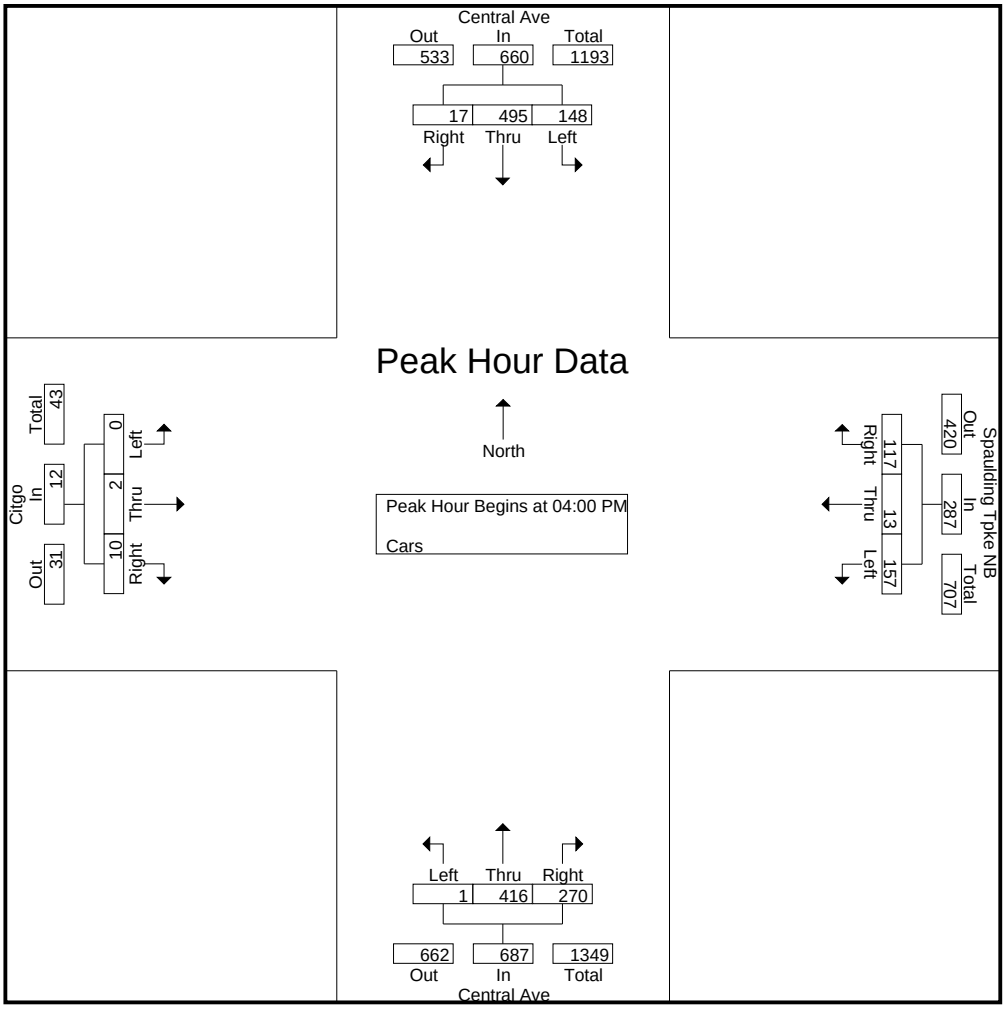
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	36	116	1	153	29	**4**	33	66	0	**117**	**74**	**191**	0	0	1	1	411
04:15 PM	37	124	6	167	44	3	30	77	**1**	97	60	158	0	0	3	3	405
04:30 PM	33	122	1	156	30	3	19	52	0	99	74	173	0	**1**	1	2	383
04:45 PM	**42**	**133**	**9**	**184**	**54**	3	**35**	**92**	0	103	62	165	0	1	**5**	**6**	**447**
Total Volume	148	495	17	660	157	13	117	287	1	416	270	687	0	2	10	12	1646
% App. Total	22.4	75	2.6		54.7	4.5	40.8		0.1	60.6	39.3		0	16.7	83.3		
PHF	.881	.930	.472	.897	.727	.813	.836	.780	.250	.889	.912	.899	.000	.500	.500	.500	.921

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

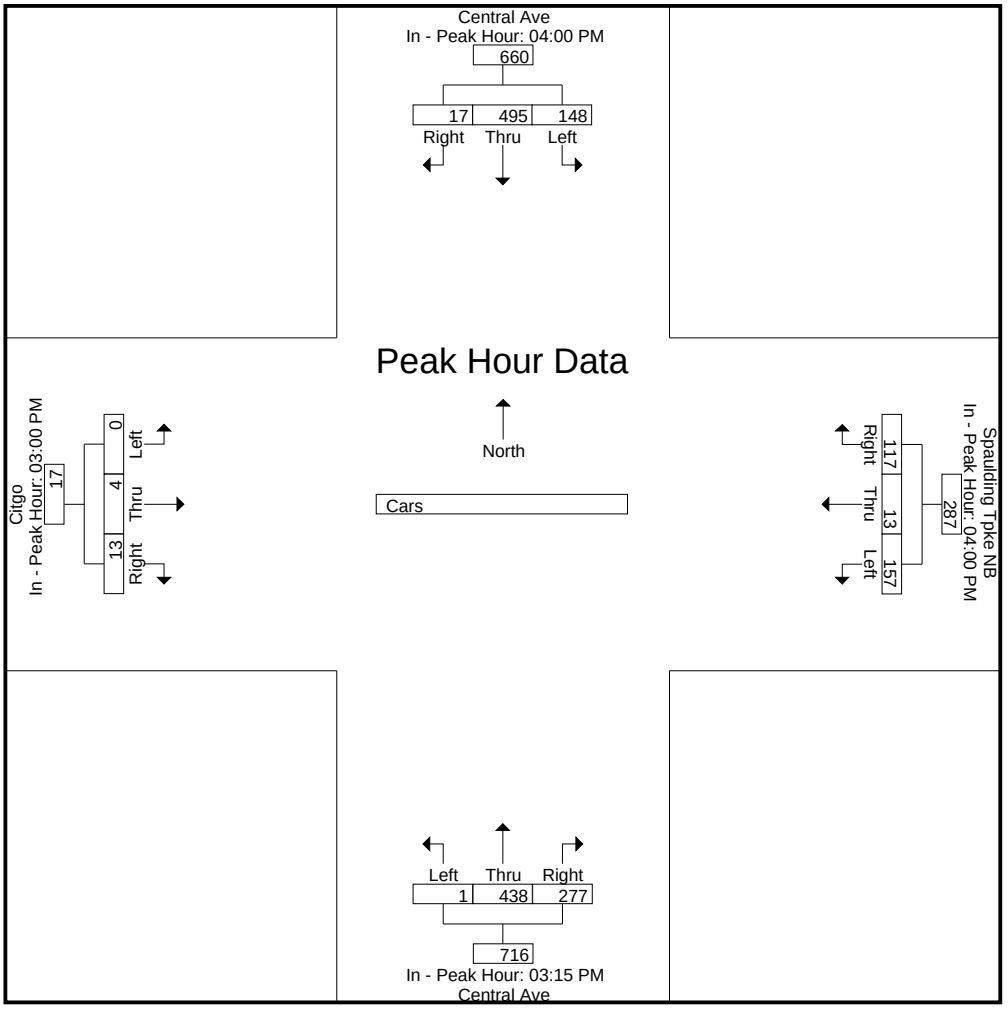
	04:00 PM				04:00 PM				03:15 PM				03:00 PM			
+0 mins.	36	116	1	153	29	**4**	33	66	**1**	**119**	53	173	0	0	**5**	**5**
+15 mins.	37	124	6	167	44	3	30	77	0	101	74	175	0	**2**	3	5
+30 mins.	33	122	1	156	30	3	19	52	0	101	**76**	177	0	0	2	2
+45 mins.	**42**	**133**	**9**	**184**	**54**	3	**35**	**92**	0	117	74	**191**	0	2	3	5
Total Volume	148	495	17	660	157	13	117	287	1	438	277	716	0	4	13	17
% App. Total	22.4	75	2.6		54.7	4.5	40.8		0.1	61.2	38.7		0	23.5	76.5	
PHF	.881	.930	.472	.897	.727	.813	.836	.780	.250	.920	.911	.937	.000	.500	.650	.850

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 7

Groups Printed- Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	1	3	0	0	0	1	0	2	0	0	0	0	7
03:15 PM	1	4	0	0	0	1	0	4	0	0	0	0	10
03:30 PM	0	2	0	2	0	0	0	1	0	0	0	0	5
03:45 PM	1	2	0	1	0	2	0	0	1	0	0	0	7
Total	3	11	0	3	0	4	0	7	1	0	0	0	29
04:00 PM	1	0	0	2	0	0	0	1	0	0	0	0	4
04:15 PM	0	0	0	2	0	0	0	0	2	0	0	0	4
04:30 PM	0	0	0	1	0	0	0	1	1	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	5	0	0	0	2	3	0	0	0	11
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	0	1	0	1	1	0	0	0	4
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	0	1	0	1	1	0	0	0	7
Grand Total	4	15	0	8	0	5	0	10	5	0	0	0	47
Apprch %	21.1	78.9	0	61.5	0	38.5	0	66.7	33.3	0	0	0	
Total %	8.5	31.9	0	17	0	10.6	0	21.3	10.6	0	0	0	

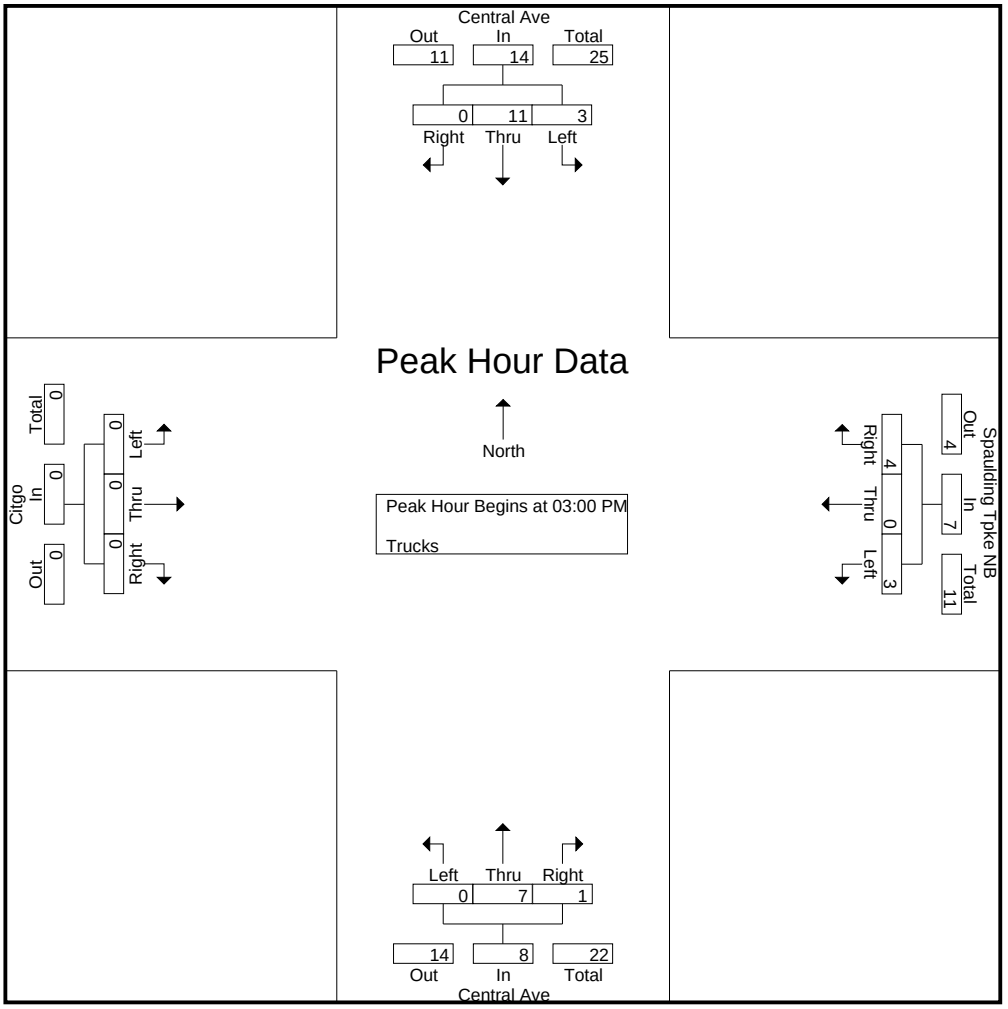
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**1**	3	0	4	0	0	1	1	0	2	0	2	0	0	0	0	7
03:15 PM	1	**4**	0	**5**	0	0	1	1	0	**4**	0	**4**	0	0	0	0	**10**
03:30 PM	0	2	0	2	**2**	0	0	2	0	1	0	1	0	0	0	0	5
03:45 PM	1	2	0	3	1	0	**2**	**3**	0	0	**1**	1	0	0	0	0	7
Total Volume	3	11	0	14	3	0	4	7	0	7	1	8	0	0	0	0	29
% App. Total	21.4	78.6	0		42.9	0	57.1		0	87.5	12.5		0	0	0		
PHF	.750	.688	.000	.700	.375	.000	.500	.583	.000	.438	.250	.500	.000	.000	.000	.000	.725

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

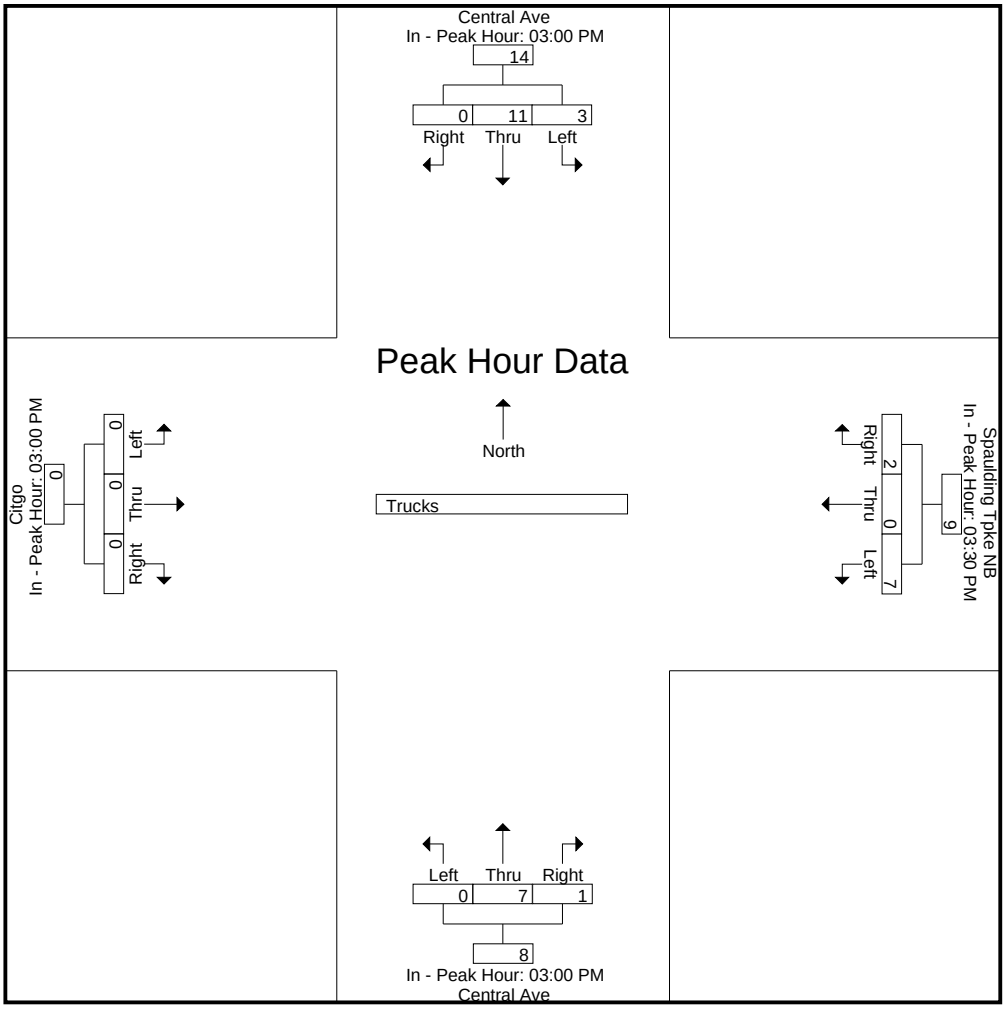
	03:00 PM				03:30 PM				03:00 PM				03:00 PM			
+0 mins.	**1**	3	0	4	**2**	0	0	2	0	2	0	2	0	0	0	0
+15 mins.	1	**4**	0	**5**	1	0	**2**	**3**	0	**4**	0	**4**	0	0	0	0
+30 mins.	0	2	0	2	2	0	0	2	0	1	0	1	0	0	0	0
+45 mins.	1	2	0	3	2	0	0	2	0	0	**1**	1	0	0	0	0
Total Volume	3	11	0	14	7	0	2	9	0	7	1	8	0	0	0	0
% App. Total	21.4	78.6	0		77.8	0	22.2		0	87.5	12.5		0	0	0	
PHF	.750	.688	.000	.700	.875	.000	.250	.750	.000	.438	.250	.500	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 10

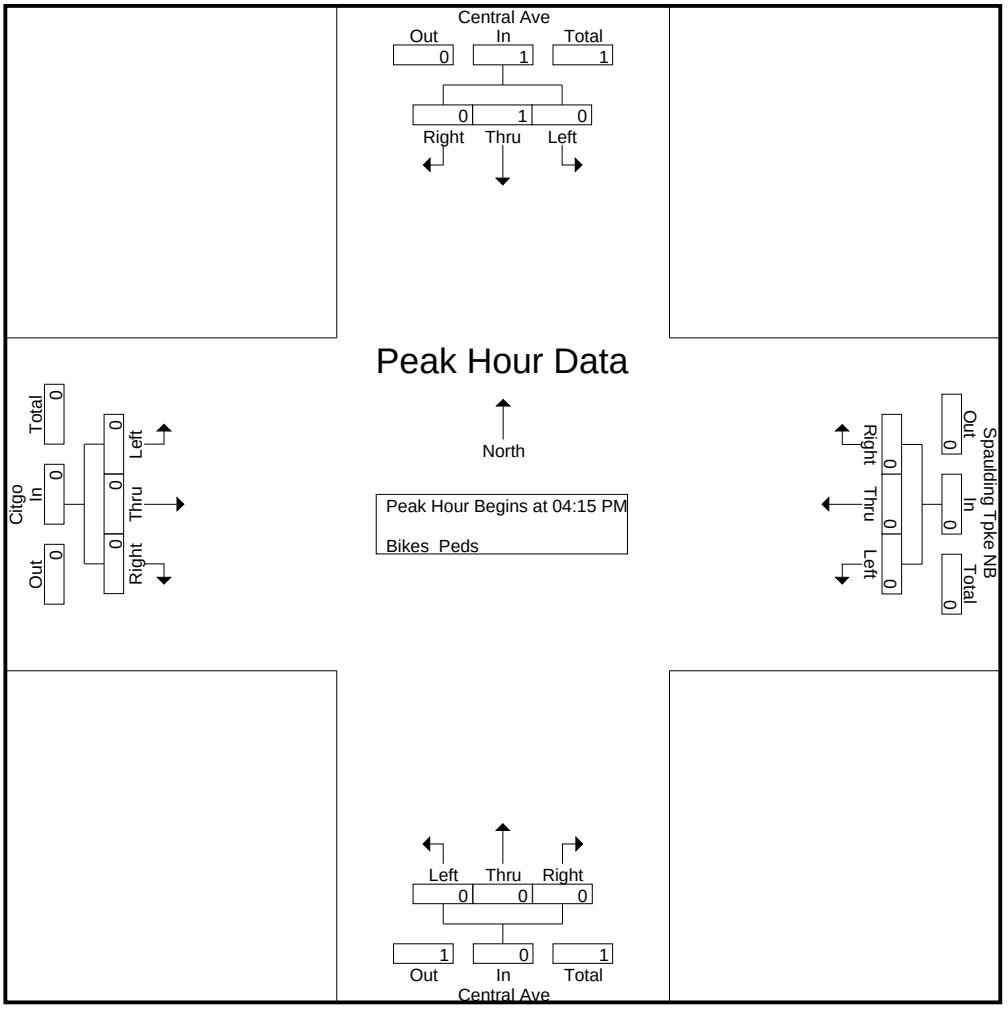
Groups Printed- Bikes Peds

	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	1	6
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0				
Total %	0	100	0		0	0	0		0	0	0		0	0	0		83.3	16.7	

	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

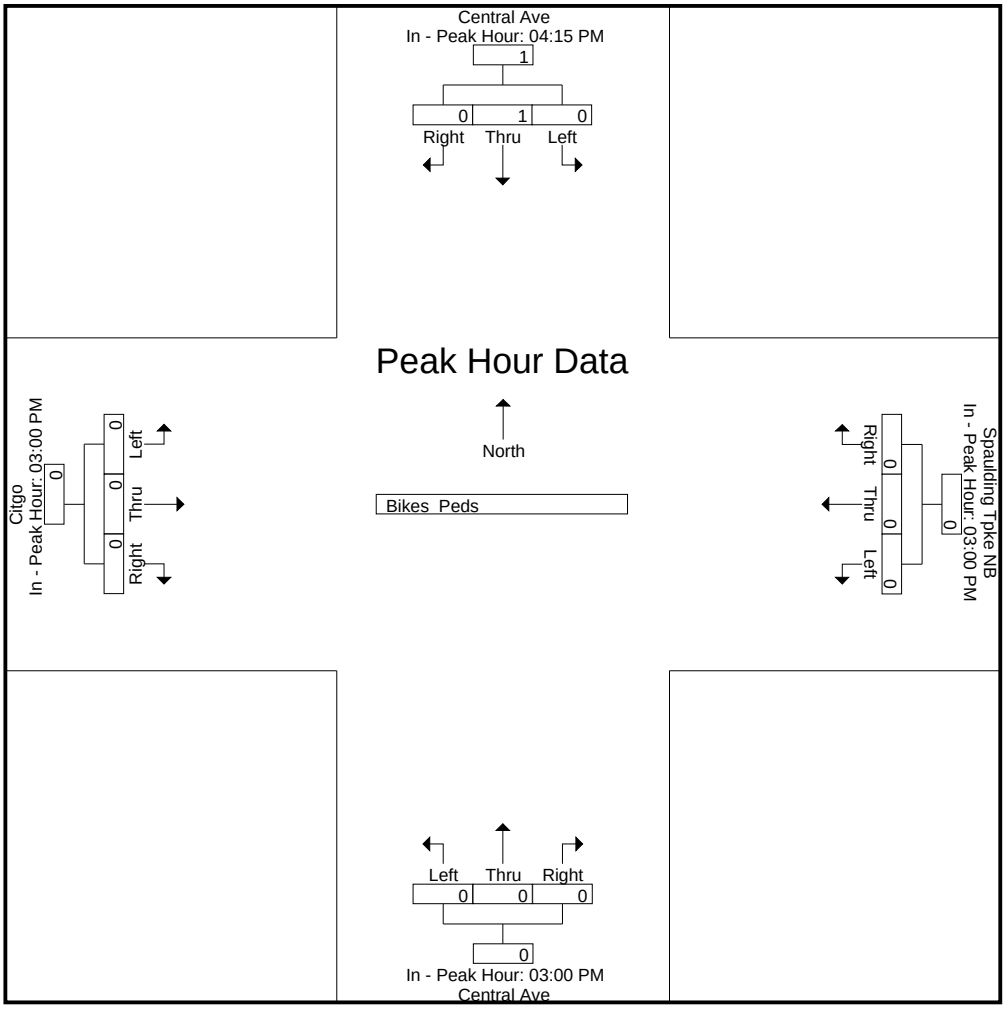
	04:15 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566001
Site Code : 10566001
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	19	103	6	17	1	26	1	108	31	0	0	3	315
11:15 AM	25	79	1	18	1	29	0	100	47	0	0	0	300
11:30 AM	34	91	4	18	1	20	0	91	54	0	0	0	313
11:45 AM	30	90	8	27	3	33	0	89	41	0	0	3	324
Total	108	363	19	80	6	108	1	388	173	0	0	6	1252
12:00 PM	29	94	1	15	0	29	1	93	40	0	0	2	304
12:15 PM	24	82	4	15	2	23	1	95	32	0	1	3	282
12:30 PM	22	93	3	12	2	11	0	86	28	0	3	1	261
12:45 PM	30	94	4	16	2	28	0	99	48	0	0	1	322
Total	105	363	12	58	6	91	2	373	148	0	4	7	1169
01:00 PM	31	67	3	9	2	36	2	103	46	0	1	1	301
01:15 PM	39	108	2	21	2	29	0	93	42	0	1	2	339
01:30 PM	26	87	4	21	2	32	0	81	36	0	2	0	291
01:45 PM	32	104	1	20	2	27	0	62	30	0	1	1	280
Total	128	366	10	71	8	124	2	339	154	0	5	4	1211
Grand Total	341	1092	41	209	20	323	5	1100	475	0	9	17	3632
Apprch %	23.1	74.1	2.8	37.9	3.6	58.5	0.3	69.6	30.1	0	34.6	65.4	
Total %	9.4	30.1	1.1	5.8	0.6	8.9	0.1	30.3	13.1	0	0.2	0.5	
Cars	339	1089	41	206	20	318	5	1093	474	0	8	17	3610
% Cars	99.4	99.7	100	98.6	100	98.5	100	99.4	99.8	0	88.9	100	99.4
Trucks	2	3	0	3	0	5	0	7	1	0	1	0	22
% Trucks	0.6	0.3	0	1.4	0	1.5	0	0.6	0.2	0	11.1	0	0.6

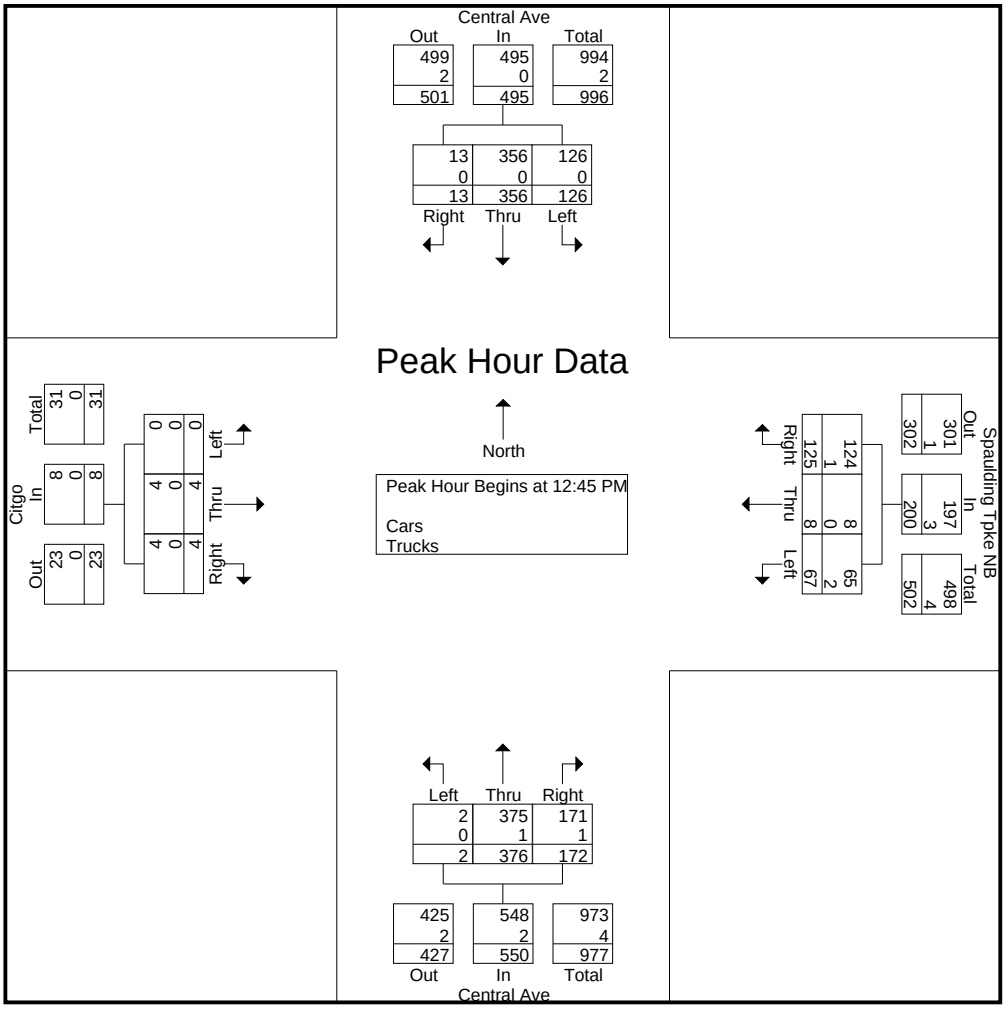
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:45 PM																	
12:45 PM	30	94	**4**	128	16	**2**	28	46	0	99	**48**	147	0	0	1	1	322
01:00 PM	31	67	3	101	9	2	**36**	47	**2**	**103**	46	**151**	0	1	1	2	301
01:15 PM	**39**	**108**	2	**149**	**21**	2	29	52	0	93	42	135	0	1	**2**	**3**	**339**
01:30 PM	26	87	4	117	21	2	32	**55**	0	81	36	117	0	**2**	0	2	291
Total Volume	126	356	13	495	67	8	125	200	2	376	172	550	0	4	4	8	1253
% App. Total	25.5	71.9	2.6		33.5	4	62.5		0.4	68.4	31.3		0	50	50		
PHF	.808	.824	.813	.831	.798	1.00	.868	.909	.250	.913	.896	.911	.000	.500	.500	.667	.924
Cars	126	356	13	495	65	8	124	197	2	375	171	548	0	4	4	8	1248
% Cars	100	100	100	100	97.0	100	99.2	98.5	100	99.7	99.4	99.6	0	100	100	100	99.6
Trucks	0	0	0	0	2	0	1	3	0	1	1	2	0	0	0	0	5
% Trucks	0	0	0	0	3.0	0	0.8	1.5	0	0.3	0.6	0.4	0	0	0	0	0.4

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

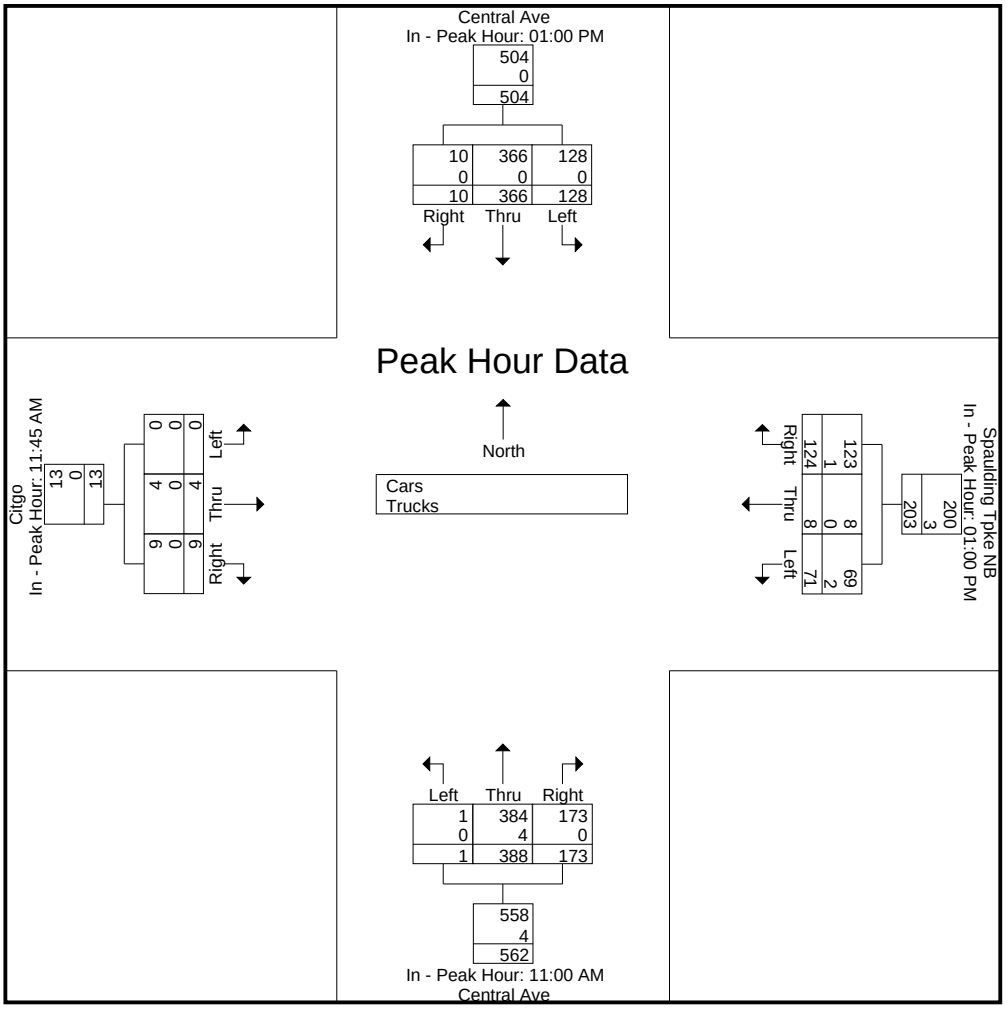
	01:00 PM				01:00 PM				11:00 AM				11:45 AM			
+0 mins.	31	67	3	101	9	**2**	**36**	47	**1**	**108**	31	140	0	0	**3**	3
+15 mins.	**39**	**108**	2	**149**	**21**	2	29	52	0	100	47	**147**	0	0	2	2
+30 mins.	26	87	**4**	117	21	2	32	**55**	0	91	**54**	145	0	1	3	**4**
+45 mins.	32	104	1	137	20	2	27	49	0	89	41	130	0	**3**	1	4
Total Volume	128	366	10	504	71	8	124	203	1	388	173	562	0	4	9	13
% App. Total	25.4	72.6	2		35	3.9	61.1		0.2	69	30.8		0	30.8	69.2	
PHF	.821	.847	.625	.846	.845	1.000	.861	.923	.250	.898	.801	.956	.000	.333	.750	.813
Cars	128	366	10	504	69	8	123	200	1	384	173	558	0	4	9	13
% Cars	100	100	100	100	97.2	100	99.2	98.5	100	99	100	99.3	0	100	100	100
Trucks	0	0	0	0	2	0	1	3	0	4	0	4	0	0	0	0
% Trucks	0	0	0	0	2.8	0	0.8	1.5	0	1	0	0.7	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	19	103	6	17	1	25	1	107	31	0	0	3	313
11:15 AM	25	79	1	17	1	28	0	98	47	0	0	0	296
11:30 AM	34	90	4	18	1	19	0	90	54	0	0	0	310
11:45 AM	30	90	8	27	3	32	0	89	41	0	0	3	323
Total	108	362	19	79	6	104	1	384	173	0	0	6	1242
12:00 PM	28	92	1	15	0	29	1	93	40	0	0	2	301
12:15 PM	23	82	4	15	2	23	1	95	32	0	1	3	281
12:30 PM	22	93	3	12	2	11	0	84	28	0	3	1	259
12:45 PM	30	94	4	16	2	28	0	98	48	0	0	1	321
Total	103	361	12	58	6	91	2	370	148	0	4	7	1162
01:00 PM	31	67	3	9	2	35	2	103	45	0	1	1	299
01:15 PM	39	108	2	21	2	29	0	93	42	0	1	2	339
01:30 PM	26	87	4	19	2	32	0	81	36	0	2	0	289
01:45 PM	32	104	1	20	2	27	0	62	30	0	0	1	279
Total	128	366	10	69	8	123	2	339	153	0	4	4	1206
Grand Total	339	1089	41	206	20	318	5	1093	474	0	8	17	3610
Apprch %	23.1	74.1	2.8	37.9	3.7	58.5	0.3	69.5	30.2	0	32	68	
Total %	9.4	30.2	1.1	5.7	0.6	8.8	0.1	30.3	13.1	0	0.2	0.5	

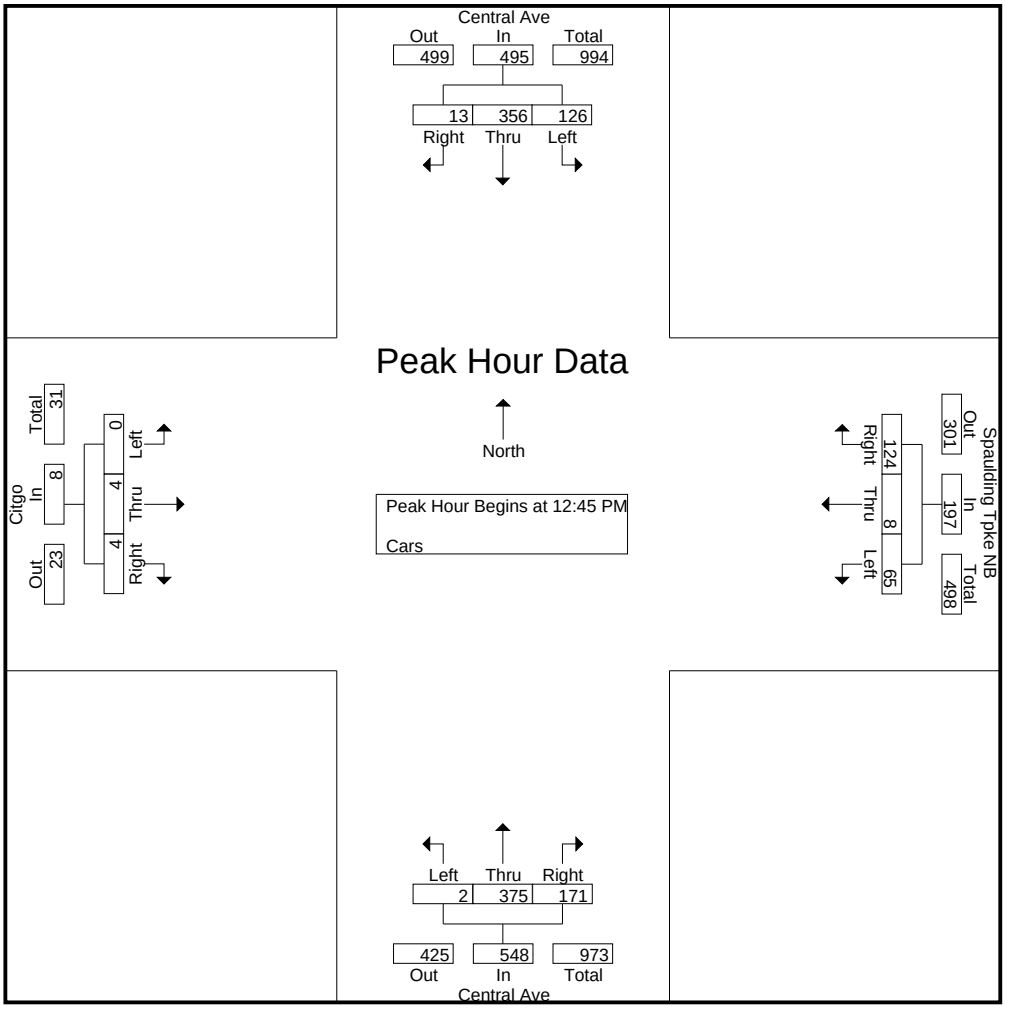
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:45 PM																	
12:45 PM	30	94	**4**	128	16	**2**	28	46	0	98	**48**	146	0	0	1	1	321
01:00 PM	31	67	3	101	9	2	**35**	46	**2**	**103**	45	**150**	0	1	1	2	299
01:15 PM	**39**	**108**	2	**149**	**21**	2	29	52	0	93	42	135	0	1	**2**	**3**	**339**
01:30 PM	26	87	4	117	19	2	32	**53**	0	81	36	117	0	**2**	0	2	289
Total Volume	126	356	13	495	65	8	124	197	2	375	171	548	0	4	4	8	1248
% App. Total	25.5	71.9	2.6		33	4.1	62.9		0.4	68.4	31.2		0	50	50		
PHF	.808	.824	.813	.831	.774	1.00	.886	.929	.250	.910	.891	.913	.000	.500	.500	.667	.920

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 5



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

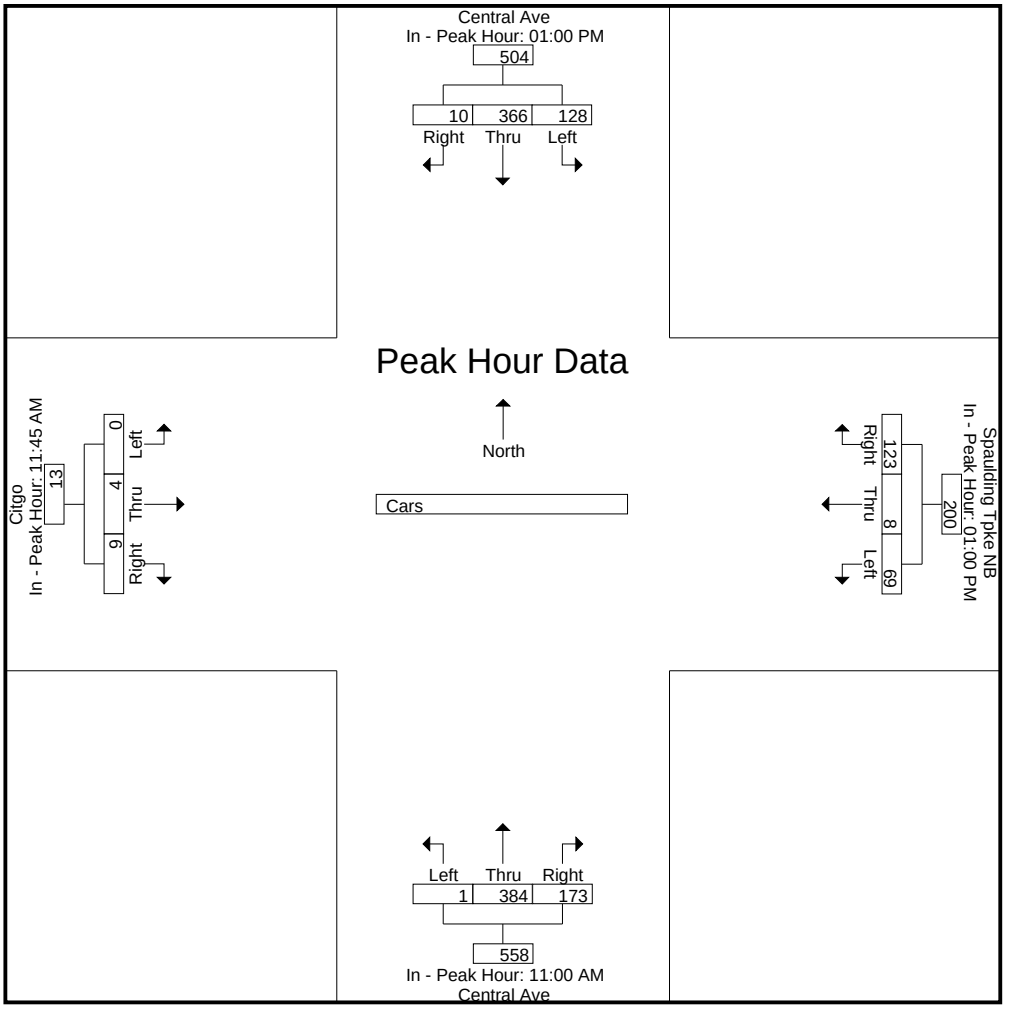
	01:00 PM				01:00 PM				11:00 AM				11:45 AM			
+0 mins.	31	67	3	101	9	**2**	**35**	46	**1**	**107**	31	139	0	0	**3**	3
+15 mins.	**39**	**108**	2	**149**	**21**	2	29	52	0	98	47	**145**	0	0	2	2
+30 mins.	26	87	**4**	117	19	2	32	**53**	0	90	**54**	144	0	1	3	**4**
+45 mins.	32	104	1	137	20	2	27	49	0	89	41	130	0	**3**	1	4
Total Volume	128	366	10	504	69	8	123	200	1	384	173	558	0	4	9	13
% App. Total	25.4	72.6	2		34.5	4	61.5		0.2	68.8	31		0	30.8	69.2	
PHF	.821	.847	.625	.846	.821	1.000	.879	.943	.250	.897	.801	.962	.000	.333	.750	.813

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 7

Groups Printed- Trucks

	Central Ave From North			Spaulding Tpke NB From East			Central Ave From South			Citgo From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	2
11:15 AM	0	0	0	1	0	1	0	2	0	0	0	0	4
11:30 AM	0	1	0	0	0	1	0	1	0	0	0	0	3
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	1	0	1	0	4	0	4	0	0	0	0	10
12:00 PM	1	2	0	0	0	0	0	0	0	0	0	0	3
12:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	2	2	0	0	0	0	0	3	0	0	0	0	7
01:00 PM	0	0	0	0	0	1	0	0	1	0	0	0	2
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	2	0	1	0	0	1	0	1	0	5
Grand Total	2	3	0	3	0	5	0	7	1	0	1	0	22
Apprch %	40	60	0	37.5	0	62.5	0	87.5	12.5	0	100	0	
Total %	9.1	13.6	0	13.6	0	22.7	0	31.8	4.5	0	4.5	0	

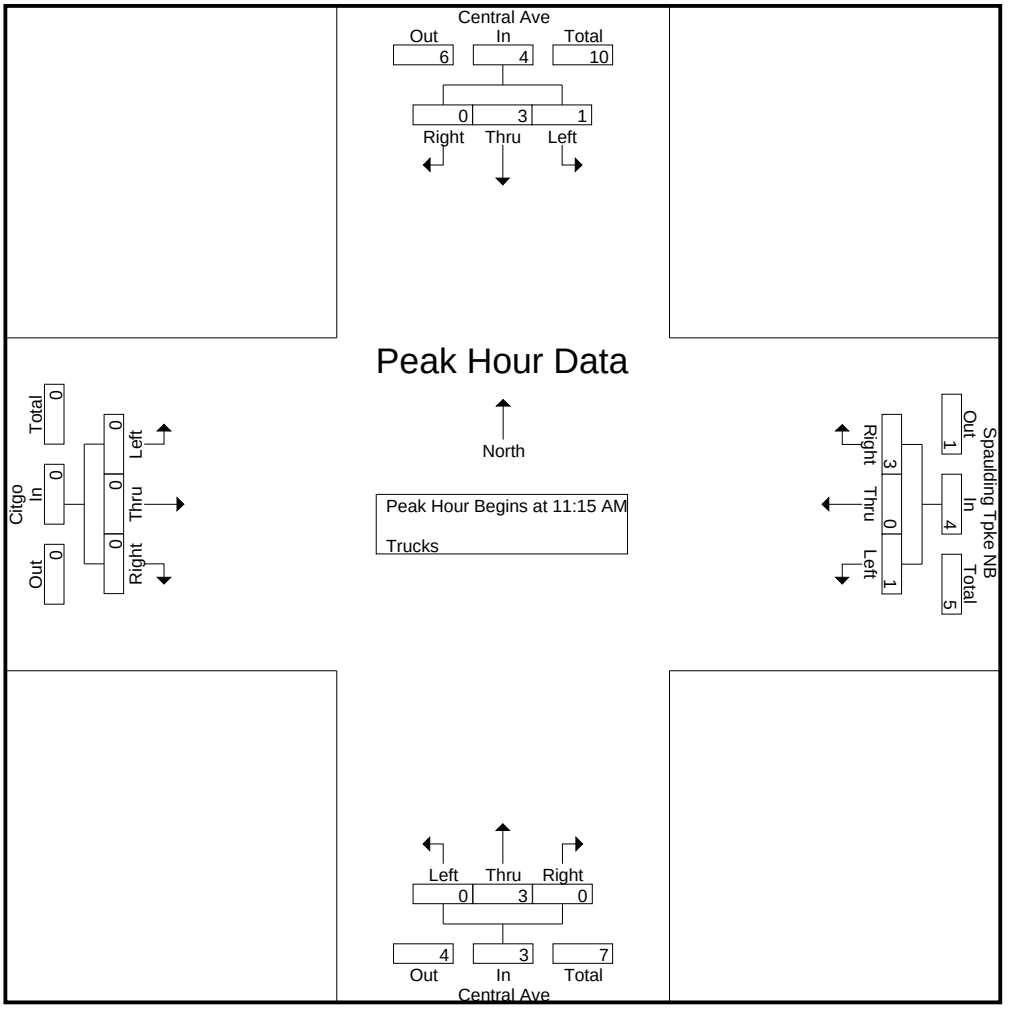
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	0	0	0	0	**1**	0	**1**	**2**	0	**2**	0	**2**	0	0	0	0	**4**
11:30 AM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
11:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
12:00 PM	**1**	**2**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	1	3	0	4	1	0	3	4	0	3	0	3	0	0	0	0	11
% App. Total	25	75	0		25	0	75		0	100	0		0	0	0		
PHF	.250	.375	.000	.333	.250	.000	.750	.500	.000	.375	.000	.375	.000	.000	.000	.000	.688

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 8



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

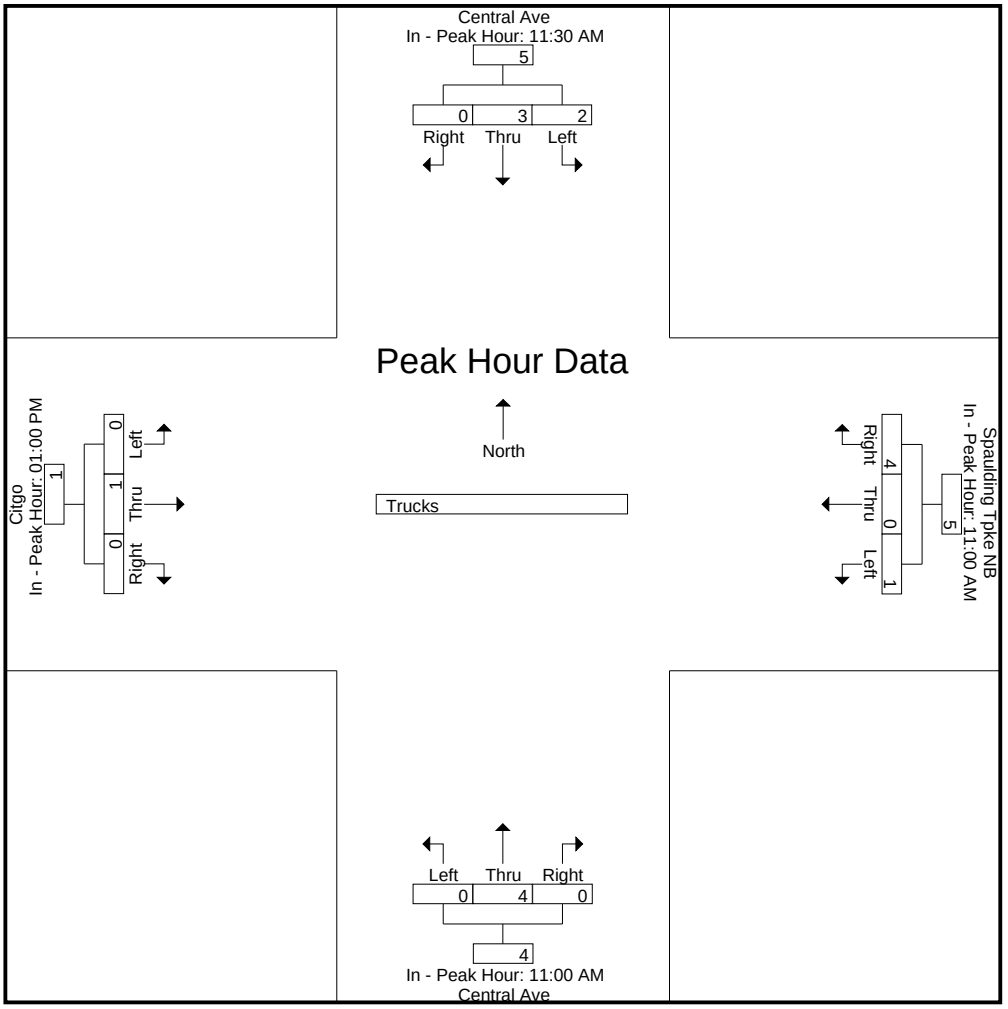
	11:30 AM				11:00 AM				11:00 AM				01:00 PM			
+0 mins.	0	1	0	1	0	0	**1**	1	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	**1**	0	1	**2**	0	**2**	0	**2**	0	0	0	0
+30 mins.	**1**	**2**	0	**3**	0	0	1	1	0	1	0	1	0	0	0	0
+45 mins.	1	0	0	1	0	0	1	1	0	0	0	0	0	**1**	0	**1**
Total Volume	2	3	0	5	1	0	4	5	0	4	0	4	0	1	0	1
% App. Total	40	60	0		20	0	80		0	100	0		0	100	0	
PHF	.500	.375	.000	.417	.250	.000	1.000	.625	.000	.500	.000	.500	.000	.250	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 10

Groups Printed- Bikes Peds

	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
01:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	4
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	5
Grand Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11	2	13
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0				
Total %	0	100	0		0	0	0		0	0	0		0	0	0		84.6	15.4	

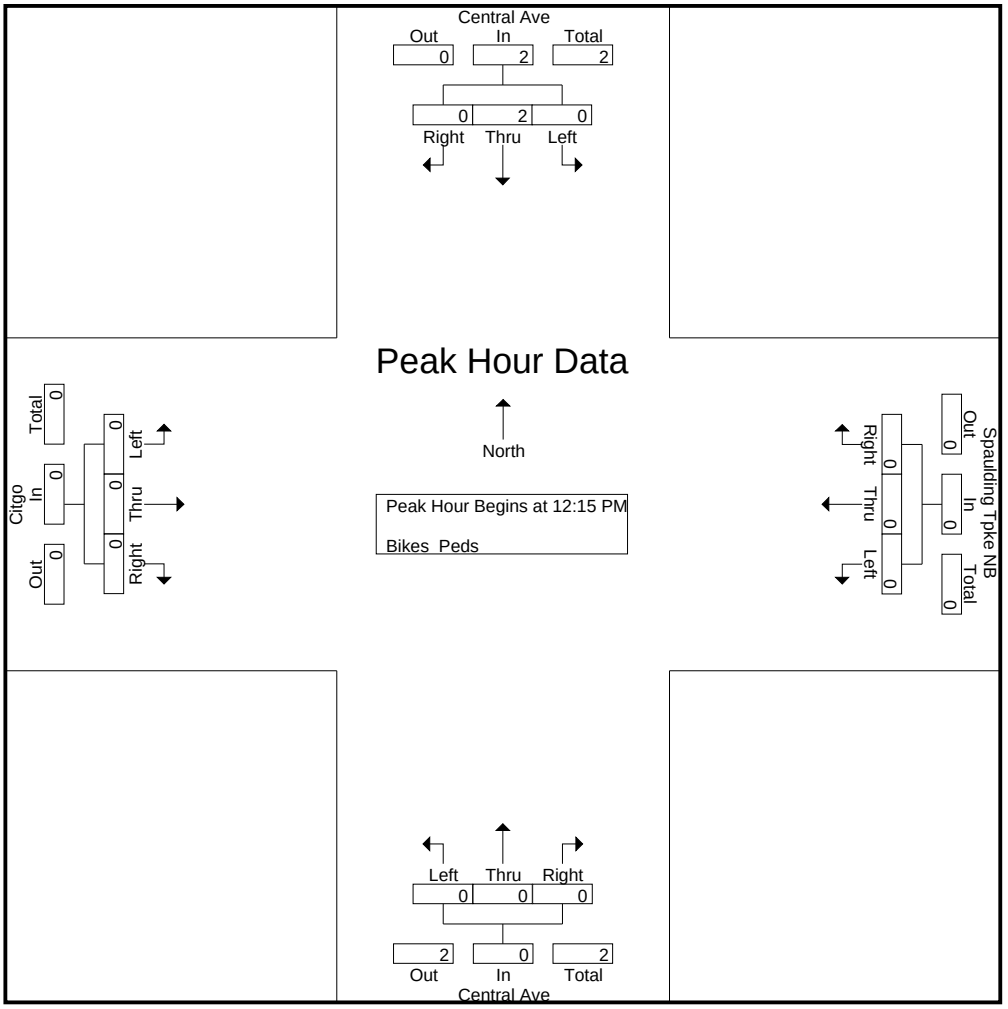
	Central Ave From North				Spaulding Tpke NB From East				Central Ave From South				Citgo From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 11



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

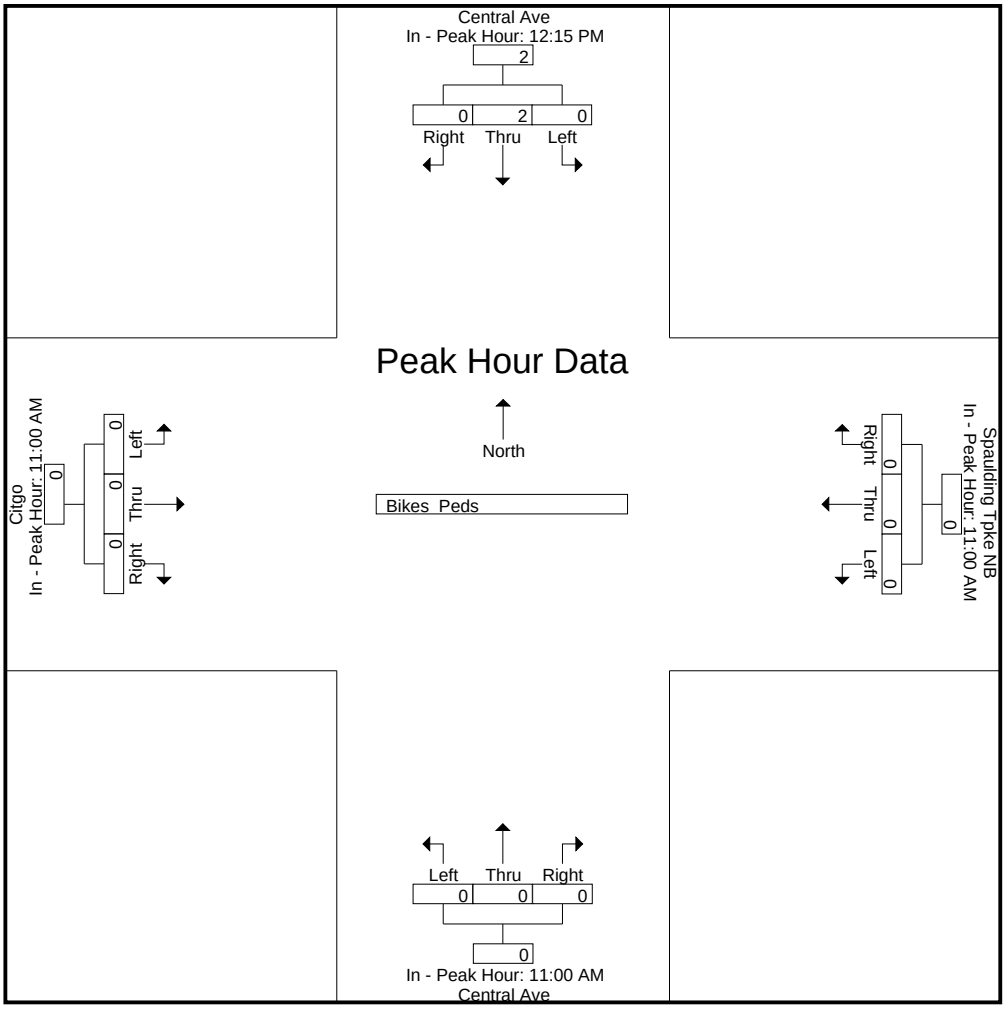
	12:15 PM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Spaulding Tpke NB / Citgo
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S1
Site Code : 10566001
Start Date : 12/20/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	143	4	0	0	0	21	105	0	3	0	28	304
07:15 AM	0	80	6	0	0	0	42	145	0	5	0	38	316
07:30 AM	0	111	4	0	0	0	42	138	0	4	1	49	349
07:45 AM	1	106	19	0	0	0	63	153	1	1	0	52	396
Total	1	440	33	0	0	0	168	541	1	13	1	167	1365
08:00 AM	0	118	11	0	0	0	35	154	1	3	0	37	359
08:15 AM	1	108	6	0	0	1	59	167	0	4	0	44	390
08:30 AM	0	98	16	0	0	1	40	141	0	5	0	47	348
08:45 AM	0	100	11	0	0	0	45	117	0	5	0	49	327
Total	1	424	44	0	0	2	179	579	1	17	0	177	1424
Grand Total	2	864	77	0	0	2	347	1120	2	30	1	344	2789
Apprch %	0.2	91.6	8.2	0	0	100	23.6	76.2	0.1	8	0.3	91.7	
Total %	0.1	31	2.8	0	0	0.1	12.4	40.2	0.1	1.1	0	12.3	
Cars	2	834	76	0	0	2	339	1072	2	28	1	338	2694
% Cars	100	96.5	98.7	0	0	100	97.7	95.7	100	93.3	100	98.3	96.6
Trucks	0	30	1	0	0	0	8	48	0	2	0	6	95
% Trucks	0	3.5	1.3	0	0	0	2.3	4.3	0	6.7	0	1.7	3.4

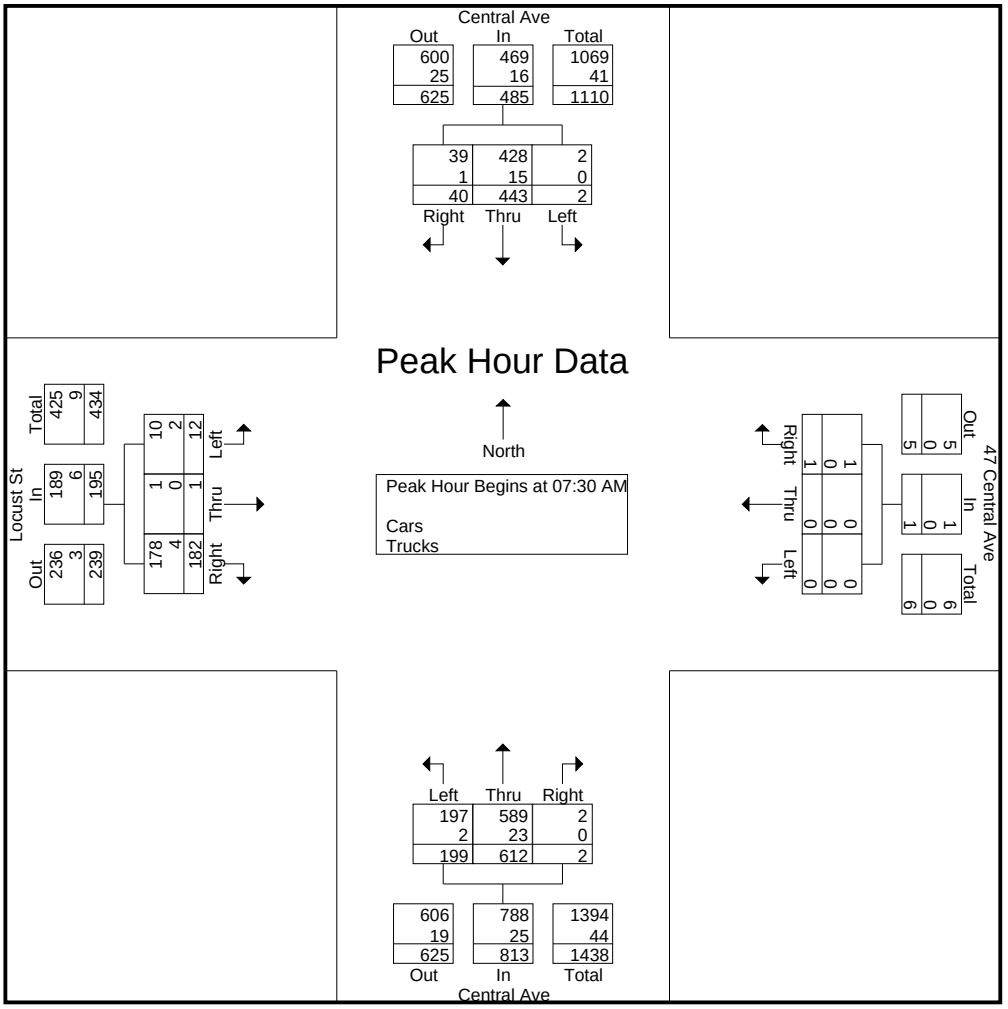
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	111	4	115	0	0	0	0	42	138	0	180	**4**	**1**	49	**54**	349
07:45 AM	**1**	106	**19**	126	0	0	0	0	**63**	153	**1**	217	1	0	**52**	53	**396**
08:00 AM	0	**118**	11	**129**	0	0	0	0	35	154	1	190	3	0	37	40	359
08:15 AM	1	108	6	115	0	0	**1**	**1**	59	**167**	0	**226**	4	0	44	48	390
Total Volume	2	443	40	485	0	0	1	1	199	612	2	813	12	1	182	195	1494
% App. Total	0.4	91.3	8.2		0	0	100		24.5	75.3	0.2		6.2	0.5	93.3		
PHF	.500	.939	.526	.940	.000	.000	.250	.250	.790	.916	.500	.899	.750	.250	.875	.903	.943
Cars	2	428	39	469	0	0	1	1	197	589	2	788	10	1	178	189	1447
% Cars	100	96.6	97.5	96.7	0	0	100	100	99.0	96.2	100	96.9	83.3	100	97.8	96.9	96.9
Trucks	0	15	1	16	0	0	0	0	2	23	0	25	2	0	4	6	47
% Trucks	0	3.4	2.5	3.3	0	0	0	0	1.0	3.8	0	3.1	16.7	0	2.2	3.1	3.1

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

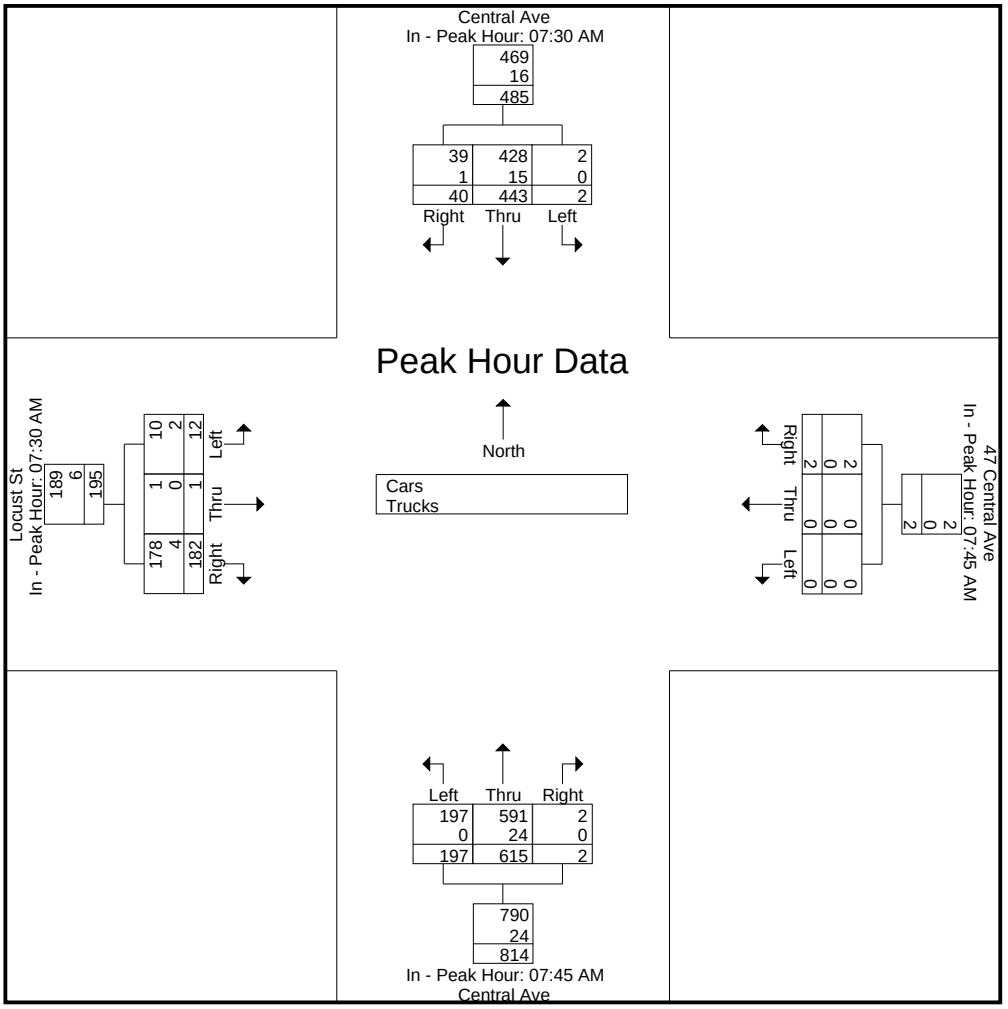
	07:30 AM				07:45 AM				07:45 AM				07:30 AM			
+0 mins.	0	111	4	115	0	0	0	0	**63**	153	**1**	217	**4**	**1**	49	**54**
+15 mins.	**1**	106	**19**	126	0	0	0	0	35	154	1	190	1	0	**52**	53
+30 mins.	0	**118**	11	**129**	0	0	**1**	**1**	59	**167**	0	**226**	3	0	37	40
+45 mins.	1	108	6	115	0	0	1	1	40	141	0	181	4	0	44	48
Total Volume	2	443	40	485	0	0	2	2	197	615	2	814	12	1	182	195
% App. Total	0.4	91.3	8.2		0	0	100		24.2	75.6	0.2		6.2	0.5	93.3	
PHF	.500	.939	.526	.940	.000	.000	.500	.500	.782	.921	.500	.900	.750	.250	.875	.903
Cars	2	428	39	469	0	0	2	2	197	591	2	790	10	1	178	189
% Cars	100	96.6	97.5	96.7	0	0	100	100	100	96.1	100	97.1	83.3	100	97.8	96.9
Trucks	0	15	1	16	0	0	0	0	0	24	0	24	2	0	4	6
% Trucks	0	3.4	2.5	3.3	0	0	0	0	0	3.9	0	2.9	16.7	0	2.2	3.1

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	136	4	0	0	0	21	102	0	3	0	27	293
07:15 AM	0	79	6	0	0	0	37	134	0	5	0	37	298
07:30 AM	0	109	4	0	0	0	40	134	0	4	1	48	340
07:45 AM	1	101	19	0	0	0	63	146	1	0	0	50	381
Total	1	425	33	0	0	0	161	516	1	12	1	162	1312
08:00 AM	0	113	10	0	0	0	35	144	1	2	0	36	341
08:15 AM	1	105	6	0	0	1	59	165	0	4	0	44	385
08:30 AM	0	95	16	0	0	1	40	136	0	5	0	47	340
08:45 AM	0	96	11	0	0	0	44	111	0	5	0	49	316
Total	1	409	43	0	0	2	178	556	1	16	0	176	1382
Grand Total	2	834	76	0	0	2	339	1072	2	28	1	338	2694
Apprch %	0.2	91.4	8.3	0	0	100	24	75.9	0.1	7.6	0.3	92.1	
Total %	0.1	31	2.8	0	0	0.1	12.6	39.8	0.1	1	0	12.5	

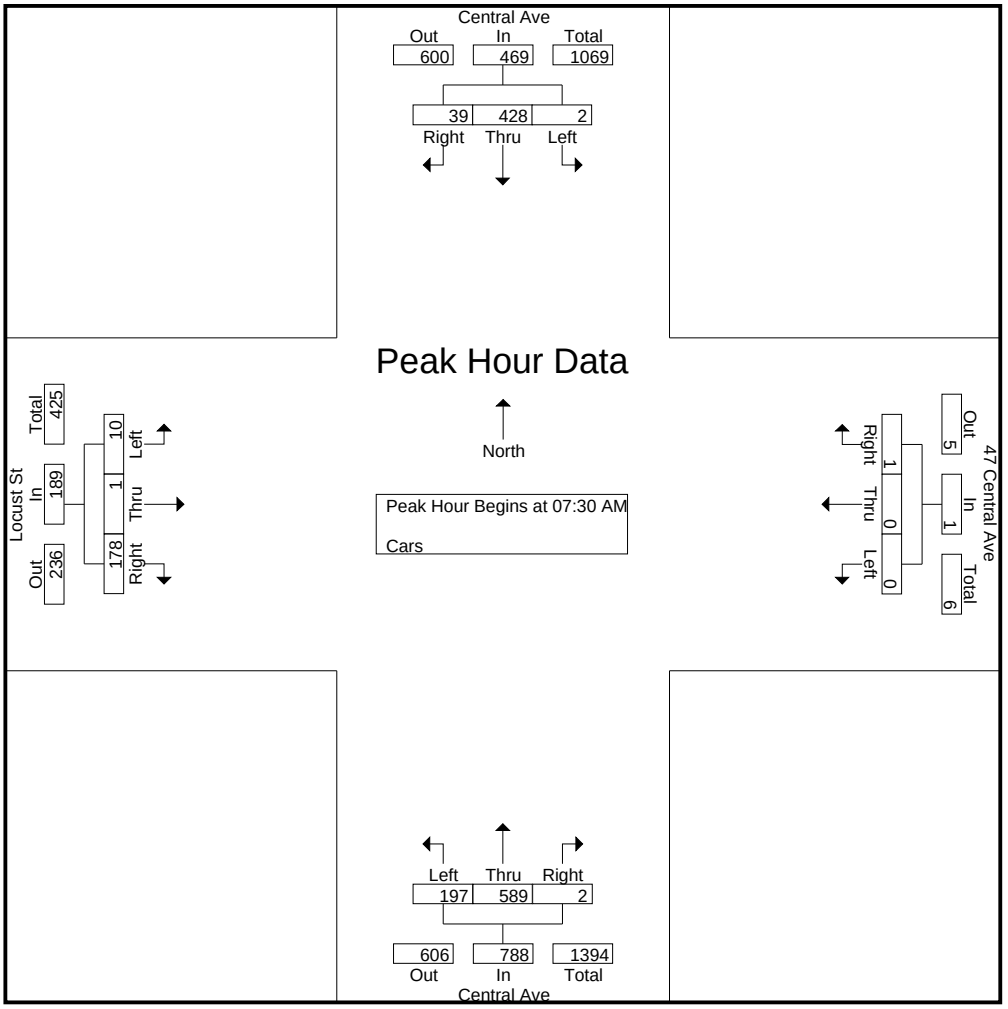
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	109	4	113	0	0	0	0	40	134	0	174	**4**	**1**	48	**53**	340
07:45 AM	**1**	101	**19**	121	0	0	0	0	**63**	146	**1**	210	0	0	**50**	50	381
08:00 AM	0	**113**	10	**123**	0	0	0	0	35	144	1	180	2	0	36	38	341
08:15 AM	1	105	6	112	0	0	**1**	**1**	59	**165**	0	**224**	4	0	44	48	**385**
Total Volume	2	428	39	469	0	0	1	1	197	589	2	788	10	1	178	189	1447
% App. Total	0.4	91.3	8.3		0	0	100		25	74.7	0.3		5.3	0.5	94.2		
PHF	.500	.947	.513	.953	.000	.000	.250	.250	.782	.892	.500	.879	.625	.250	.890	.892	.940

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

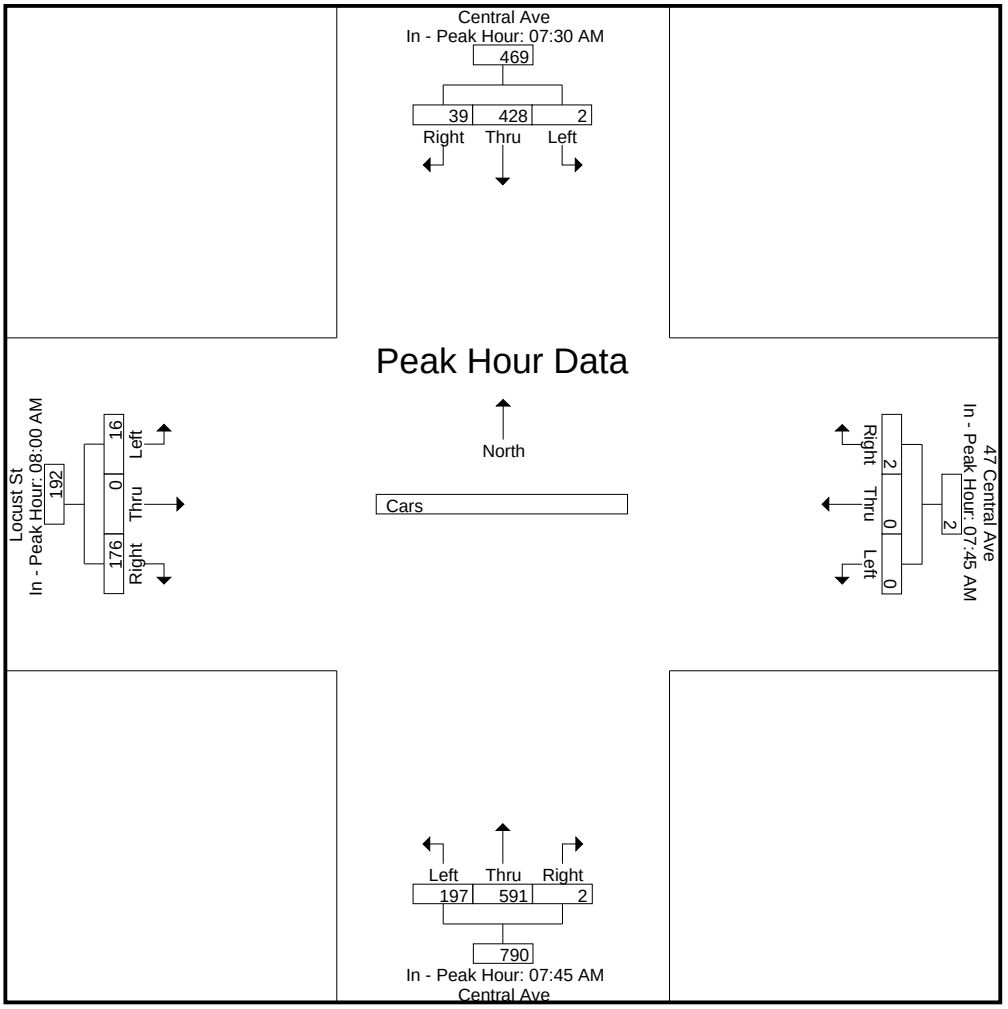
	07:30 AM				07:45 AM				07:45 AM				08:00 AM			
+0 mins.	0	109	4	113	0	0	0	0	**63**	146	**1**	210	2	0	36	38
+15 mins.	**1**	101	**19**	121	0	0	0	0	35	144	1	180	4	0	44	48
+30 mins.	0	**113**	10	**123**	0	0	**1**	**1**	59	**165**	0	**224**	**5**	0	47	52
+45 mins.	1	105	6	112	0	0	1	1	40	136	0	176	5	0	**49**	**54**
Total Volume	2	428	39	469	0	0	2	2	197	591	2	790	16	0	176	192
% App. Total	0.4	91.3	8.3		0	0	100		24.9	74.8	0.3		8.3	0	91.7	
PHF	.500	.947	.513	.953	.000	.000	.500	.500	.782	.895	.500	.882	.800	.000	.898	.889

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025

Groups Printed- Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	7	0	0	0	0	0	3	0	0	0	1	11
07:15 AM	0	1	0	0	0	0	5	11	0	0	0	1	18
07:30 AM	0	2	0	0	0	0	2	4	0	0	0	1	9
07:45 AM	0	5	0	0	0	0	0	7	0	1	0	2	15
Total	0	15	0	0	0	0	7	25	0	1	0	5	53
08:00 AM	0	5	1	0	0	0	0	10	0	1	0	1	18
08:15 AM	0	3	0	0	0	0	0	2	0	0	0	0	5
08:30 AM	0	3	0	0	0	0	0	5	0	0	0	0	8
08:45 AM	0	4	0	0	0	0	1	6	0	0	0	0	11
Total	0	15	1	0	0	0	1	23	0	1	0	1	42
Grand Total	0	30	1	0	0	0	8	48	0	2	0	6	95
Apprch %	0	96.8	3.2	0	0	0	14.3	85.7	0	25	0	75	
Total %	0	31.6	1.1	0	0	0	8.4	50.5	0	2.1	0	6.3	

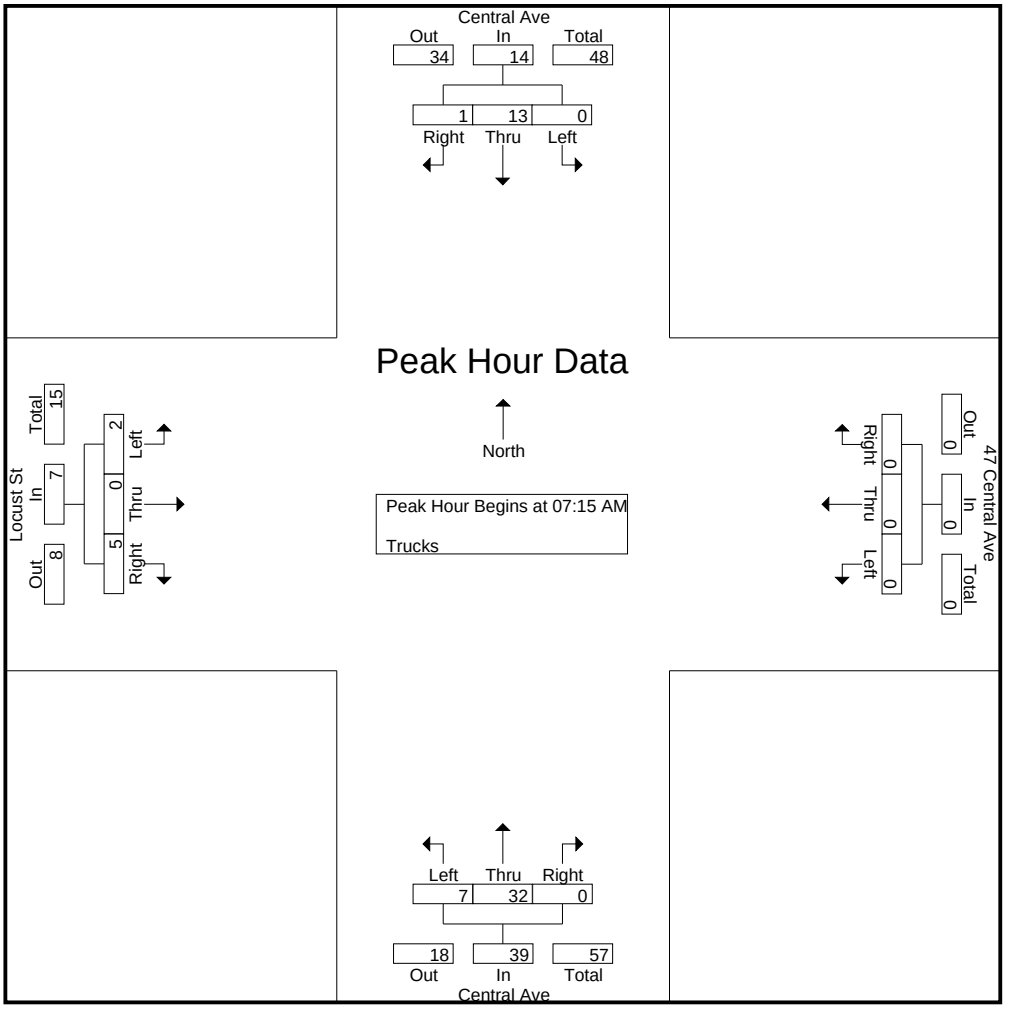
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	0	1	0	0	0	0	**5**	**11**	0	**16**	0	0	1	1	**18**
07:30 AM	0	2	0	2	0	0	0	0	2	4	0	6	0	0	1	1	9
07:45 AM	0	**5**	0	5	0	0	0	0	0	7	0	7	**1**	0	**2**	**3**	15
08:00 AM	0	5	**1**	**6**	0	0	0	0	0	10	0	10	1	0	1	2	18
Total Volume	0	13	1	14	0	0	0	0	7	32	0	39	2	0	5	7	60
% App. Total	0	92.9	7.1		0	0	0		17.9	82.1	0		28.6	0	71.4		
PHF	.000	.650	.250	.583	.000	.000	.000	.000	.350	.727	.000	.609	.500	.000	.625	.583	.833

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

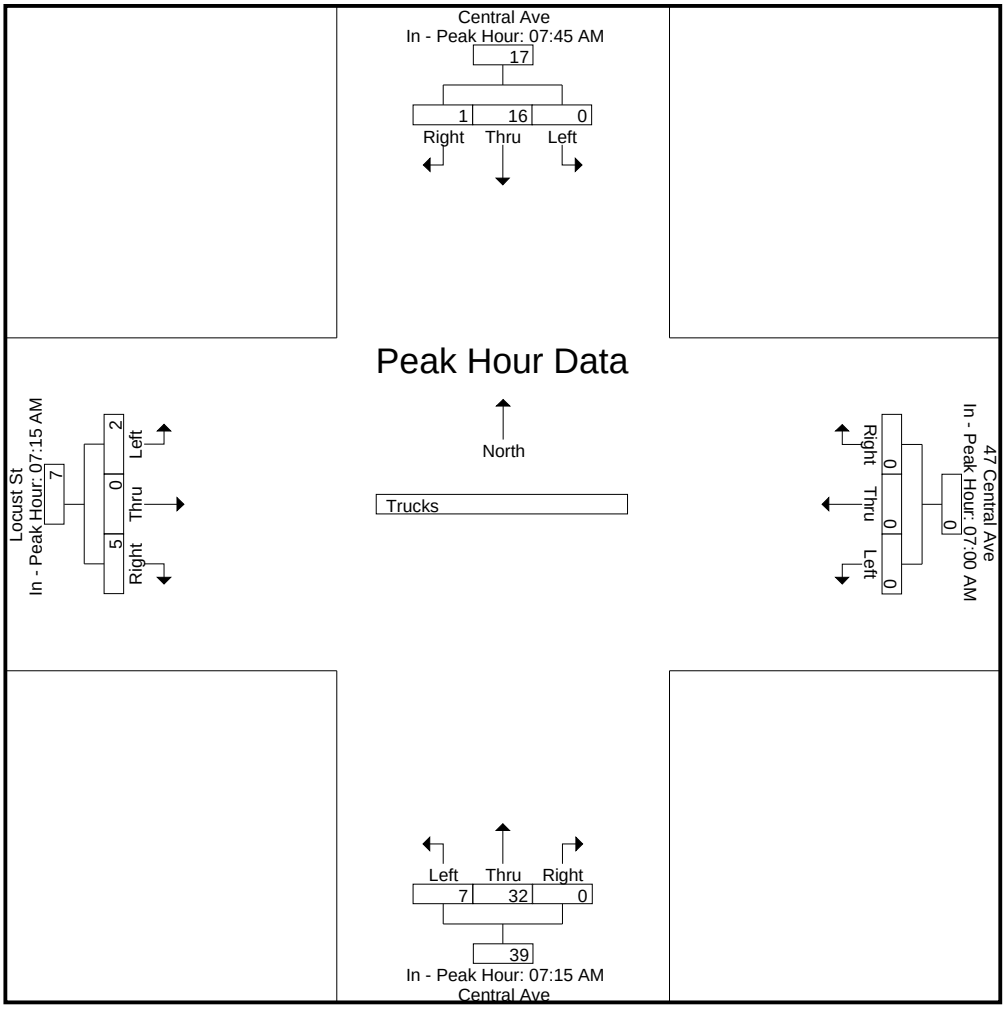
	07:45 AM				07:00 AM				07:15 AM				07:15 AM			
+0 mins.	0	**5**	0	5	0	0	0	0	**5**	**11**	0	**16**	0	0	1	1
+15 mins.	0	5	**1**	**6**	0	0	0	0	2	4	0	6	0	0	1	1
+30 mins.	0	3	0	3	0	0	0	0	0	7	0	7	**1**	0	**2**	**3**
+45 mins.	0	3	0	3	0	0	0	0	0	10	0	10	1	0	1	2
Total Volume	0	16	1	17	0	0	0	0	7	32	0	39	2	0	5	7
% App. Total	0	94.1	5.9		0	0	0		17.9	82.1	0		28.6	0	71.4	
PHF	.000	.800	.250	.708	.000	.000	.000	.000	.350	.727	.000	.609	.500	.000	.625	.583

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 10

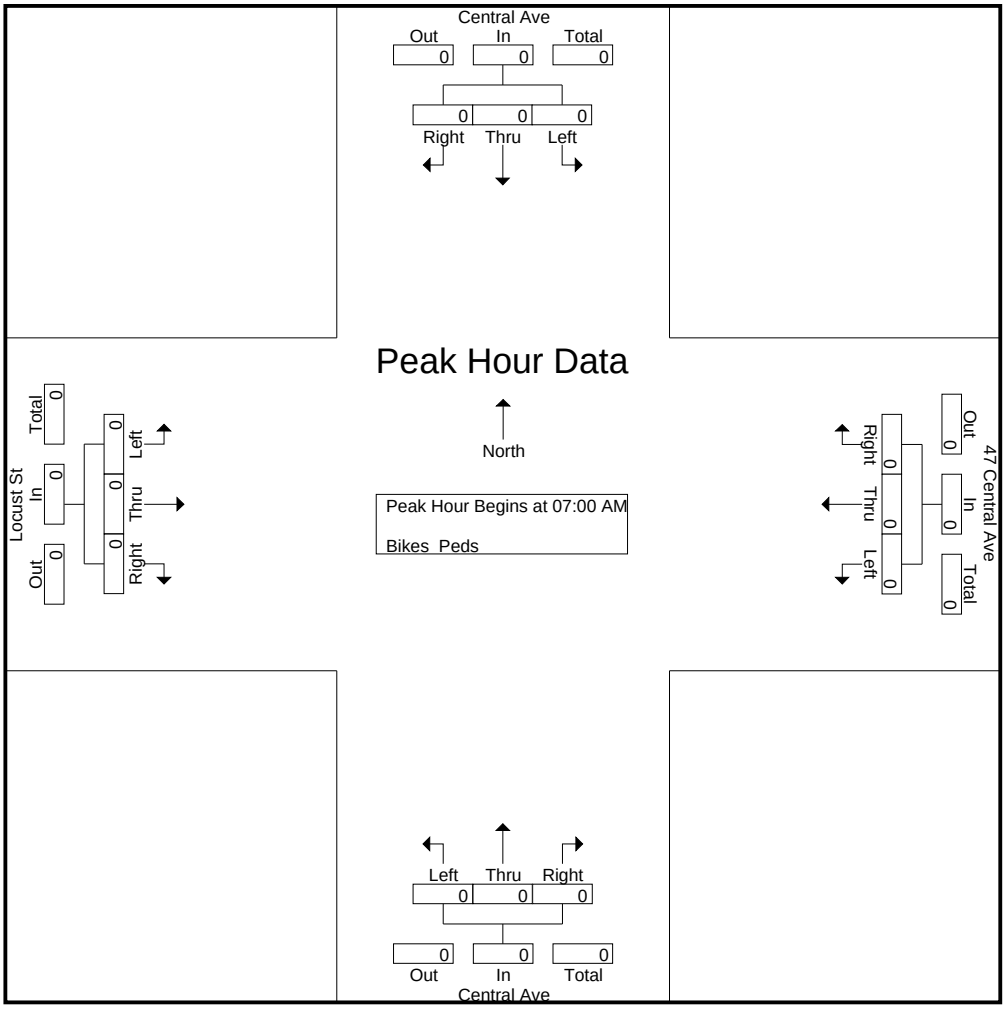
Groups Printed- Bikes Peds

	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
08:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	3	0	3
Total	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5	7	0	7
Grand Total	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	8	10	0	10
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

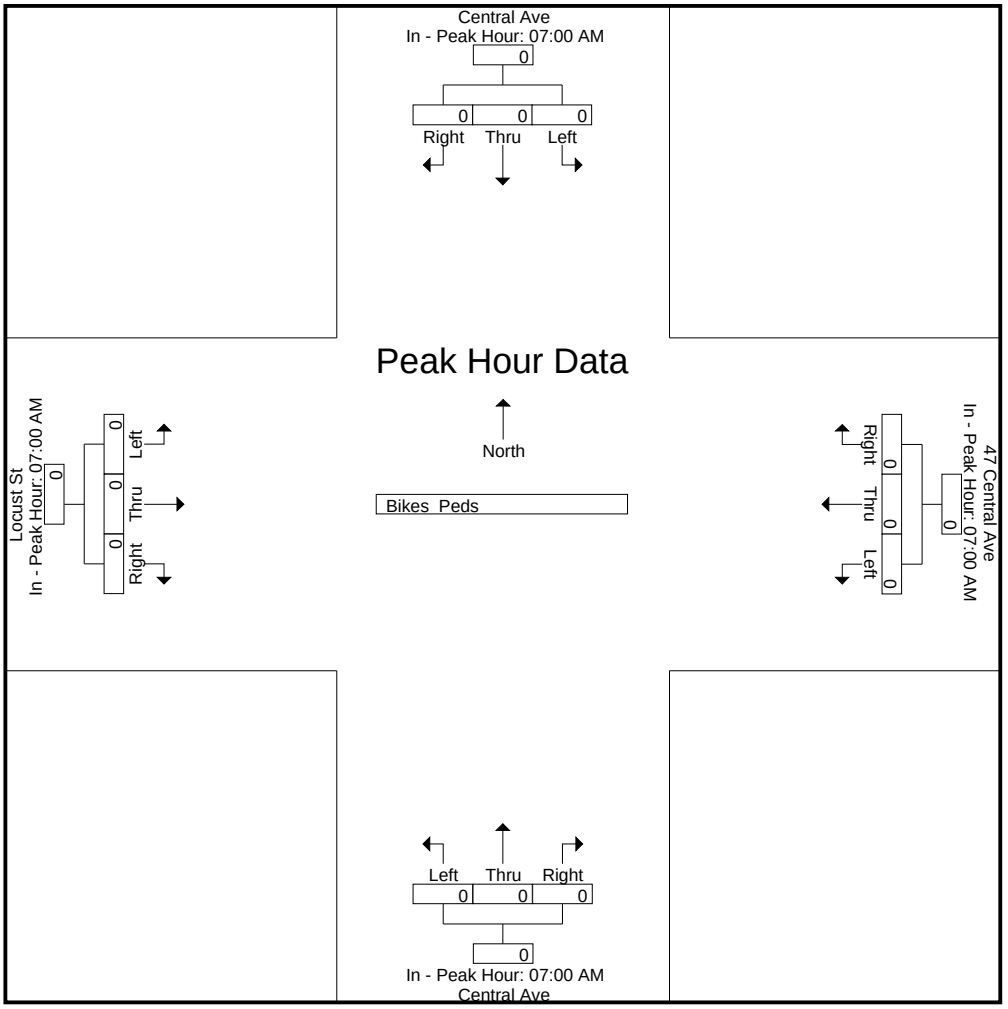
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	0	128	17	1	1	0	48	131	0	6	1	81	414
03:15 PM	0	124	18	2	1	2	52	163	0	7	0	66	435
03:30 PM	0	126	19	0	1	0	45	165	0	7	0	59	422
03:45 PM	0	148	23	0	1	0	44	160	0	10	0	65	451
Total	0	526	77	3	4	2	189	619	0	30	1	271	1722
04:00 PM	1	132	26	0	0	1	43	177	0	8	1	59	448
04:15 PM	0	143	31	1	0	1	47	136	0	9	0	66	434
04:30 PM	0	137	15	1	0	1	26	155	0	13	0	63	411
04:45 PM	0	165	23	1	0	1	56	137	0	11	0	66	460
Total	1	577	95	3	0	4	172	605	0	41	1	254	1753
05:00 PM	0	100	19	0	0	1	39	158	0	16	0	70	403
05:15 PM	0	139	23	1	1	0	34	149	0	6	0	47	400
05:30 PM	0	106	29	1	0	1	39	121	0	3	0	42	342
05:45 PM	0	115	31	1	0	0	39	115	0	5	0	47	353
Total	0	460	102	3	1	2	151	543	0	30	0	206	1498
Grand Total	1	1563	274	9	5	8	512	1767	0	101	2	731	4973
Apprch %	0.1	85	14.9	40.9	22.7	36.4	22.5	77.5	0	12.1	0.2	87.6	
Total %	0	31.4	5.5	0.2	0.1	0.2	10.3	35.5	0	2	0	14.7	
Cars	1	1542	273	9	5	8	511	1754	0	100	2	729	4934
% Cars	100	98.7	99.6	100	100	100	99.8	99.3	0	99	100	99.7	99.2
Trucks	0	21	1	0	0	0	1	13	0	1	0	2	39
% Trucks	0	1.3	0.4	0	0	0	0.2	0.7	0	1	0	0.3	0.8

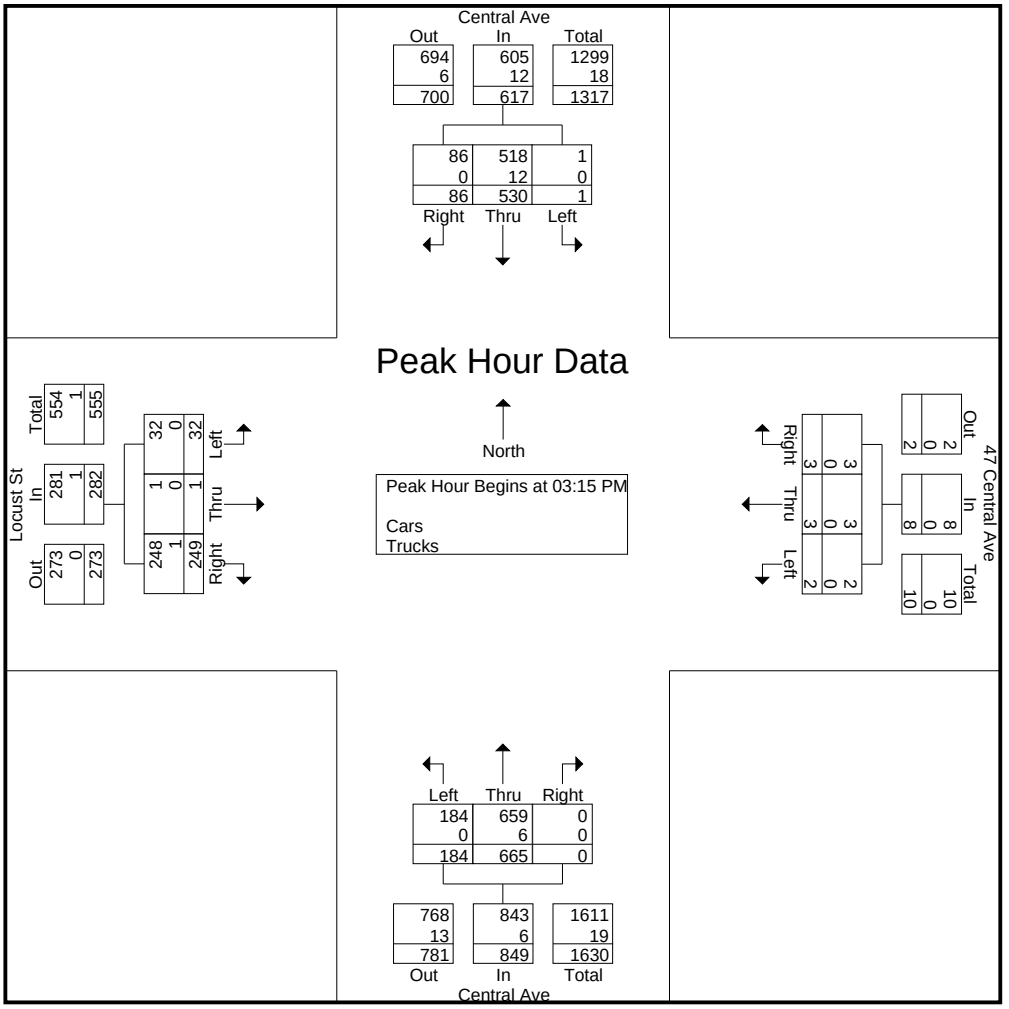
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:15 PM																	
03:15 PM	0	124	18	142	**2**	**1**	**2**	**5**	**52**	163	0	215	7	0	**66**	73	435
03:30 PM	0	126	19	145	0	1	0	1	45	165	0	210	7	0	59	66	422
03:45 PM	0	**148**	23	**171**	0	1	0	1	44	160	0	204	**10**	0	65	**75**	**451**
04:00 PM	**1**	132	**26**	159	0	0	1	1	43	**177**	0	**220**	8	**1**	59	68	448
Total Volume	1	530	86	617	2	3	3	8	184	665	0	849	32	1	249	282	1756
% App. Total	0.2	85.9	13.9		25	37.5	37.5		21.7	78.3	0		11.3	0.4	88.3		
PHF	.250	.895	.827	.902	.250	.750	.375	.400	.885	.939	.000	.965	.800	.250	.943	.940	.973
Cars	1	518	86	605	2	3	3	8	184	659	0	843	32	1	248	281	1737
% Cars	100	97.7	100	98.1	100	100	100	100	100	99.1	0	99.3	100	100	99.6	99.6	98.9
Trucks	0	12	0	12	0	0	0	0	0	6	0	6	0	0	1	1	19
% Trucks	0	2.3	0	1.9	0	0	0	0	0	0.9	0	0.7	0	0	0.4	0.4	1.1

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

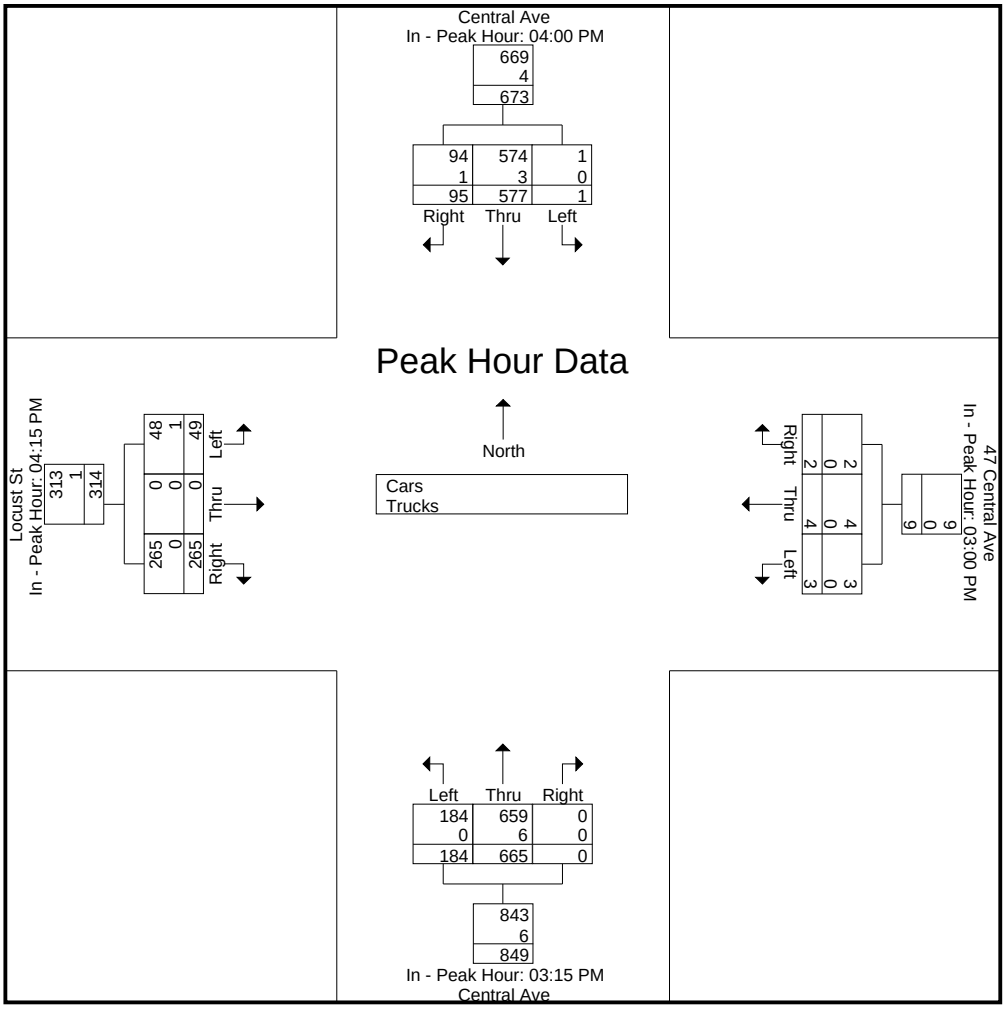
	04:00 PM				03:00 PM				03:15 PM				04:15 PM			
+0 mins.	**1**	132	26	159	1	**1**	0	2	**52**	163	0	215	9	0	66	75
+15 mins.	0	143	**31**	174	**2**	1	**2**	**5**	45	165	0	210	13	0	63	76
+30 mins.	0	137	15	152	0	1	0	1	44	160	0	204	11	0	66	77
+45 mins.	0	**165**	23	**188**	0	1	0	1	43	**177**	0	**220**	**16**	0	**70**	**86**
Total Volume	1	577	95	673	3	4	2	9	184	665	0	849	49	0	265	314
% App. Total	0.1	85.7	14.1		33.3	44.4	22.2		21.7	78.3	0		15.6	0	84.4	
PHF	.250	.874	.766	.895	.375	1.000	.250	.450	.885	.939	.000	.965	.766	.000	.946	.913
Cars	1	574	94	669	3	4	2	9	184	659	0	843	48	0	265	313
% Cars	100	99.5	98.9	99.4	100	100	100	100	100	99.1	0	99.3	98	0	100	99.7
Trucks	0	3	1	4	0	0	0	0	0	6	0	6	1	0	0	1
% Trucks	0	0.5	1.1	0.6	0	0	0	0	0	0.9	0	0.7	2	0	0	0.3

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	0	125	17	1	1	0	48	129	0	6	1	81	409
03:15 PM	0	120	18	2	1	2	52	159	0	7	0	65	426
03:30 PM	0	122	19	0	1	0	45	164	0	7	0	59	417
03:45 PM	0	146	23	0	1	0	44	159	0	10	0	65	448
Total	0	513	77	3	4	2	189	611	0	30	1	270	1700
04:00 PM	1	130	26	0	0	1	43	177	0	8	1	59	446
04:15 PM	0	142	30	1	0	1	47	133	0	9	0	66	429
04:30 PM	0	137	15	1	0	1	26	154	0	12	0	63	409
04:45 PM	0	165	23	1	0	1	56	137	0	11	0	66	460
Total	1	574	94	3	0	4	172	601	0	40	1	254	1744
05:00 PM	0	99	19	0	0	1	38	158	0	16	0	70	401
05:15 PM	0	138	23	1	1	0	34	148	0	6	0	47	398
05:30 PM	0	104	29	1	0	1	39	121	0	3	0	41	339
05:45 PM	0	114	31	1	0	0	39	115	0	5	0	47	352
Total	0	455	102	3	1	2	150	542	0	30	0	205	1490
Grand Total	1	1542	273	9	5	8	511	1754	0	100	2	729	4934
Apprch %	0.1	84.9	15	40.9	22.7	36.4	22.6	77.4	0	12	0.2	87.7	
Total %	0	31.3	5.5	0.2	0.1	0.2	10.4	35.5	0	2	0	14.8	

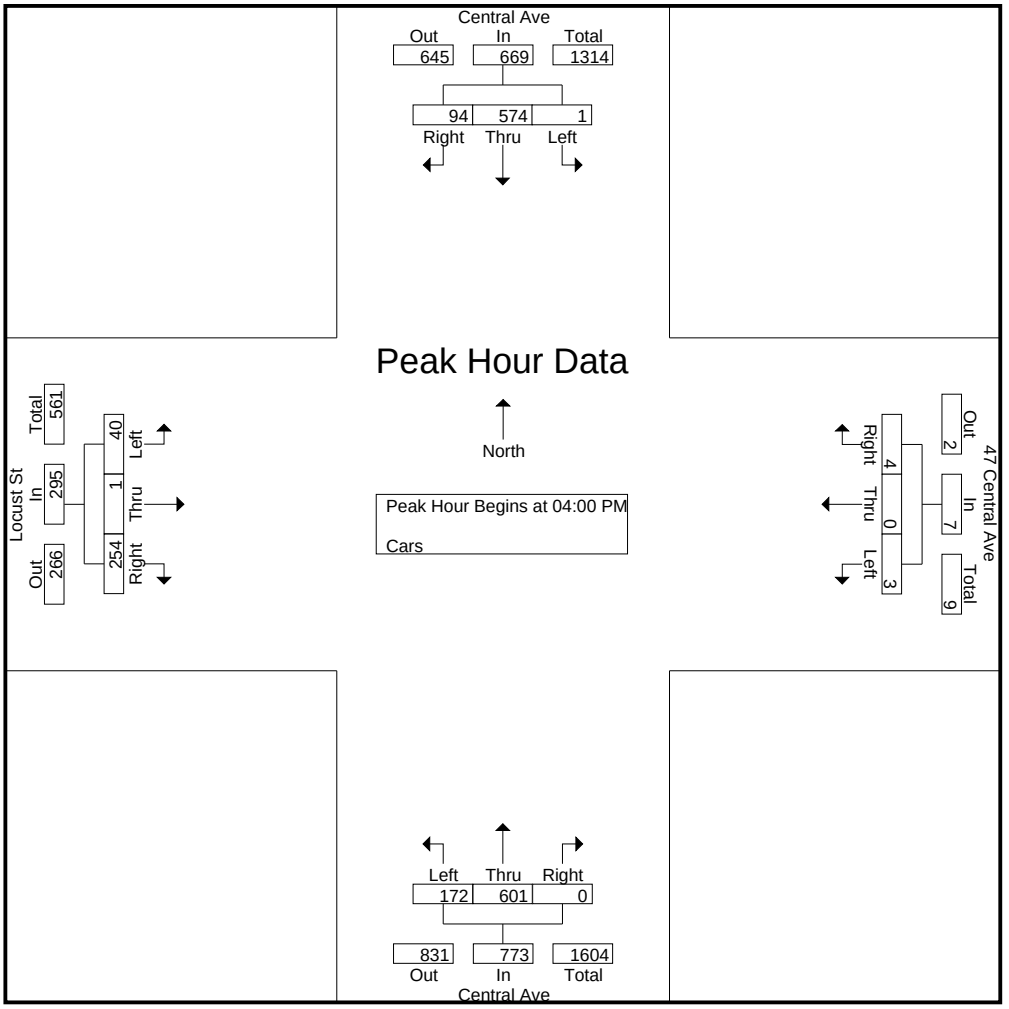
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	130	26	157	0	0	**1**	1	43	**177**	0	**220**	8	**1**	59	68	446
04:15 PM	0	142	**30**	172	**1**	0	1	**2**	47	133	0	180	9	0	**66**	75	429
04:30 PM	0	137	15	152	1	0	1	2	26	154	0	180	**12**	0	63	75	409
04:45 PM	0	**165**	23	**188**	1	0	1	2	**56**	137	0	193	11	0	66	**77**	**460**
Total Volume	1	574	94	669	3	0	4	7	172	601	0	773	40	1	254	295	1744
% App. Total	0.1	85.8	14.1		42.9	0	57.1		22.3	77.7	0		13.6	0.3	86.1		
PHF	.250	.870	.783	.890	.750	.000	1.00	.875	.768	.849	.000	.878	.833	.250	.962	.958	.948

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

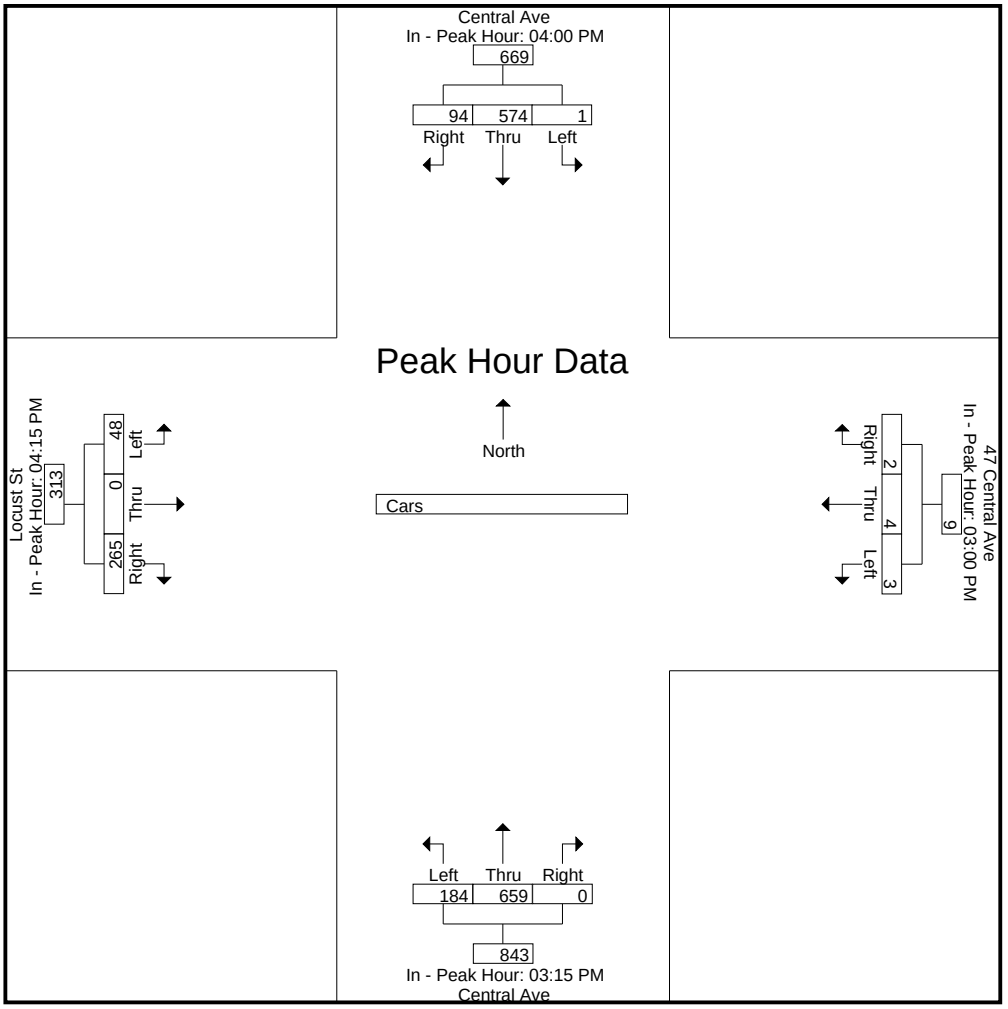
	04:00 PM				03:00 PM				03:15 PM				04:15 PM			
+0 mins.	**1**	130	26	157	1	**1**	0	2	**52**	159	0	211	9	0	66	75
+15 mins.	0	142	**30**	172	**2**	1	**2**	**5**	45	164	0	209	12	0	63	75
+30 mins.	0	137	15	152	0	1	0	1	44	159	0	203	11	0	66	77
+45 mins.	0	**165**	23	**188**	0	1	0	1	43	**177**	0	**220**	**16**	0	**70**	**86**
Total Volume	1	574	94	669	3	4	2	9	184	659	0	843	48	0	265	313
% App. Total	0.1	85.8	14.1		33.3	44.4	22.2		21.8	78.2	0		15.3	0	84.7	
PHF	.250	.870	.783	.890	.375	1.000	.250	.450	.885	.931	.000	.958	.750	.000	.946	.910

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 7

Groups Printed- Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	0	3	0	0	0	0	0	2	0	0	0	0	5
03:15 PM	0	4	0	0	0	0	0	4	0	0	0	1	9
03:30 PM	0	4	0	0	0	0	0	1	0	0	0	0	5
03:45 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
Total	0	13	0	0	0	0	0	8	0	0	0	1	22
04:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	1	1	0	0	0	0	3	0	0	0	0	5
04:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	1	0	0	0	0	4	0	1	0	0	9
05:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
05:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
05:30 PM	0	2	0	0	0	0	0	0	0	0	0	1	3
05:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	5	0	0	0	0	1	1	0	0	0	1	8
Grand Total	0	21	1	0	0	0	1	13	0	1	0	2	39
Apprch %	0	95.5	4.5	0	0	0	7.1	92.9	0	33.3	0	66.7	
Total %	0	53.8	2.6	0	0	0	2.6	33.3	0	2.6	0	5.1	

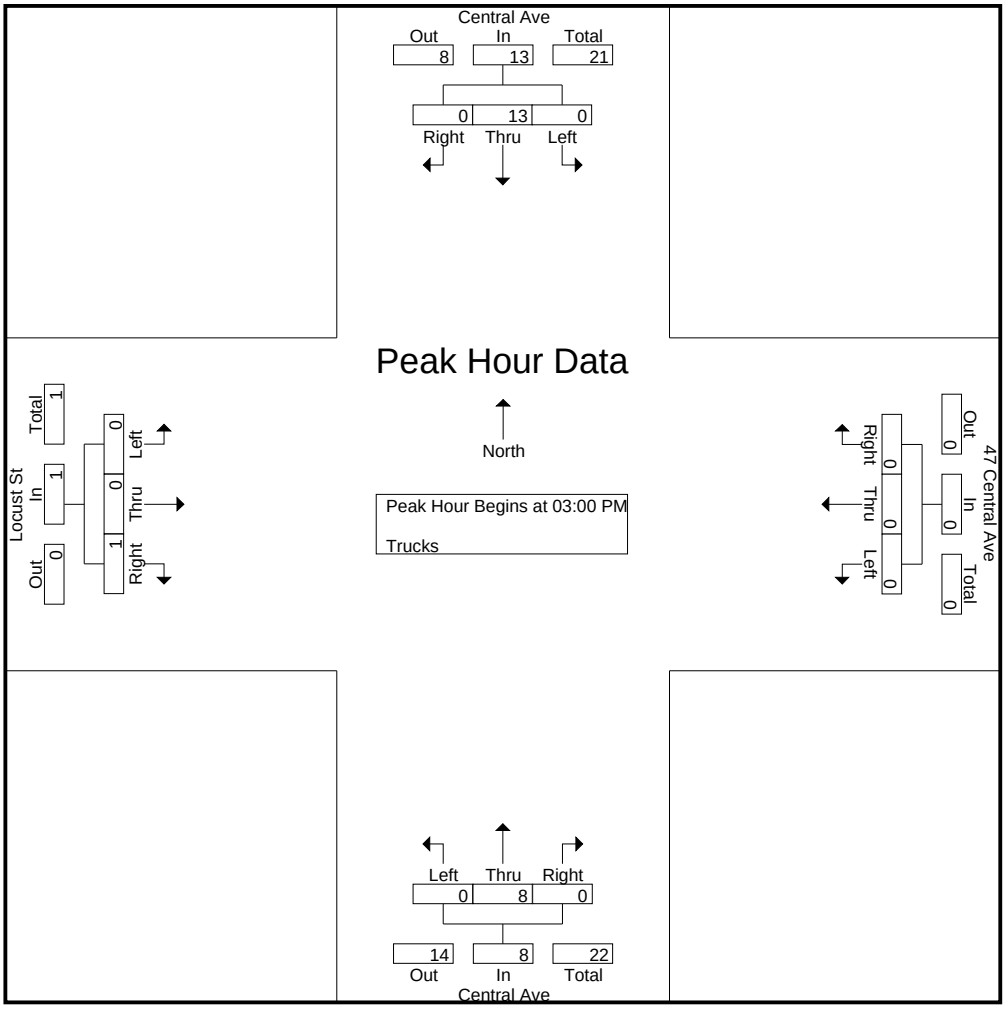
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
03:15 PM	0	**4**	0	**4**	0	0	0	0	0	**4**	0	**4**	0	0	**1**	**1**	**9**
03:30 PM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
03:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total Volume	0	13	0	13	0	0	0	0	0	8	0	8	0	0	1	1	22
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.813	.000	.813	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.250	.250	.611

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

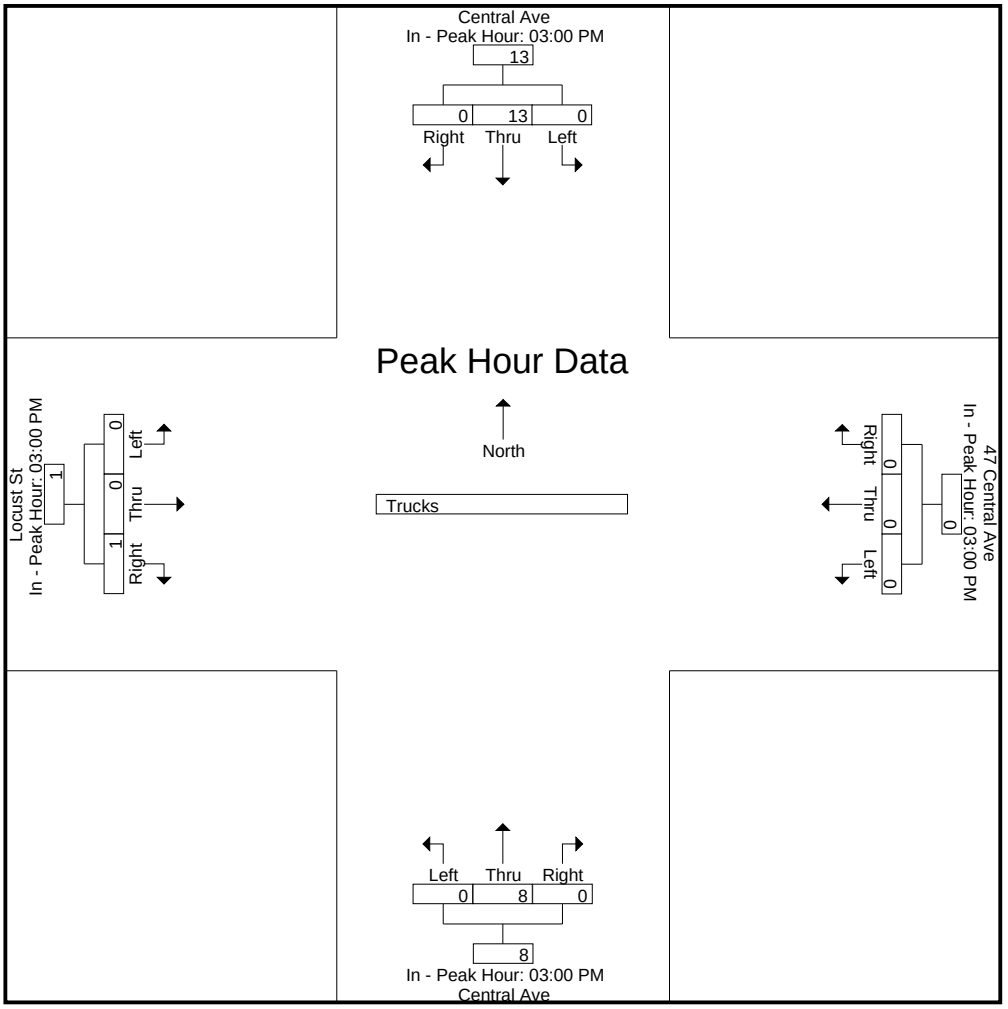
	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0
+15 mins.	0	**4**	0	**4**	0	0	0	0	0	**4**	0	**4**	0	0	**1**	**1**
+30 mins.	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	13	0	13	0	0	0	0	0	8	0	8	0	0	1	1
% App. Total	0	100	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.813	.000	.813	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.250	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025

Groups Printed- Bikes Peds

	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
03:00 PM	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	4	0	4
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	5	0	5
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	2
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	1	3
Grand Total	0	1	0	2	0	0	0	2	0	0	0	2	0	0	0	3	9	1	10
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0				
Total %	0	100	0		0	0	0		0	0	0		0	0	0		90	10	

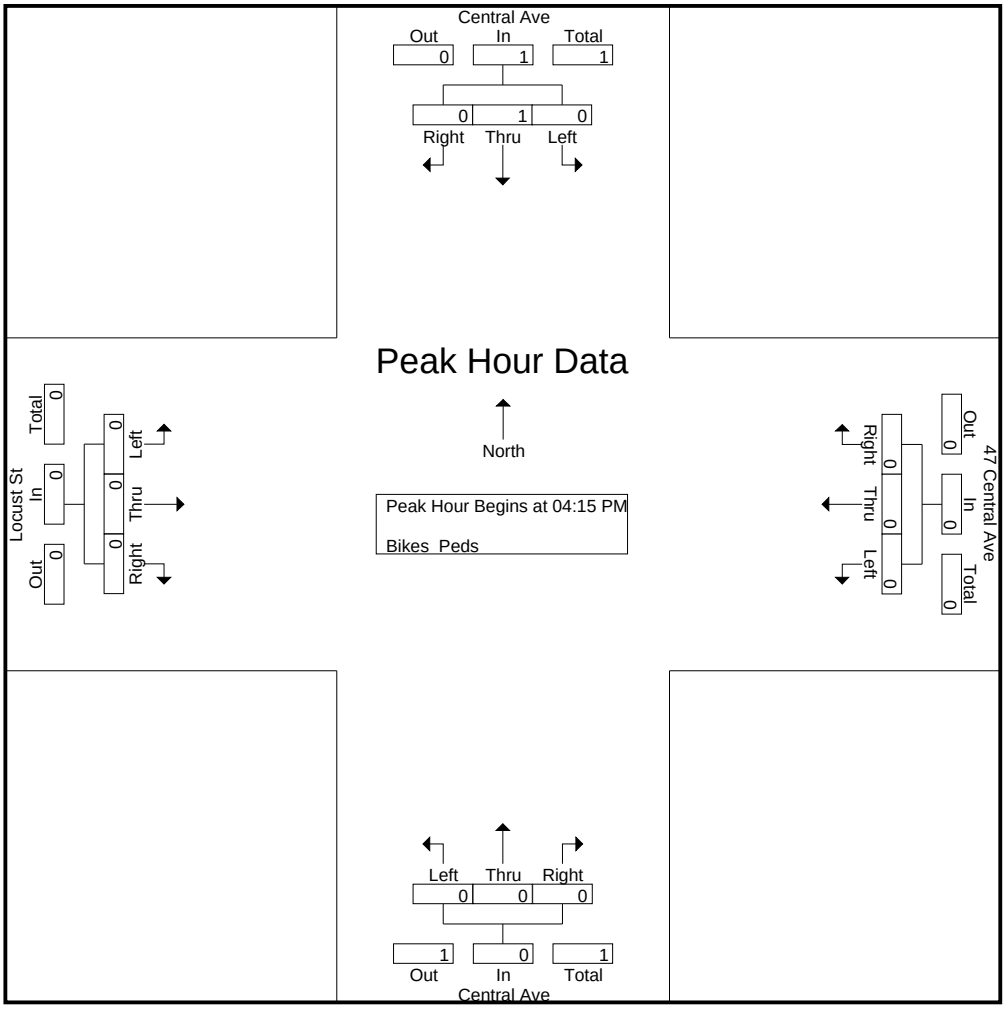
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

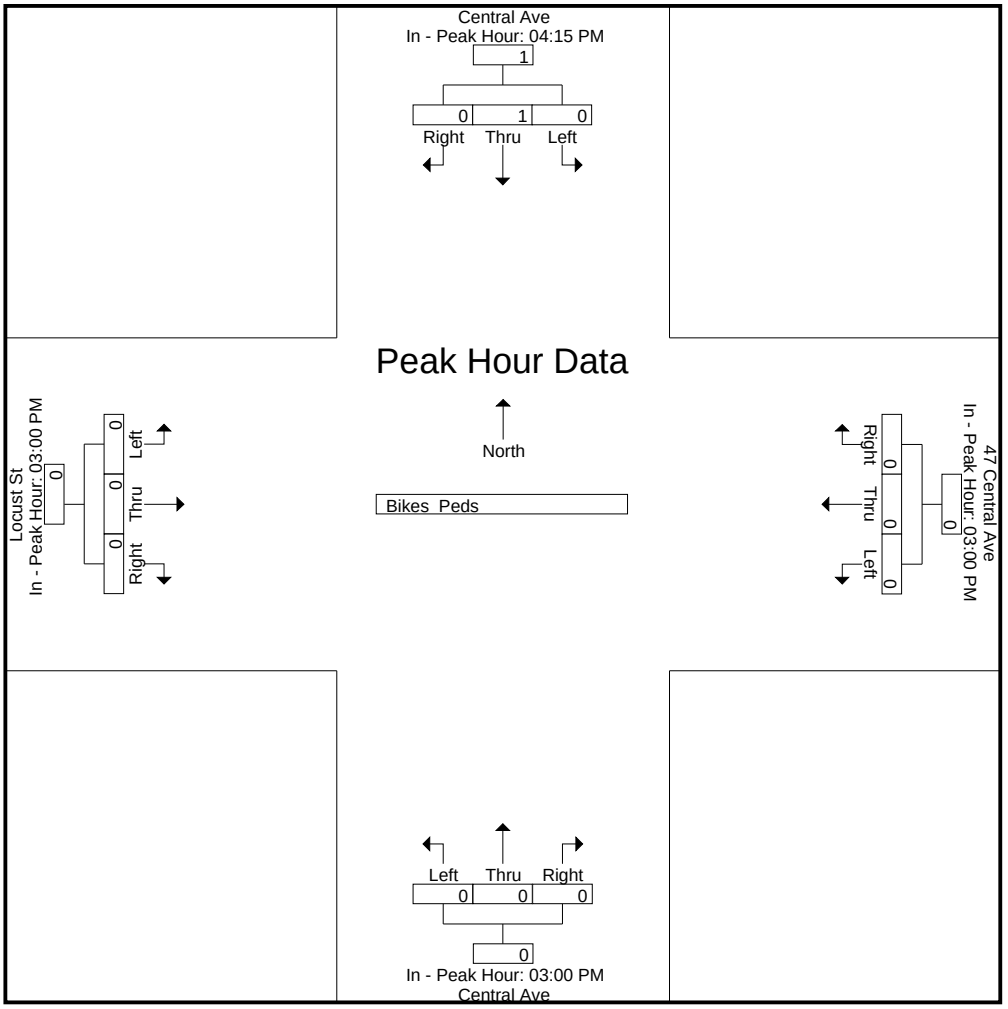
	04:15 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566002
Site Code : 10566002
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	1	111	12	0	0	2	54	130	0	2	0	61	373
11:15 AM	1	84	14	1	0	0	52	138	0	6	0	48	344
11:30 AM	1	92	16	0	1	2	44	138	0	4	0	65	363
11:45 AM	0	95	22	2	0	0	60	114	0	8	0	51	352
Total	3	382	64	3	1	4	210	520	0	20	0	225	1432
12:00 PM	0	97	14	1	0	0	43	121	0	9	0	59	344
12:15 PM	0	90	13	1	0	1	37	110	0	7	0	81	340
12:30 PM	0	98	8	0	0	1	35	105	0	5	0	64	316
12:45 PM	0	98	15	2	0	0	38	136	0	7	0	49	345
Total	0	383	50	4	0	2	153	472	0	28	0	253	1345
01:00 PM	1	67	10	1	1	4	36	140	1	5	0	58	324
01:15 PM	0	122	13	0	1	0	35	123	0	2	0	49	345
01:30 PM	0	94	13	0	1	0	25	104	0	7	1	65	310
01:45 PM	1	111	14	0	0	2	32	85	0	5	0	48	298
Total	2	394	50	1	3	6	128	452	1	19	1	220	1277
Grand Total	5	1159	164	8	4	12	491	1444	1	67	1	698	4054
Apprch %	0.4	87.3	12.3	33.3	16.7	50	25.4	74.6	0.1	8.7	0.1	91.1	
Total %	0.1	28.6	4	0.2	0.1	0.3	12.1	35.6	0	1.7	0	17.2	
Cars	5	1153	164	8	4	12	489	1437	1	67	1	698	4039
% Cars	100	99.5	100	100	100	100	99.6	99.5	100	100	100	100	99.6
Trucks	0	6	0	0	0	0	2	7	0	0	0	0	15
% Trucks	0	0.5	0	0	0	0	0.4	0.5	0	0	0	0	0.4

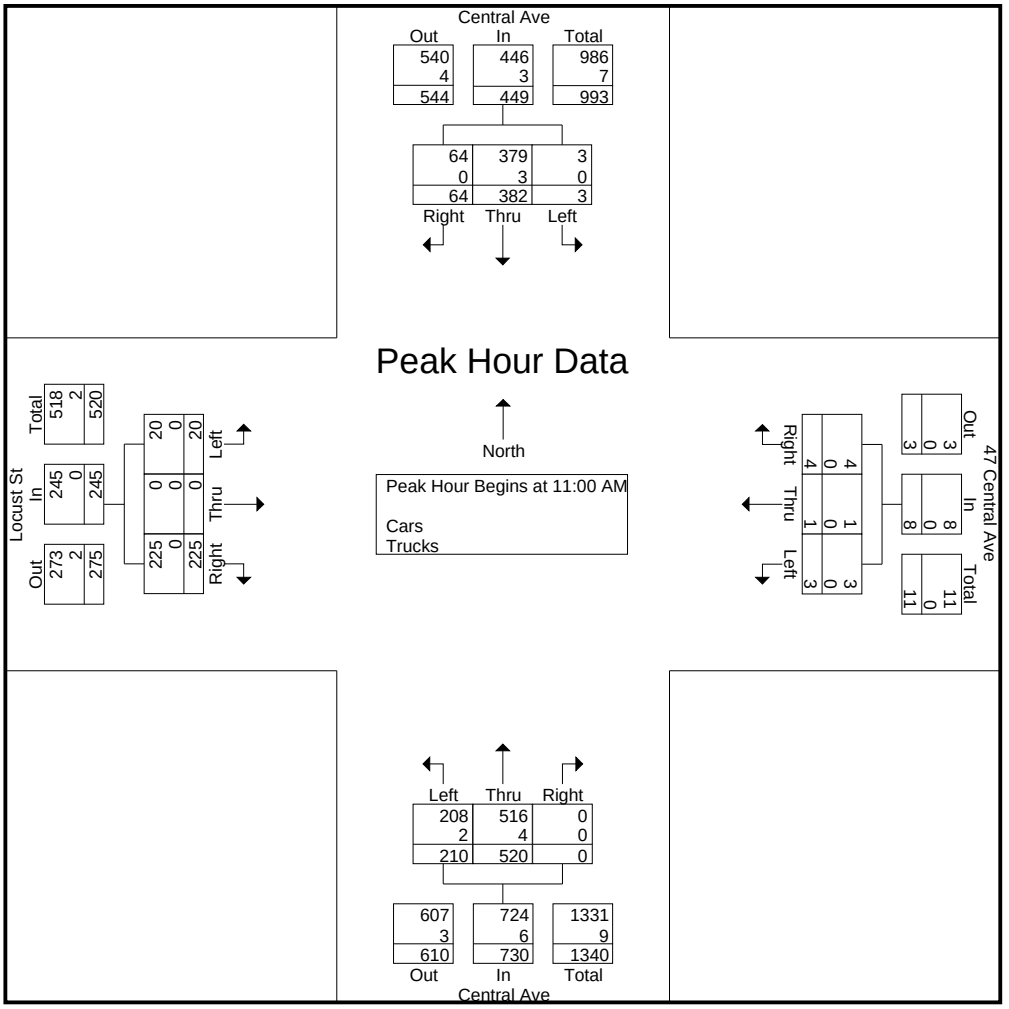
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	**1**	**111**	12	**124**	0	0	**2**	2	54	130	0	184	2	0	61	63	**373**
11:15 AM	1	84	14	99	1	0	0	1	52	**138**	0	**190**	6	0	48	54	344
11:30 AM	1	92	16	109	0	**1**	2	**3**	44	138	0	182	4	0	**65**	**69**	363
11:45 AM	0	95	**22**	117	**2**	0	0	2	**60**	114	0	174	**8**	0	51	59	352
Total Volume	3	382	64	449	3	1	4	8	210	520	0	730	20	0	225	245	1432
% App. Total	0.7	85.1	14.3		37.5	12.5	50		28.8	71.2	0		8.2	0	91.8		
PHF	.750	.860	.727	.905	.375	.250	.500	.667	.875	.942	.000	.961	.625	.000	.865	.888	.960
Cars	3	379	64	446	3	1	4	8	208	516	0	724	20	0	225	245	1423
% Cars	100	99.2	100	99.3	100	100	100	100	99.0	99.2	0	99.2	100	0	100	100	99.4
Trucks	0	3	0	3	0	0	0	0	2	4	0	6	0	0	0	0	9
% Trucks	0	0.8	0	0.7	0	0	0	0	1.0	0.8	0	0.8	0	0	0	0	0.6

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

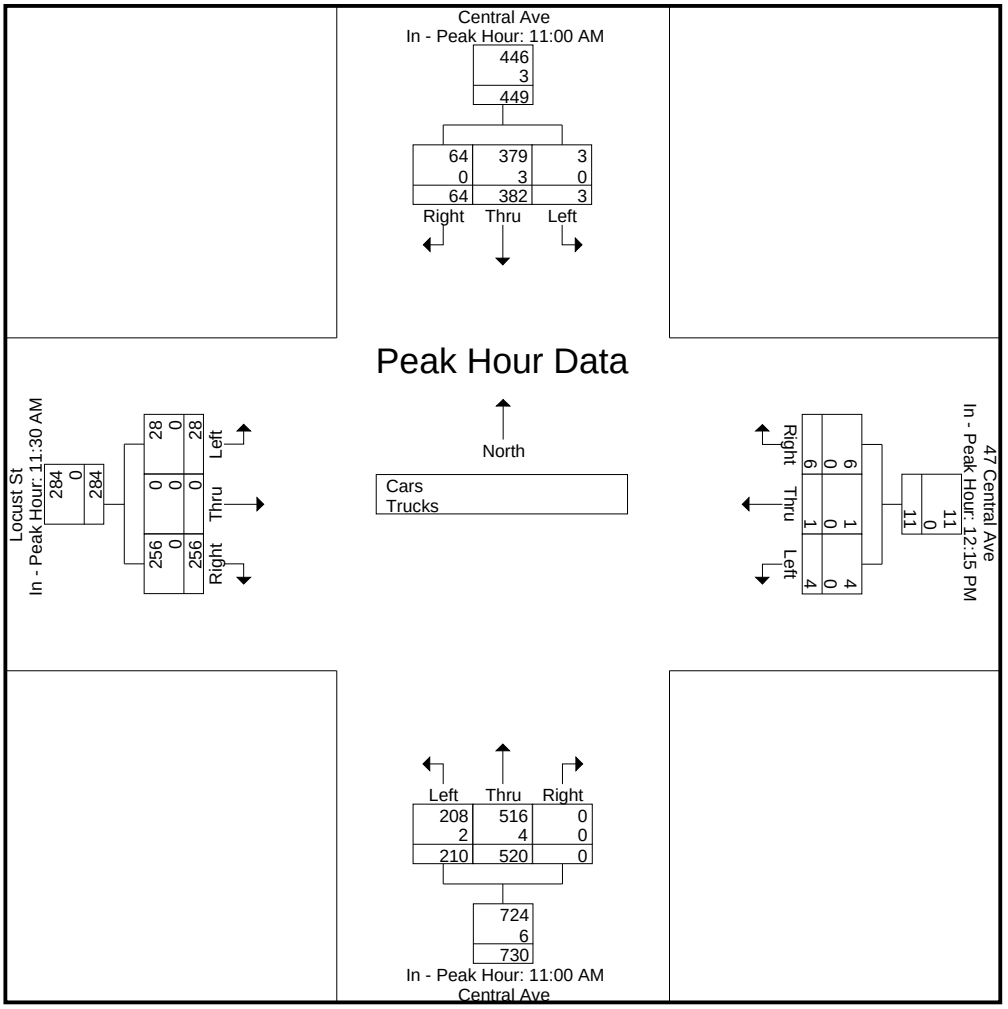
	11:00 AM				12:15 PM				11:00 AM				11:30 AM			
+0 mins.	**1**	**111**	12	**124**	1	0	1	2	54	130	0	184	4	0	65	69
+15 mins.	1	84	14	99	0	0	1	1	52	**138**	0	**190**	8	0	51	59
+30 mins.	1	92	16	109	**2**	0	0	2	44	138	0	182	**9**	0	59	68
+45 mins.	0	95	**22**	117	1	**1**	**4**	**6**	**60**	114	0	174	7	0	**81**	**88**
Total Volume	3	382	64	449	4	1	6	11	210	520	0	730	28	0	256	284
% App. Total	0.7	85.1	14.3		36.4	9.1	54.5		28.8	71.2	0		9.9	0	90.1	
PHF	.750	.860	.727	.905	.500	.250	.375	.458	.875	.942	.000	.961	.778	.000	.790	.807
Cars	3	379	64	446	4	1	6	11	208	516	0	724	28	0	256	284
% Cars	100	99.2	100	99.3	100	100	100	100	99	99.2	0	99.2	100	0	100	100
Trucks	0	3	0	3	0	0	0	0	2	4	0	6	0	0	0	0
% Trucks	0	0.8	0	0.7	0	0	0	0	1	0.8	0	0.8	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	1	111	12	0	0	2	53	129	0	2	0	61	371
11:15 AM	1	83	14	1	0	0	52	136	0	6	0	48	341
11:30 AM	1	90	16	0	1	2	43	137	0	4	0	65	359
11:45 AM	0	95	22	2	0	0	60	114	0	8	0	51	352
Total	3	379	64	3	1	4	208	516	0	20	0	225	1423
12:00 PM	0	96	14	1	0	0	43	121	0	9	0	59	343
12:15 PM	0	90	13	1	0	1	37	110	0	7	0	81	340
12:30 PM	0	98	8	0	0	1	35	103	0	5	0	64	314
12:45 PM	0	98	15	2	0	0	38	135	0	7	0	49	344
Total	0	382	50	4	0	2	153	469	0	28	0	253	1341
01:00 PM	1	67	10	1	1	4	36	140	1	5	0	58	324
01:15 PM	0	122	13	0	1	0	35	123	0	2	0	49	345
01:30 PM	0	92	13	0	1	0	25	104	0	7	1	65	308
01:45 PM	1	111	14	0	0	2	32	85	0	5	0	48	298
Total	2	392	50	1	3	6	128	452	1	19	1	220	1275
Grand Total	5	1153	164	8	4	12	489	1437	1	67	1	698	4039
Apprch %	0.4	87.2	12.4	33.3	16.7	50	25.4	74.6	0.1	8.7	0.1	91.1	
Total %	0.1	28.5	4.1	0.2	0.1	0.3	12.1	35.6	0	1.7	0	17.3	

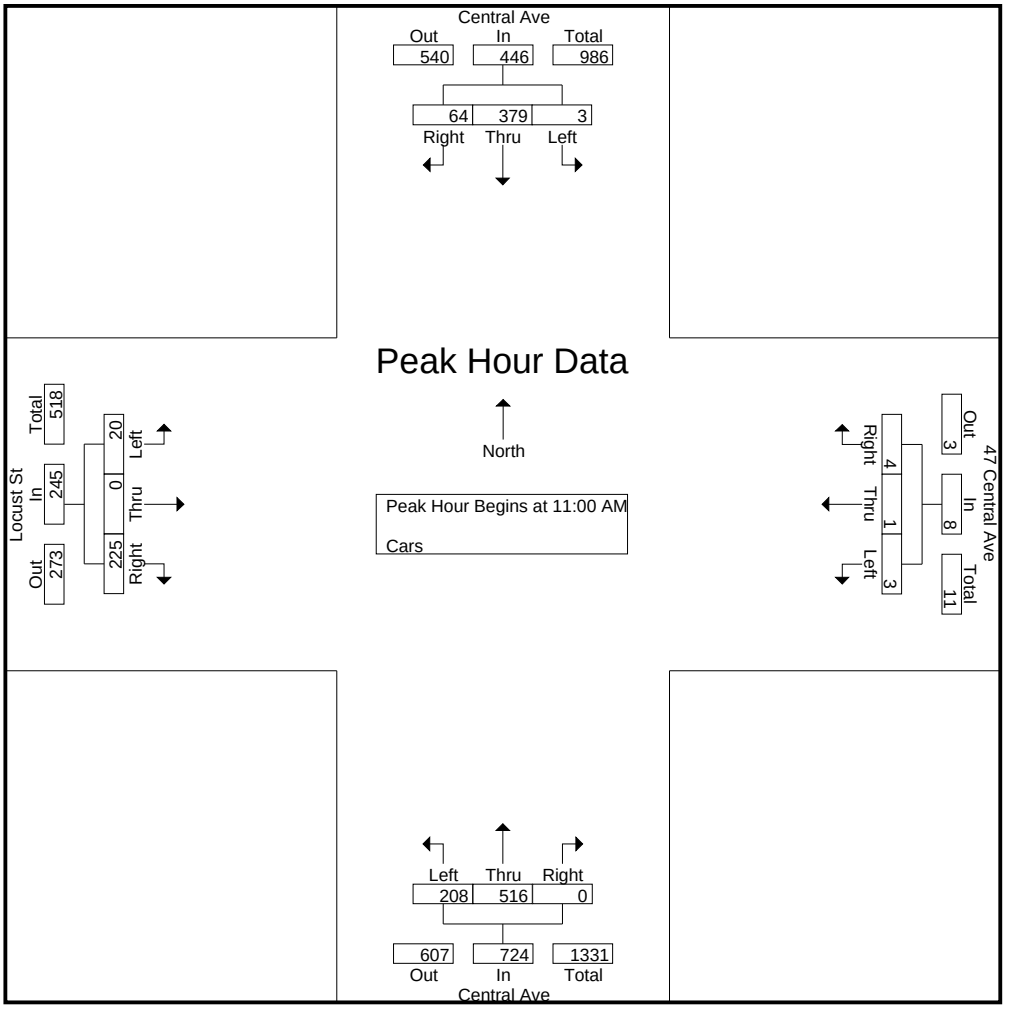
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	**1**	**111**	12	**124**	0	0	**2**	2	53	129	0	182	2	0	61	63	**371**
11:15 AM	1	83	14	98	1	0	0	1	52	136	0	**188**	6	0	48	54	341
11:30 AM	1	90	16	107	0	**1**	2	**3**	43	**137**	0	180	4	0	**65**	**69**	359
11:45 AM	0	95	**22**	117	**2**	0	0	2	**60**	114	0	174	**8**	0	51	59	352
Total Volume	3	379	64	446	3	1	4	8	208	516	0	724	20	0	225	245	1423
% App. Total	0.7	85	14.3		37.5	12.5	50		28.7	71.3	0		8.2	0	91.8		
PHF	.750	.854	.727	.899	.375	.250	.500	.667	.867	.942	.000	.963	.625	.000	.865	.888	.959

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 5



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

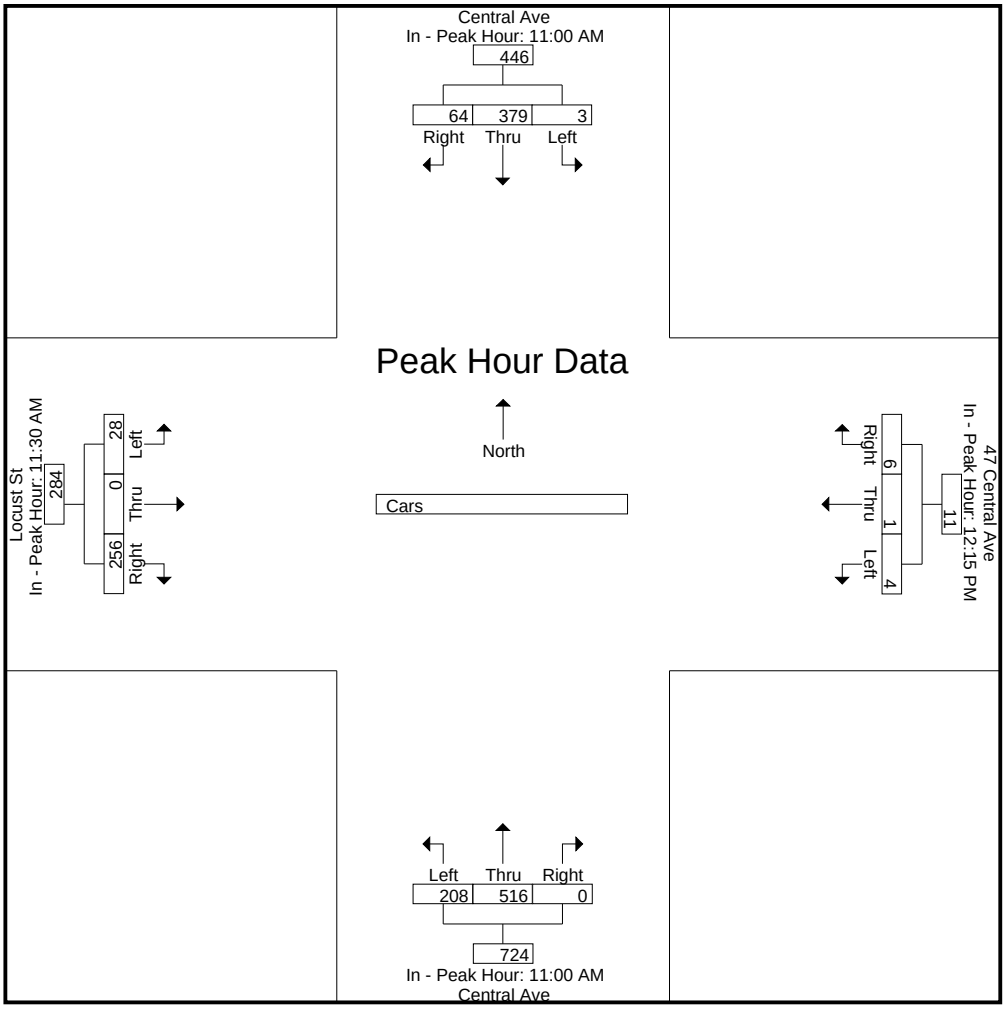
	11:00 AM				12:15 PM				11:00 AM				11:30 AM			
+0 mins.	**1**	**111**	12	**124**	1	0	1	2	53	129	0	182	4	0	65	69
+15 mins.	1	83	14	98	0	0	1	1	52	136	0	**188**	8	0	51	59
+30 mins.	1	90	16	107	**2**	0	0	2	43	**137**	0	180	**9**	0	59	68
+45 mins.	0	95	**22**	117	1	**1**	**4**	**6**	**60**	114	0	174	7	0	**81**	**88**
Total Volume	3	379	64	446	4	1	6	11	208	516	0	724	28	0	256	284
% App. Total	0.7	85	14.3		36.4	9.1	54.5		28.7	71.3	0		9.9	0	90.1	
PHF	.750	.854	.727	.899	.500	.250	.375	.458	.867	.942	.000	.963	.778	.000	.790	.807

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025

Groups Printed- Trucks

	Central Ave From North			47 Central Ave From East			Central Ave From South			Locust St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
11:15 AM	0	1	0	0	0	0	0	2	0	0	0	0	3
11:30 AM	0	2	0	0	0	0	1	1	0	0	0	0	4
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	2	4	0	0	0	0	9
12:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	1	0	0	0	0	0	3	0	0	0	0	4
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	6	0	0	0	0	2	7	0	0	0	0	15
Apprch %	0	100	0	0	0	0	22.2	77.8	0	0	0	0	
Total %	0	40	0	0	0	0	13.3	46.7	0	0	0	0	

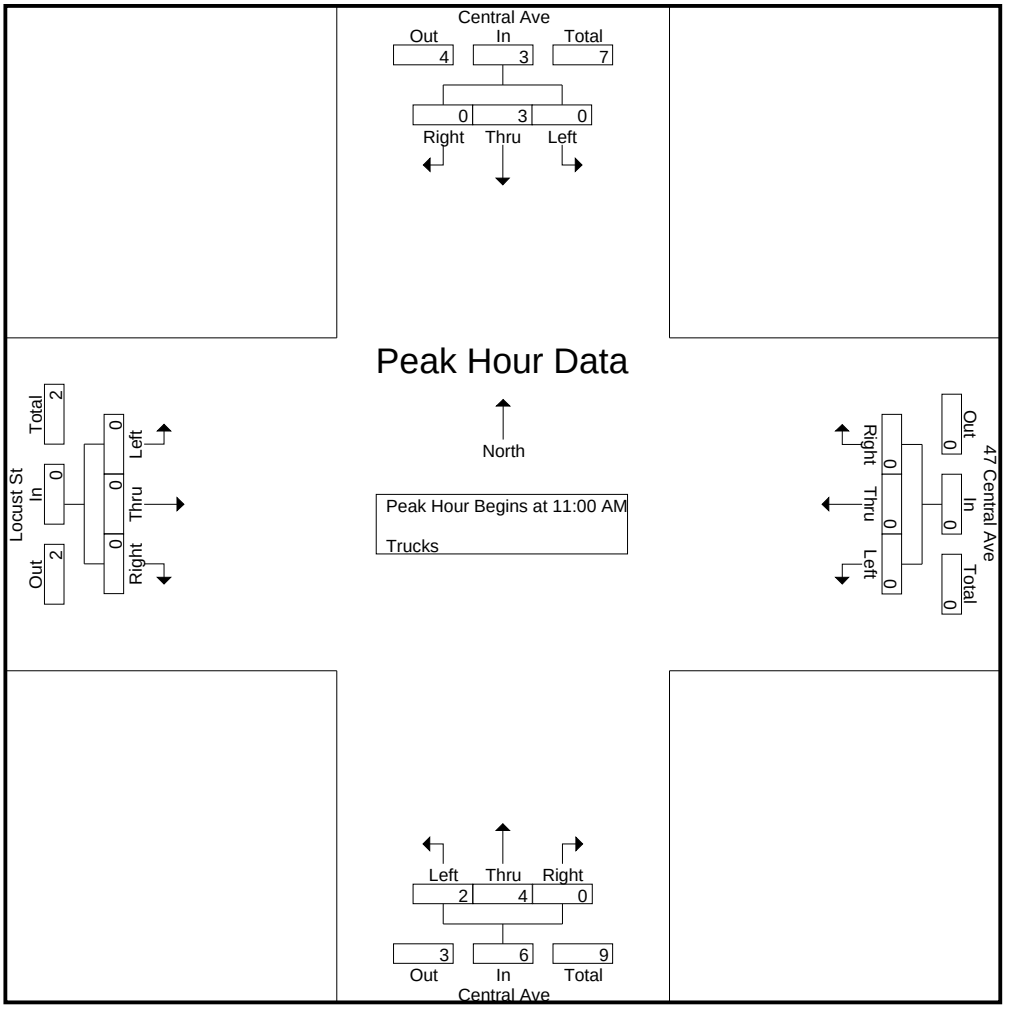
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	0	0	**1**	1	0	**2**	0	0	0	0	2
11:15 AM	0	1	0	1	0	0	0	0	0	**2**	0	2	0	0	0	0	3
11:30 AM	0	**2**	0	**2**	0	0	0	0	1	1	0	2	0	0	0	0	**4**
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	0	3	0	0	0	0	2	4	0	6	0	0	0	0	9
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	0	0		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.500	.500	.000	.750	.000	.000	.000	.000	.563

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 8



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

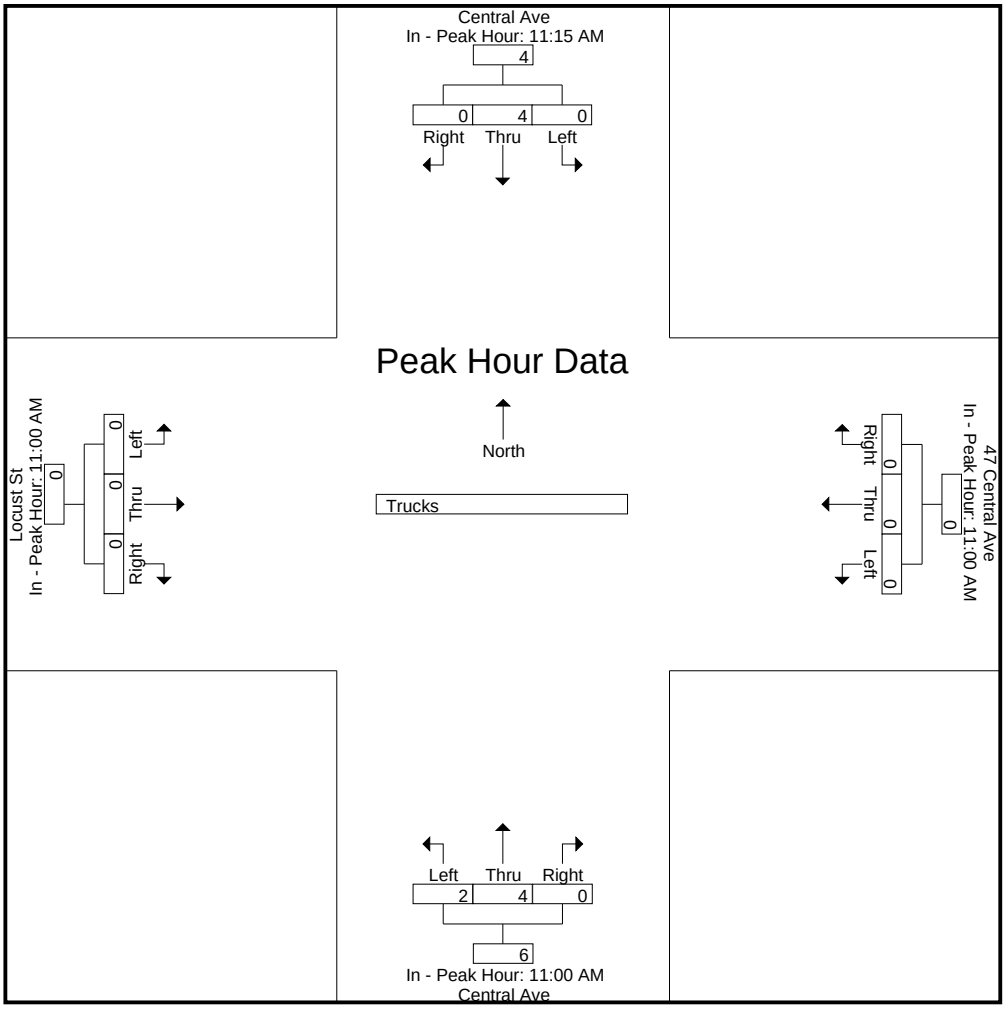
	11:15 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	**1**	1	0	**2**	0	0	0	0
+15 mins.	0	**2**	0	**2**	0	0	0	0	0	**2**	0	2	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	0	4	0	0	0	0	2	4	0	6	0	0	0	0
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.500	.500	.000	.750	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 10

Groups Printed- Bikes Peds

	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	4	0	4
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
01:00 PM	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	3	4
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	4	4	3	7
Grand Total	0	2	0	1	0	0	0	1	1	0	0	0	0	0	0	7	9	3	12
Apprch %	0	100	0		0	0	0		100	0	0		0	0	0				
Total %	0	66.7	0		0	0	0		33.3	0	0		0	0	0		75	25	

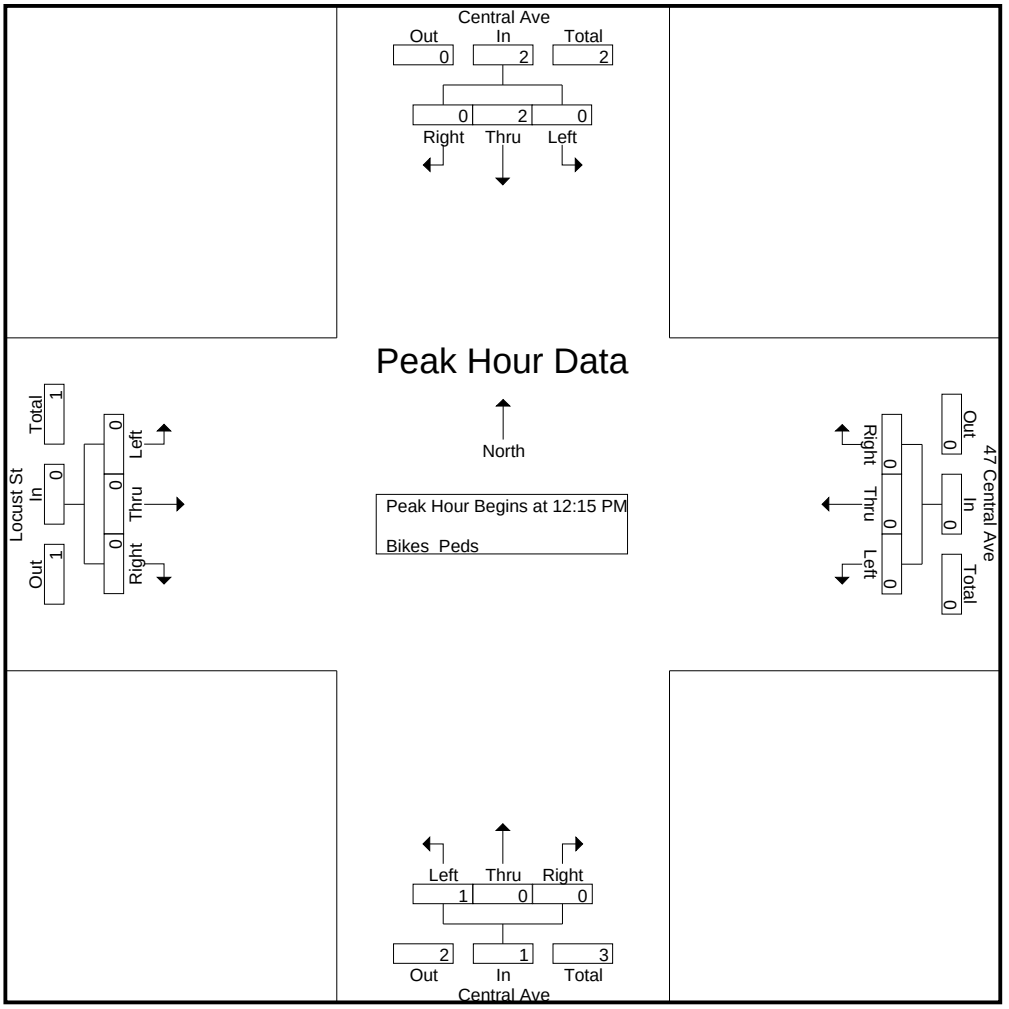
	Central Ave From North				47 Central Ave From East				Central Ave From South				Locust St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	**2**	0	**2**	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**3**
Total Volume	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 11



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

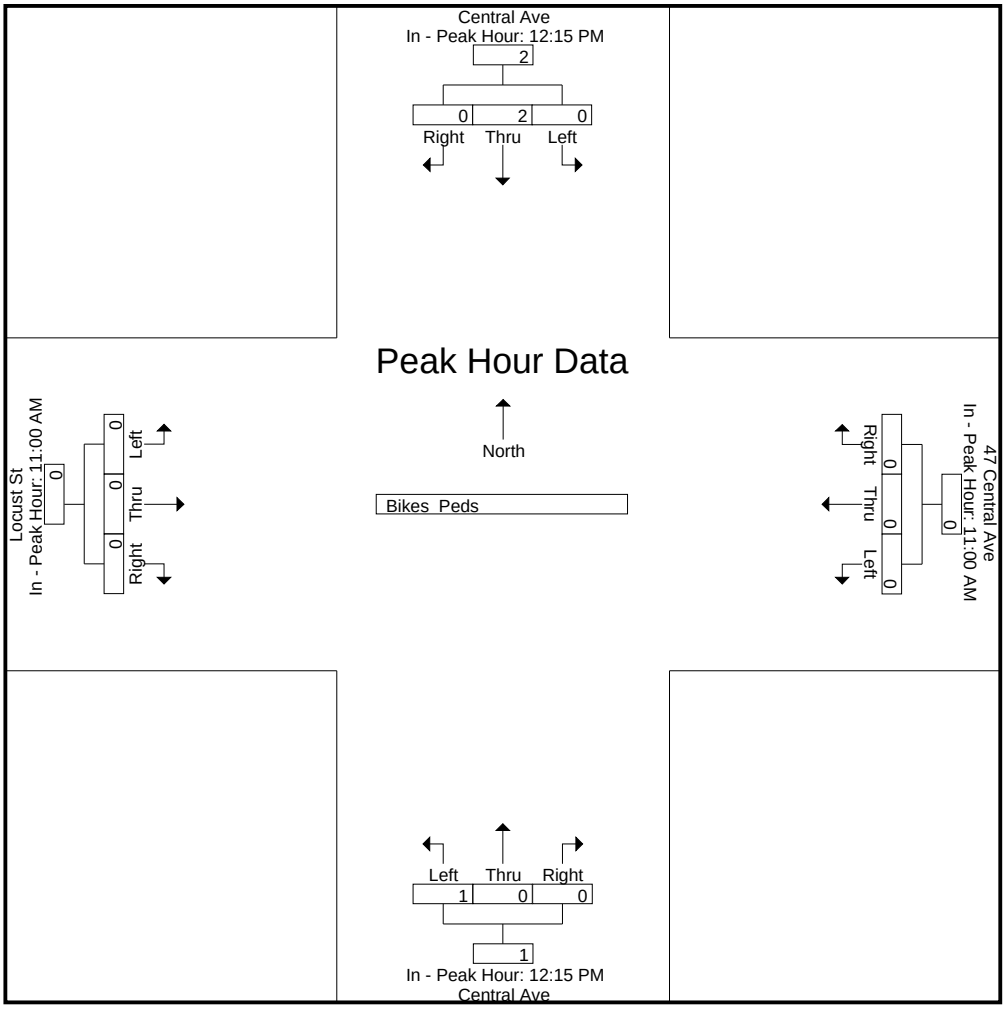
	12:15 PM				11:00 AM				12:15 PM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	**2**	0	**2**	0	0	0	0	**1**	0	0	**1**	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0
% App. Total	0	100	0		0	0	0		100	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : 47 Central Ave / Locust St
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S2
Site Code : 10566002
Start Date : 12/20/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	146	38	3	4	4	13	102	0	32	2	92	436
07:15 AM	0	124	40	2	4	2	16	171	0	35	1	92	487
07:30 AM	1	125	59	3	7	1	18	160	1	43	3	89	510
07:45 AM	0	134	53	2	4	1	11	174	1	56	4	119	559
Total	1	529	190	10	19	8	58	607	2	166	10	392	1992
08:00 AM	1	110	62	3	2	4	16	170	4	24	1	64	461
08:15 AM	2	95	69	2	5	0	13	216	0	44	1	53	500
08:30 AM	0	91	59	1	3	2	10	139	1	34	1	42	383
08:45 AM	1	104	47	5	2	1	11	144	0	36	2	45	398
Total	4	400	237	11	12	7	50	669	5	138	5	204	1742
Grand Total	5	929	427	21	31	15	108	1276	7	304	15	596	3734
Apprch %	0.4	68.3	31.4	31.3	46.3	22.4	7.8	91.7	0.5	33.2	1.6	65.1	
Total %	0.1	24.9	11.4	0.6	0.8	0.4	2.9	34.2	0.2	8.1	0.4	16	
Cars	5	897	420	20	31	15	107	1223	7	303	15	577	3620
% Cars	100	96.6	98.4	95.2	100	100	99.1	95.8	100	99.7	100	96.8	96.9
Trucks	0	32	7	1	0	0	1	53	0	1	0	19	114
% Trucks	0	3.4	1.6	4.8	0	0	0.9	4.2	0	0.3	0	3.2	3.1

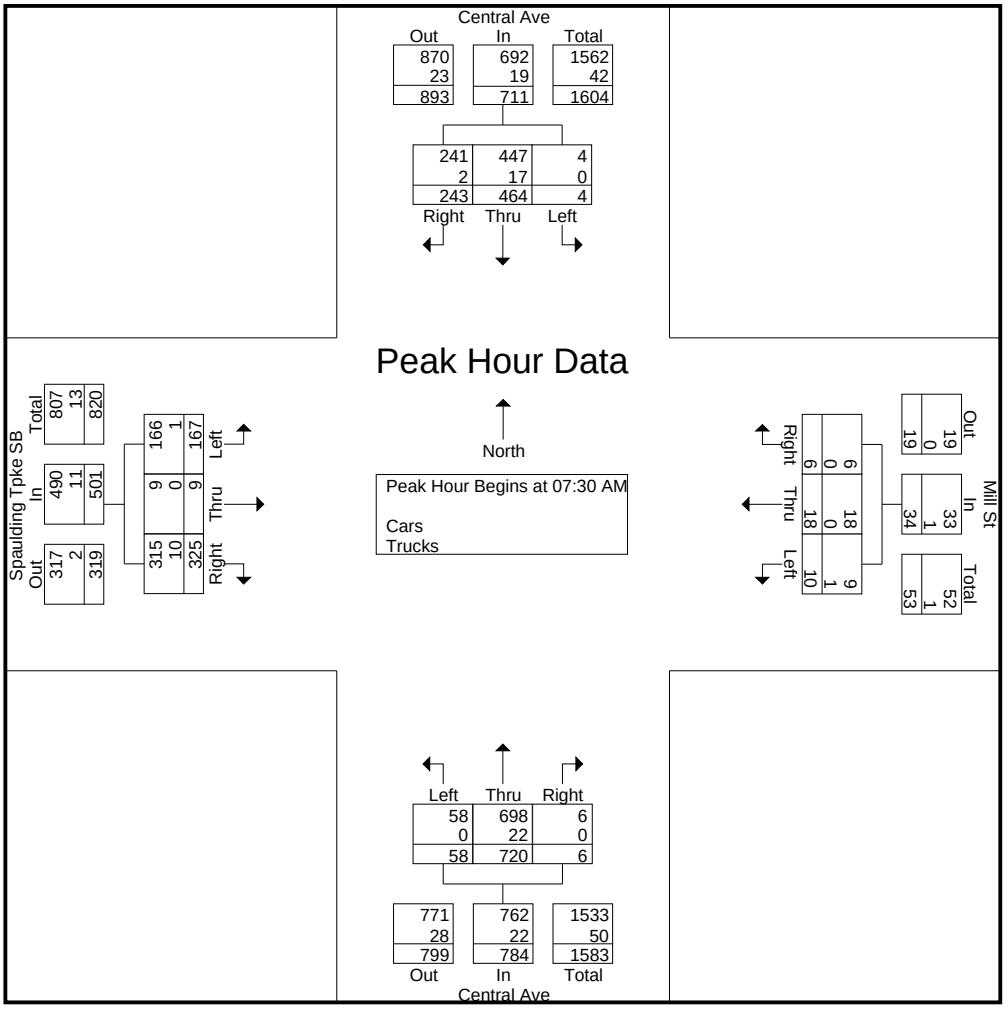
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	125	59	185	**3**	**7**	1	**11**	**18**	160	1	179	43	3	89	135	510
07:45 AM	0	**134**	53	**187**	2	4	1	7	11	174	1	186	**56**	**4**	**119**	**179**	**559**
08:00 AM	1	110	62	173	3	2	**4**	9	16	170	**4**	190	24	1	64	89	461
08:15 AM	**2**	95	**69**	166	2	5	0	7	13	**216**	0	**229**	44	1	53	98	500
Total Volume	4	464	243	711	10	18	6	34	58	720	6	784	167	9	325	501	2030
% App. Total	0.6	65.3	34.2		29.4	52.9	17.6		7.4	91.8	0.8		33.3	1.8	64.9		
PHF	.500	.866	.880	.951	.833	.643	.375	.773	.806	.833	.375	.856	.746	.563	.683	.700	.908
Cars	4	447	241	692	9	18	6	33	58	698	6	762	166	9	315	490	1977
% Cars	100	96.3	99.2	97.3	90.0	100	100	97.1	100	96.9	100	97.2	99.4	100	96.9	97.8	97.4
Trucks	0	17	2	19	1	0	0	1	0	22	0	22	1	0	10	11	53
% Trucks	0	3.7	0.8	2.7	10.0	0	0	2.9	0	3.1	0	2.8	0.6	0	3.1	2.2	2.6

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

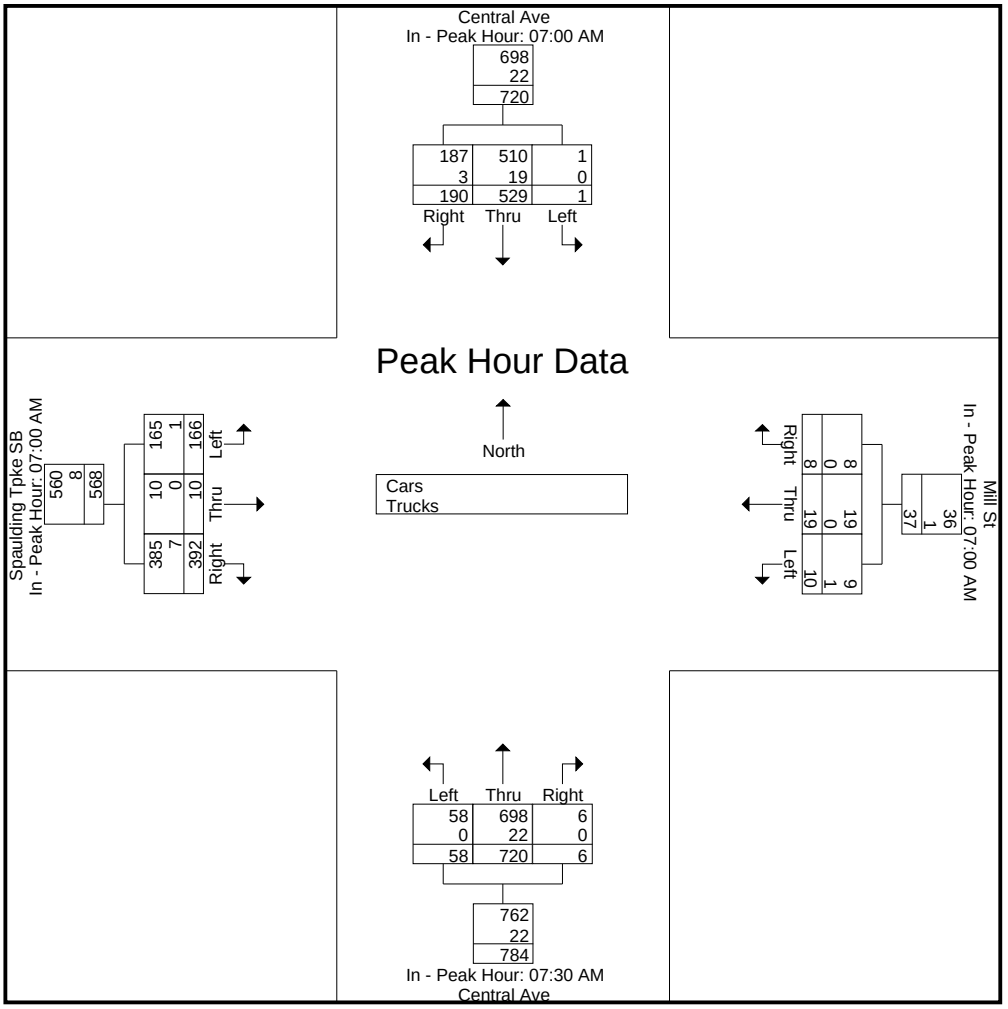
	07:00 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	**146**	38	184	**3**	4	**4**	**11**	**18**	160	1	179	32	2	92	126
+15 mins.	0	124	40	164	2	4	2	8	11	174	1	186	35	1	92	128
+30 mins.	**1**	125	**59**	185	3	**7**	1	11	16	170	**4**	190	43	3	89	135
+45 mins.	0	134	53	**187**	2	4	1	7	13	**216**	0	**229**	**56**	**4**	**119**	**179**
Total Volume	1	529	190	720	10	19	8	37	58	720	6	784	166	10	392	568
% App. Total	0.1	73.5	26.4		27	51.4	21.6		7.4	91.8	0.8		29.2	1.8	69	
PHF	.250	.906	.805	.963	.833	.679	.500	.841	.806	.833	.375	.856	.741	.625	.824	.793
Cars	1	510	187	698	9	19	8	36	58	698	6	762	165	10	385	560
% Cars	100	96.4	98.4	96.9	90	100	100	97.3	100	96.9	100	97.2	99.4	100	98.2	98.6
Trucks	0	19	3	22	1	0	0	1	0	22	0	22	1	0	7	8
% Trucks	0	3.6	1.6	3.1	10	0	0	2.7	0	3.1	0	2.8	0.6	0	1.8	1.4

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	138	36	3	4	4	12	100	0	32	2	90	421
07:15 AM	0	121	40	2	4	2	16	153	0	35	1	91	465
07:30 AM	1	122	59	2	7	1	18	157	1	43	3	86	500
07:45 AM	0	129	52	2	4	1	11	168	1	55	4	118	545
Total	1	510	187	9	19	8	57	578	2	165	10	385	1931
08:00 AM	1	104	61	3	2	4	16	160	4	24	1	60	440
08:15 AM	2	92	69	2	5	0	13	213	0	44	1	51	492
08:30 AM	0	90	57	1	3	2	10	133	1	34	1	37	369
08:45 AM	1	101	46	5	2	1	11	139	0	36	2	44	388
Total	4	387	233	11	12	7	50	645	5	138	5	192	1689
Grand Total	5	897	420	20	31	15	107	1223	7	303	15	577	3620
Apprch %	0.4	67.9	31.8	30.3	47	22.7	8	91.5	0.5	33.9	1.7	64.5	
Total %	0.1	24.8	11.6	0.6	0.9	0.4	3	33.8	0.2	8.4	0.4	15.9	

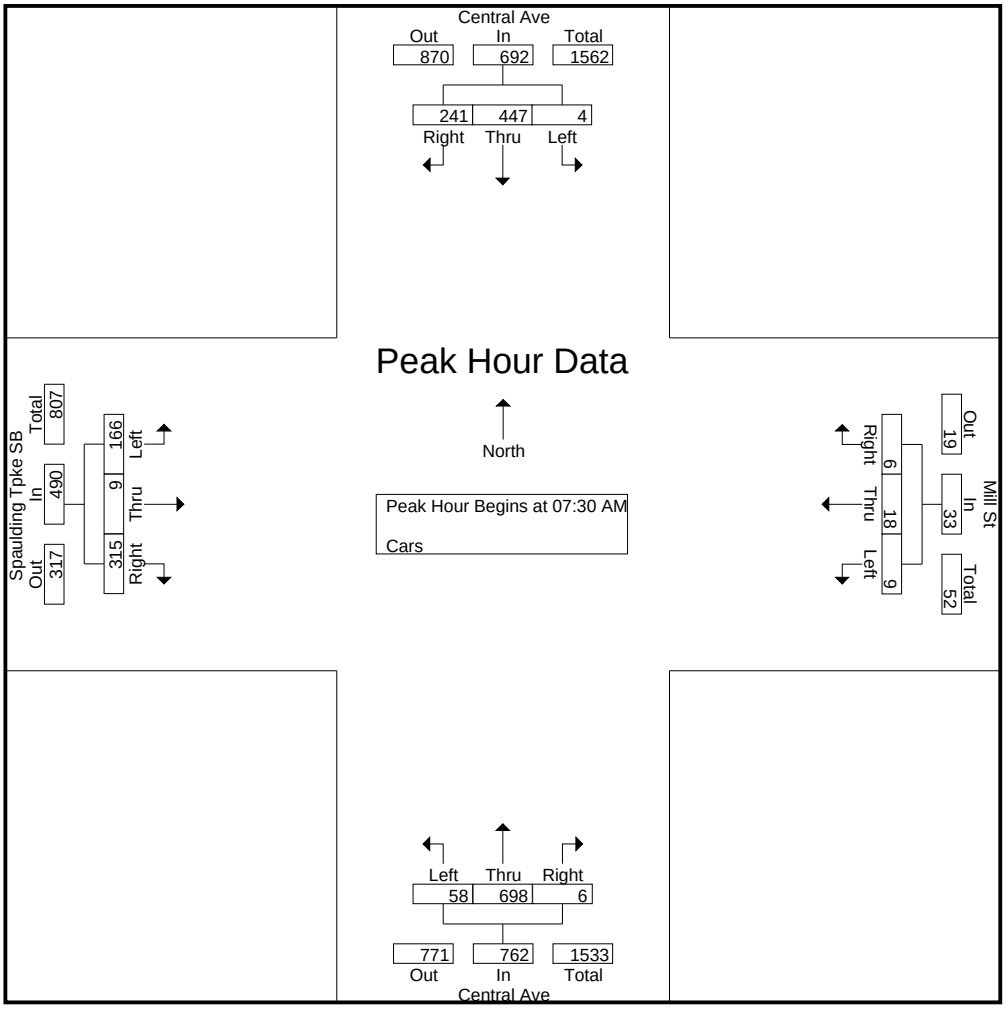
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	122	59	**182**	2	**7**	1	**10**	**18**	157	1	176	43	3	86	132	500
07:45 AM	0	**129**	52	181	2	4	1	7	11	168	1	180	**55**	**4**	**118**	**177**	**545**
08:00 AM	1	104	61	166	**3**	2	**4**	9	16	160	**4**	180	24	1	60	85	440
08:15 AM	**2**	92	**69**	163	2	5	0	7	13	**213**	0	**226**	44	1	51	96	492
Total Volume	4	447	241	692	9	18	6	33	58	698	6	762	166	9	315	490	1977
% App. Total	0.6	64.6	34.8		27.3	54.5	18.2		7.6	91.6	0.8		33.9	1.8	64.3		
PHF	.500	.866	.873	.951	.750	.643	.375	.825	.806	.819	.375	.843	.755	.563	.667	.692	.907

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

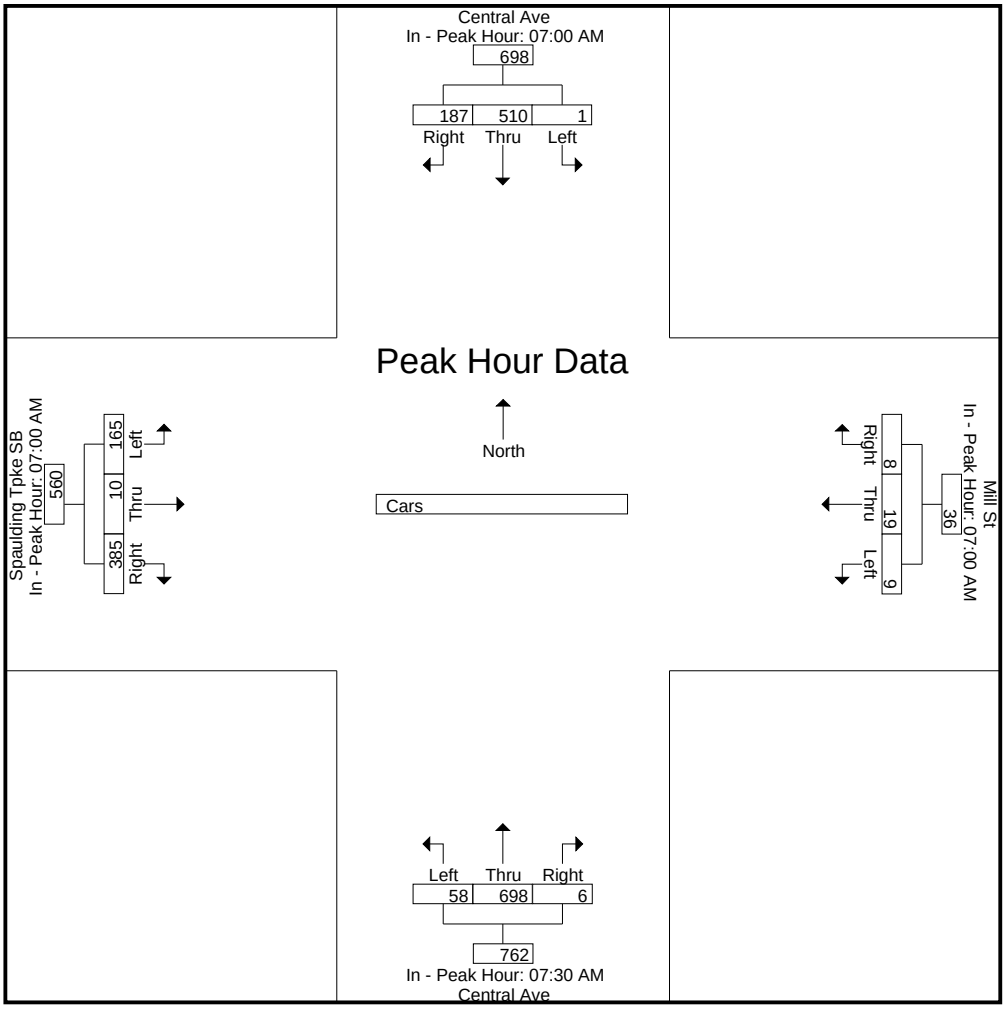
	07:00 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	**138**	36	174	**3**	4	**4**	**11**	**18**	157	1	176	32	2	90	124
+15 mins.	0	121	40	161	2	4	2	8	11	168	1	180	35	1	91	127
+30 mins.	**1**	122	**59**	**182**	2	**7**	1	10	16	160	**4**	180	43	3	86	132
+45 mins.	0	129	52	181	2	4	1	7	13	**213**	0	**226**	**55**	**4**	**118**	**177**
Total Volume	1	510	187	698	9	19	8	36	58	698	6	762	165	10	385	560
% App. Total	0.1	73.1	26.8		25	52.8	22.2		7.6	91.6	0.8		29.5	1.8	68.8	
PHF	.250	.924	.792	.959	.750	.679	.500	.818	.806	.819	.375	.843	.750	.625	.816	.791

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025

Groups Printed- Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	8	2	0	0	0	1	2	0	0	0	2	15
07:15 AM	0	3	0	0	0	0	0	18	0	0	0	1	22
07:30 AM	0	3	0	1	0	0	0	3	0	0	0	3	10
07:45 AM	0	5	1	0	0	0	0	6	0	1	0	1	14
Total	0	19	3	1	0	0	1	29	0	1	0	7	61
08:00 AM	0	6	1	0	0	0	0	10	0	0	0	4	21
08:15 AM	0	3	0	0	0	0	0	3	0	0	0	2	8
08:30 AM	0	1	2	0	0	0	0	6	0	0	0	5	14
08:45 AM	0	3	1	0	0	0	0	5	0	0	0	1	10
Total	0	13	4	0	0	0	0	24	0	0	0	12	53
Grand Total	0	32	7	1	0	0	1	53	0	1	0	19	114
Apprch %	0	82.1	17.9	100	0	0	1.9	98.1	0	5	0	95	
Total %	0	28.1	6.1	0.9	0	0	0.9	46.5	0	0.9	0	16.7	

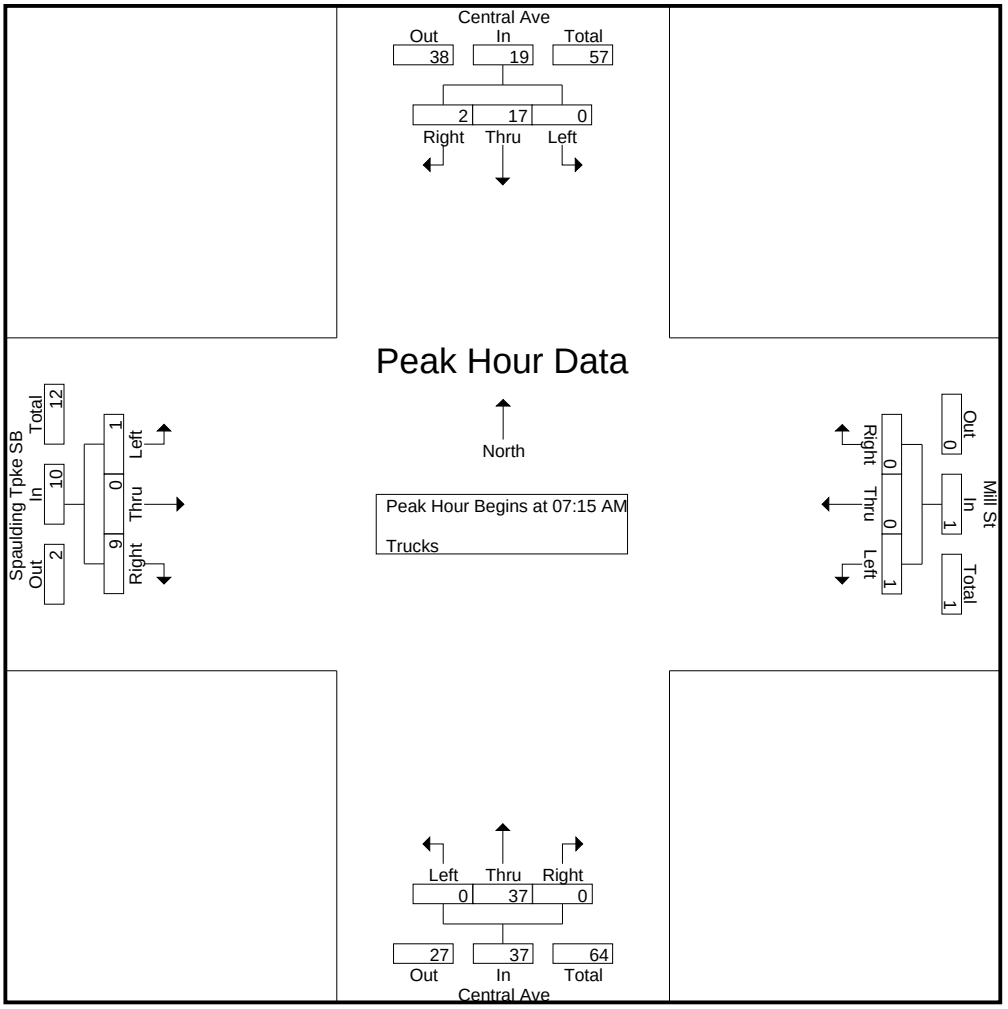
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	3	0	3	0	0	0	0	0	**18**	0	**18**	0	0	1	1	**22**
07:30 AM	0	3	0	3	**1**	0	0	**1**	0	3	0	3	0	0	3	3	10
07:45 AM	0	5	**1**	6	0	0	0	0	0	6	0	6	**1**	0	1	2	14
08:00 AM	0	**6**	1	**7**	0	0	0	0	0	10	0	10	0	0	**4**	**4**	21
Total Volume	0	17	2	19	1	0	0	1	0	37	0	37	1	0	9	10	67
% App. Total	0	89.5	10.5		100	0	0		0	100	0		10	0	90		
PHF	.000	.708	.500	.679	.250	.000	.000	.250	.000	.514	.000	.514	.250	.000	.563	.625	.761

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

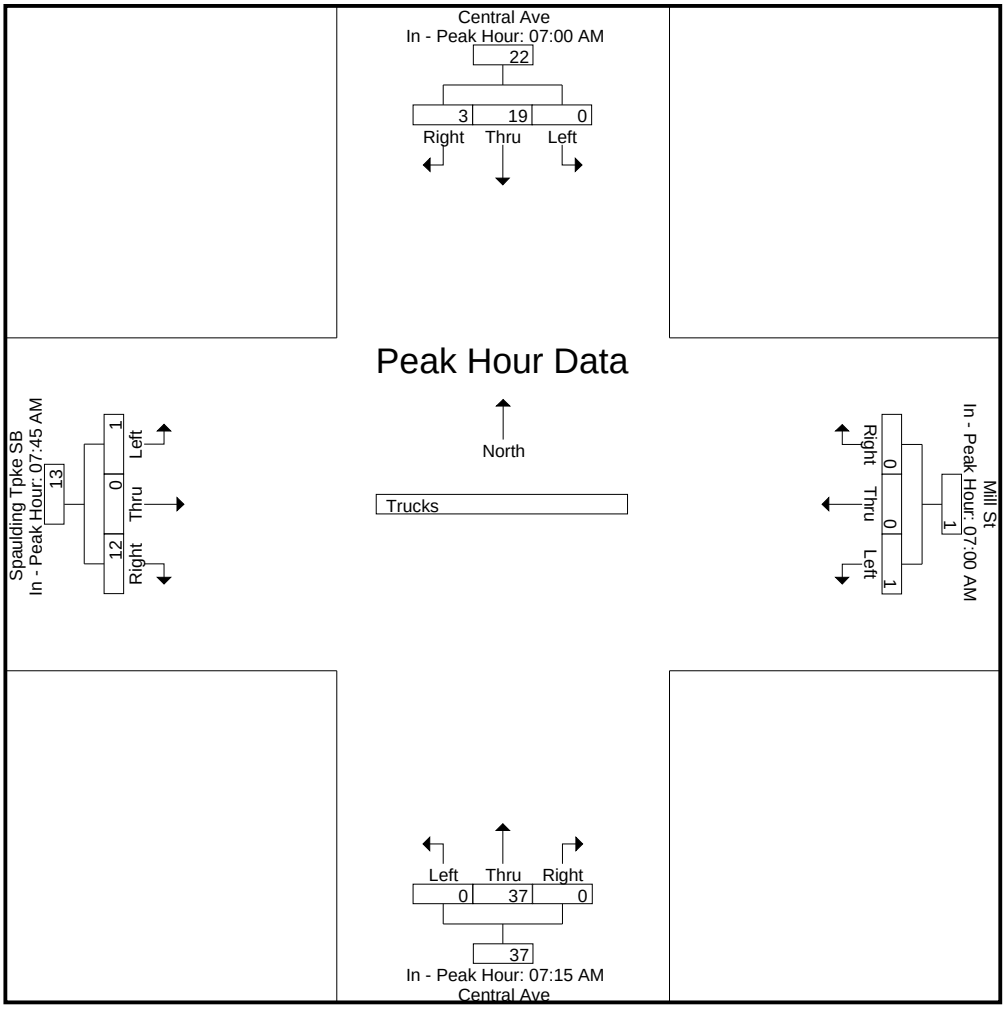
	07:00 AM				07:00 AM				07:15 AM				07:45 AM			
+0 mins.	0	**8**	**2**	**10**	0	0	0	0	0	**18**	0	**18**	**1**	0	1	2
+15 mins.	0	3	0	3	0	0	0	0	0	3	0	3	0	0	4	4
+30 mins.	0	3	0	3	**1**	0	0	**1**	0	6	0	6	0	0	2	2
+45 mins.	0	5	1	6	0	0	0	0	0	10	0	10	0	0	**5**	**5**
Total Volume	0	19	3	22	1	0	0	1	0	37	0	37	1	0	12	13
% App. Total	0	86.4	13.6		100	0	0		0	100	0		7.7	0	92.3	
PHF	.000	.594	.375	.550	.250	.000	.000	.250	.000	.514	.000	.514	.250	.000	.600	.650

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 10

Groups Printed- Bikes Peds

	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	1	7
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2	1	3
07:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	8	9	3	12
08:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	1	3
Grand Total	0	3	0	2	0	0	0	0	0	1	0	0	0	0	0	9	11	4	15
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0				
Total %	0	75	0		0	0	0		0	25	0		0	0	0		73.3	26.7	

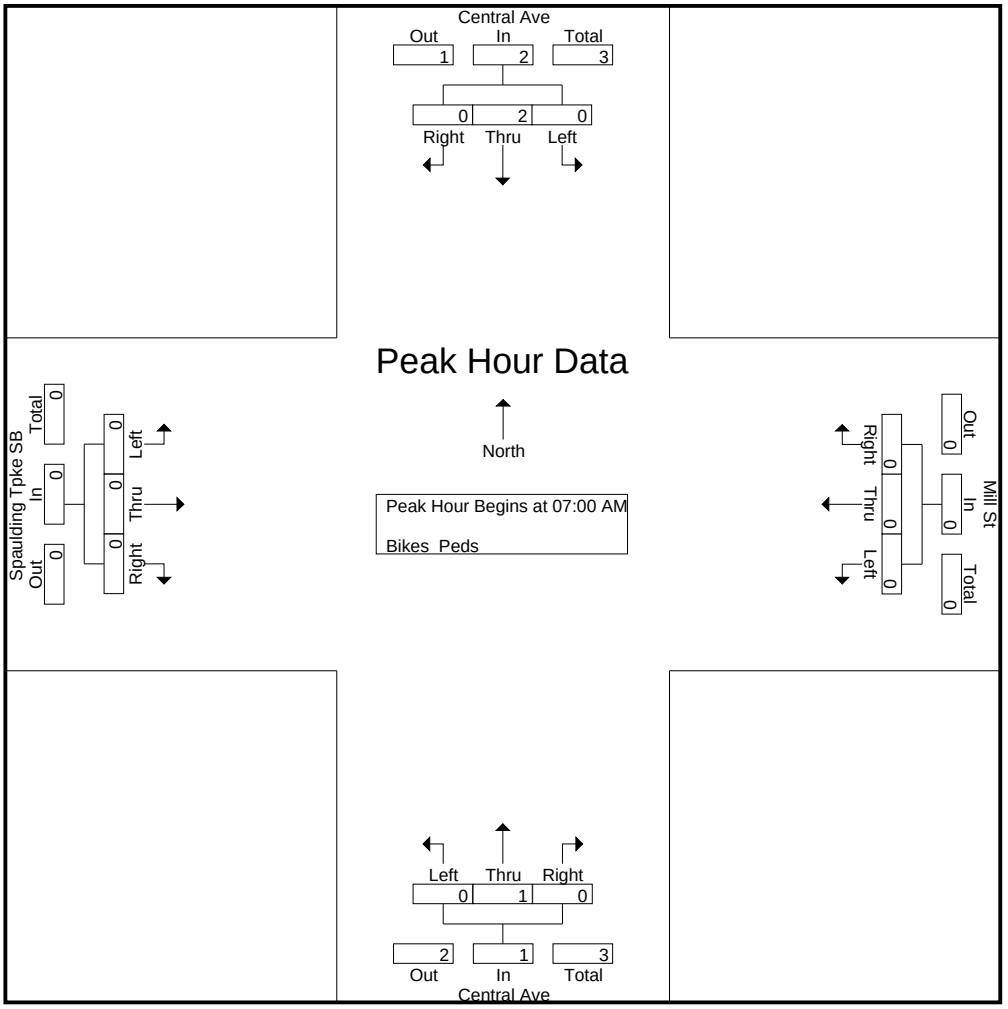
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.750

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

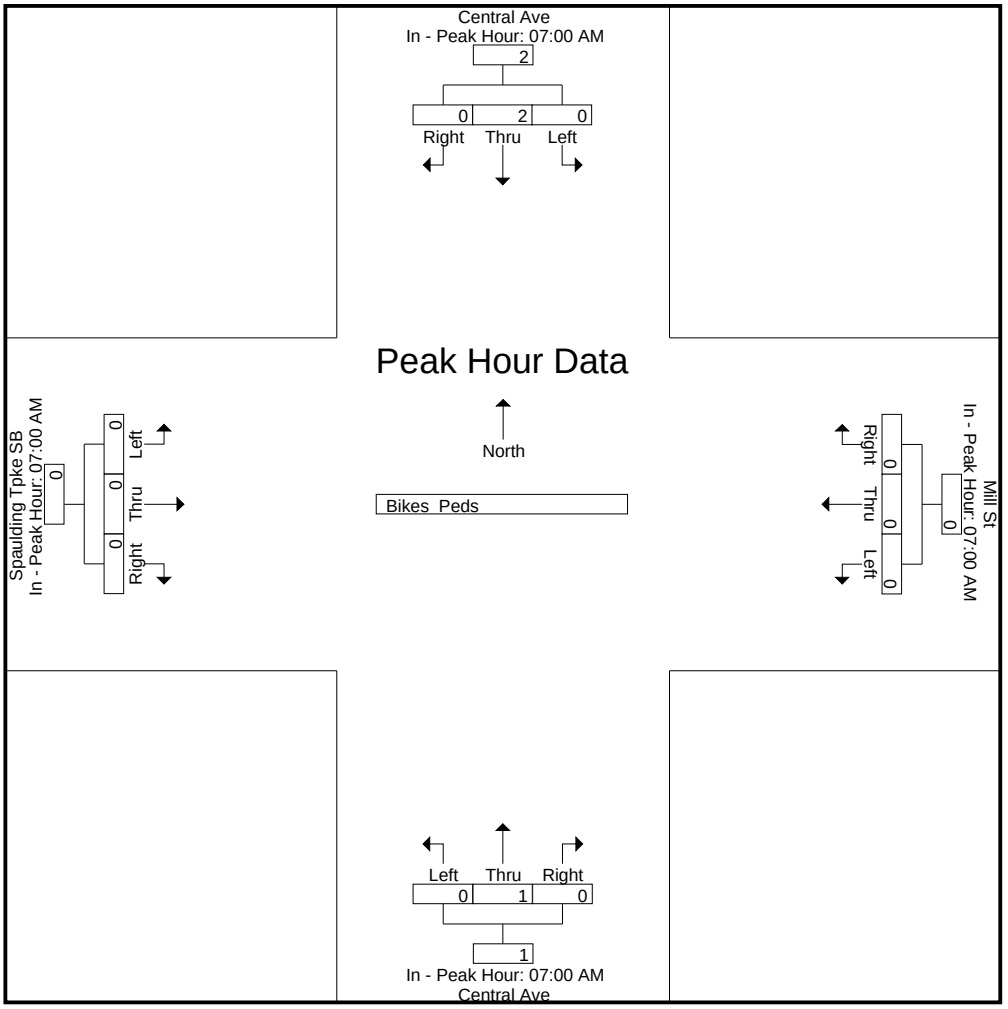
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	5	159	55	4	0	1	13	167	2	24	1	74	505
03:15 PM	0	164	48	3	1	3	5	191	1	34	2	49	501
03:30 PM	1	129	42	3	0	2	9	174	7	35	2	57	461
03:45 PM	1	141	61	2	0	4	8	167	0	46	1	69	500
Total	7	593	206	12	1	10	35	699	10	139	6	249	1967
04:00 PM	2	143	46	0	1	3	9	207	3	42	1	54	511
04:15 PM	2	158	67	1	1	2	12	160	4	36	1	56	500
04:30 PM	1	120	60	1	1	2	12	135	1	44	1	70	448
04:45 PM	2	161	61	1	0	4	9	180	1	41	1	62	523
Total	7	582	234	3	3	11	42	682	9	163	4	242	1982
05:00 PM	2	117	60	3	2	2	8	180	2	38	5	50	469
05:15 PM	1	125	46	1	1	0	8	156	2	38	2	61	441
05:30 PM	0	106	46	1	0	0	11	137	1	37	2	61	402
05:45 PM	0	120	38	2	1	2	3	127	2	30	0	55	380
Total	3	468	190	7	4	4	30	600	7	143	9	227	1692
Grand Total	17	1643	630	22	8	25	107	1981	26	445	19	718	5641
Apprch %	0.7	71.7	27.5	40	14.5	45.5	5.1	93.7	1.2	37.6	1.6	60.7	
Total %	0.3	29.1	11.2	0.4	0.1	0.4	1.9	35.1	0.5	7.9	0.3	12.7	
Cars	17	1624	624	21	8	25	102	1967	26	444	19	710	5587
% Cars	100	98.8	99	95.5	100	100	95.3	99.3	100	99.8	100	98.9	99
Trucks	0	19	6	1	0	0	5	14	0	1	0	8	54
% Trucks	0	1.2	1	4.5	0	0	4.7	0.7	0	0.2	0	1.1	1

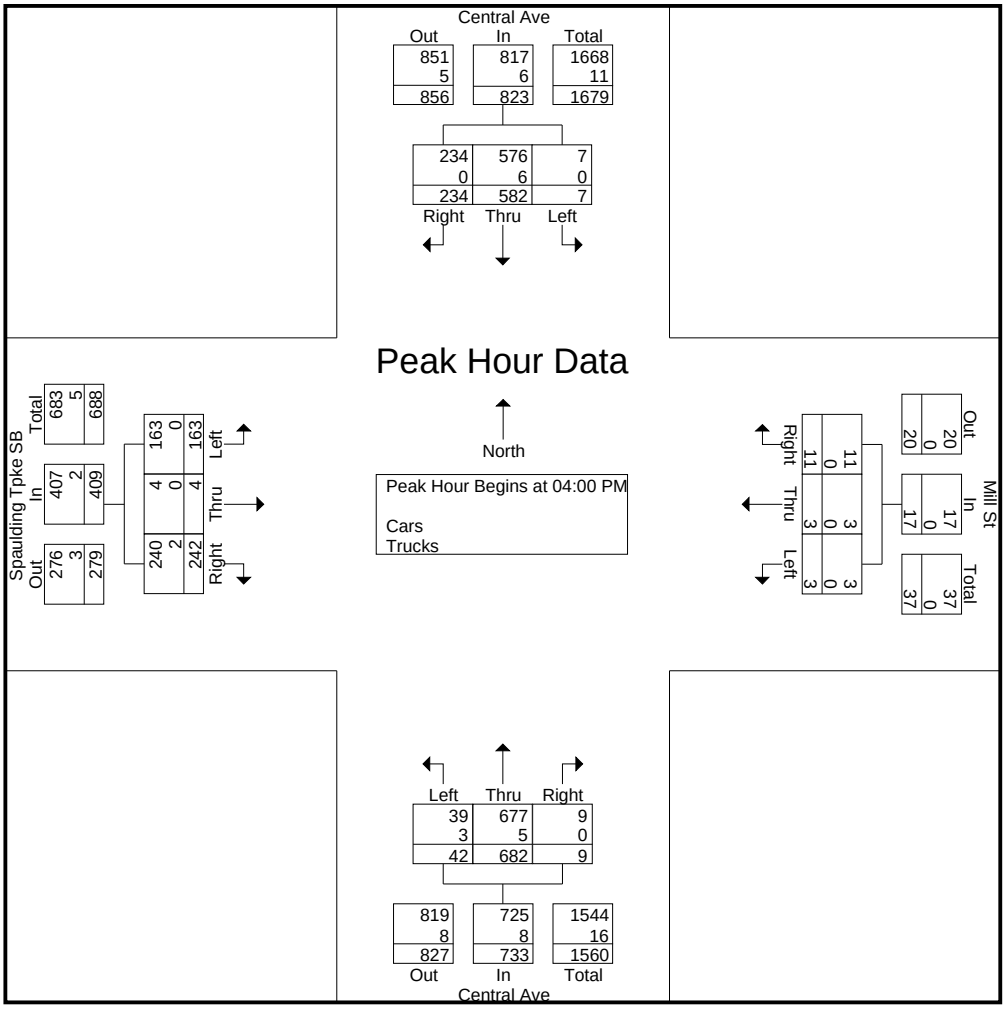
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**2**	143	46	191	0	**1**	3	4	9	**207**	3	**219**	42	**1**	54	97	511
04:15 PM	2	158	**67**	**227**	**1**	1	2	4	**12**	160	**4**	176	36	1	56	93	500
04:30 PM	1	120	60	181	1	1	2	4	12	135	1	148	**44**	1	**70**	**115**	448
04:45 PM	2	**161**	61	224	1	0	**4**	**5**	9	180	1	190	41	1	62	104	**523**
Total Volume	7	582	234	823	3	3	11	17	42	682	9	733	163	4	242	409	1982
% App. Total	0.9	70.7	28.4		17.6	17.6	64.7		5.7	93	1.2		39.9	1	59.2		
PHF	.875	.904	.873	.906	.750	.750	.688	.850	.875	.824	.563	.837	.926	1.00	.864	.889	.947
Cars	7	576	234	817	3	3	11	17	39	677	9	725	163	4	240	407	1966
% Cars	100	99.0	100	99.3	100	100	100	100	92.9	99.3	100	98.9	100	100	99.2	99.5	99.2
Trucks	0	6	0	6	0	0	0	0	3	5	0	8	0	0	2	2	16
% Trucks	0	1.0	0	0.7	0	0	0	0	7.1	0.7	0	1.1	0	0	0.8	0.5	0.8

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 2



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

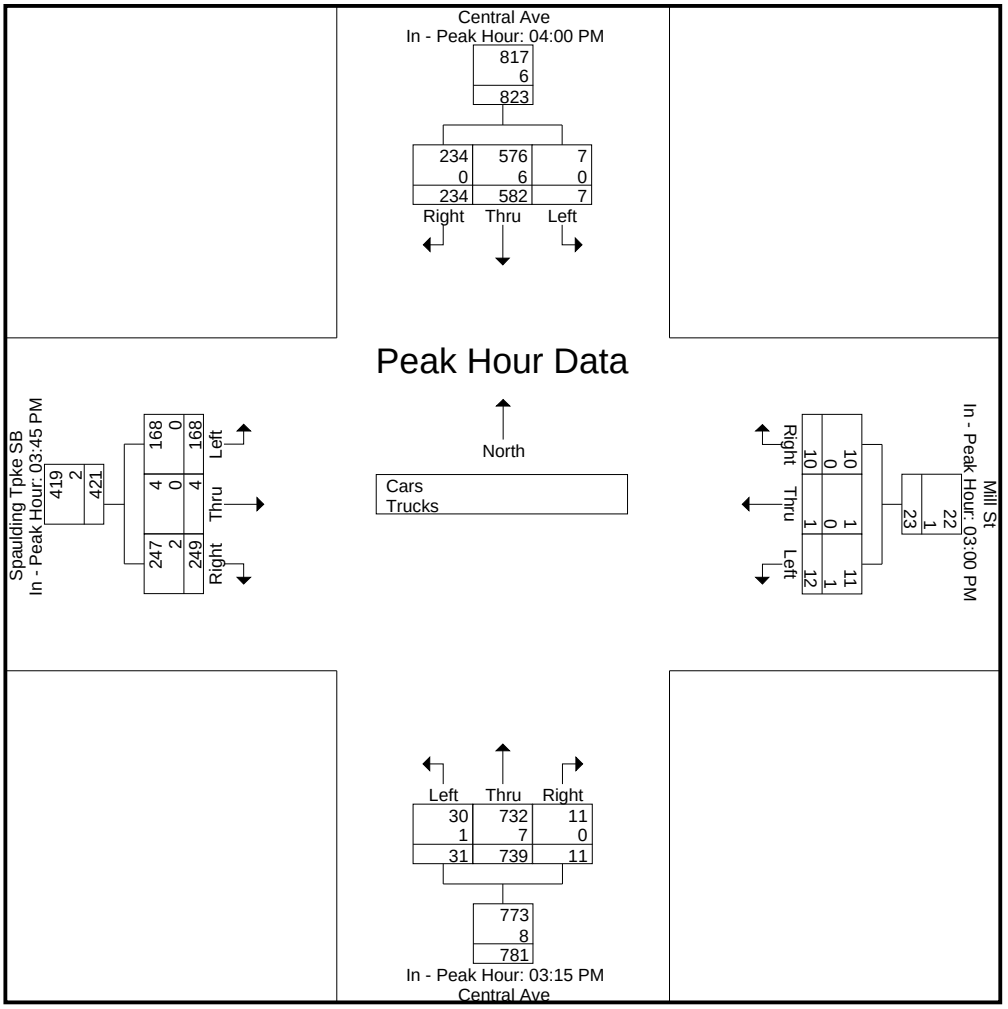
	04:00 PM				03:00 PM				03:15 PM				03:45 PM			
+0 mins.	**2**	143	46	191	**4**	0	1	5	5	191	1	197	**46**	**1**	69	**116**
+15 mins.	2	158	**67**	**227**	3	**1**	3	**7**	**9**	174	**7**	190	42	1	54	97
+30 mins.	1	120	60	181	3	0	2	5	8	167	0	175	36	1	56	93
+45 mins.	2	**161**	61	224	2	0	**4**	6	9	**207**	3	**219**	44	1	**70**	115
Total Volume	7	582	234	823	12	1	10	23	31	739	11	781	168	4	249	421
% App. Total	0.9	70.7	28.4		52.2	4.3	43.5		4	94.6	1.4		39.9	1	59.1	
PHF	.875	.904	.873	.906	.750	.250	.625	.821	.861	.893	.393	.892	.913	1.000	.889	.907
Cars	7	576	234	817	11	1	10	22	30	732	11	773	168	4	247	419
% Cars	100	99	100	99.3	91.7	100	100	95.7	96.8	99.1	100	99	100	100	99.2	99.5
Trucks	0	6	0	6	1	0	0	1	1	7	0	8	0	0	2	2
% Trucks	0	1	0	0.7	8.3	0	0	4.3	3.2	0.9	0	1	0	0	0.8	0.5

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	5	157	54	4	0	1	13	165	2	23	1	73	498
03:15 PM	0	162	46	2	1	3	4	187	1	34	2	49	491
03:30 PM	1	126	40	3	0	2	9	173	7	35	2	56	454
03:45 PM	1	139	61	2	0	4	8	166	0	46	1	68	496
Total	7	584	201	11	1	10	34	691	10	138	6	246	1939
04:00 PM	2	140	46	0	1	3	9	206	3	42	1	53	506
04:15 PM	2	157	67	1	1	2	11	158	4	36	1	56	496
04:30 PM	1	119	60	1	1	2	10	134	1	44	1	70	444
04:45 PM	2	160	61	1	0	4	9	179	1	41	1	61	520
Total	7	576	234	3	3	11	39	677	9	163	4	240	1966
05:00 PM	2	116	60	3	2	2	8	180	2	38	5	49	467
05:15 PM	1	125	45	1	1	0	8	155	2	38	2	60	438
05:30 PM	0	104	46	1	0	0	11	137	1	37	2	60	399
05:45 PM	0	119	38	2	1	2	2	127	2	30	0	55	378
Total	3	464	189	7	4	4	29	599	7	143	9	224	1682
Grand Total	17	1624	624	21	8	25	102	1967	26	444	19	710	5587
Apprch %	0.8	71.7	27.5	38.9	14.8	46.3	4.9	93.9	1.2	37.9	1.6	60.5	
Total %	0.3	29.1	11.2	0.4	0.1	0.4	1.8	35.2	0.5	7.9	0.3	12.7	

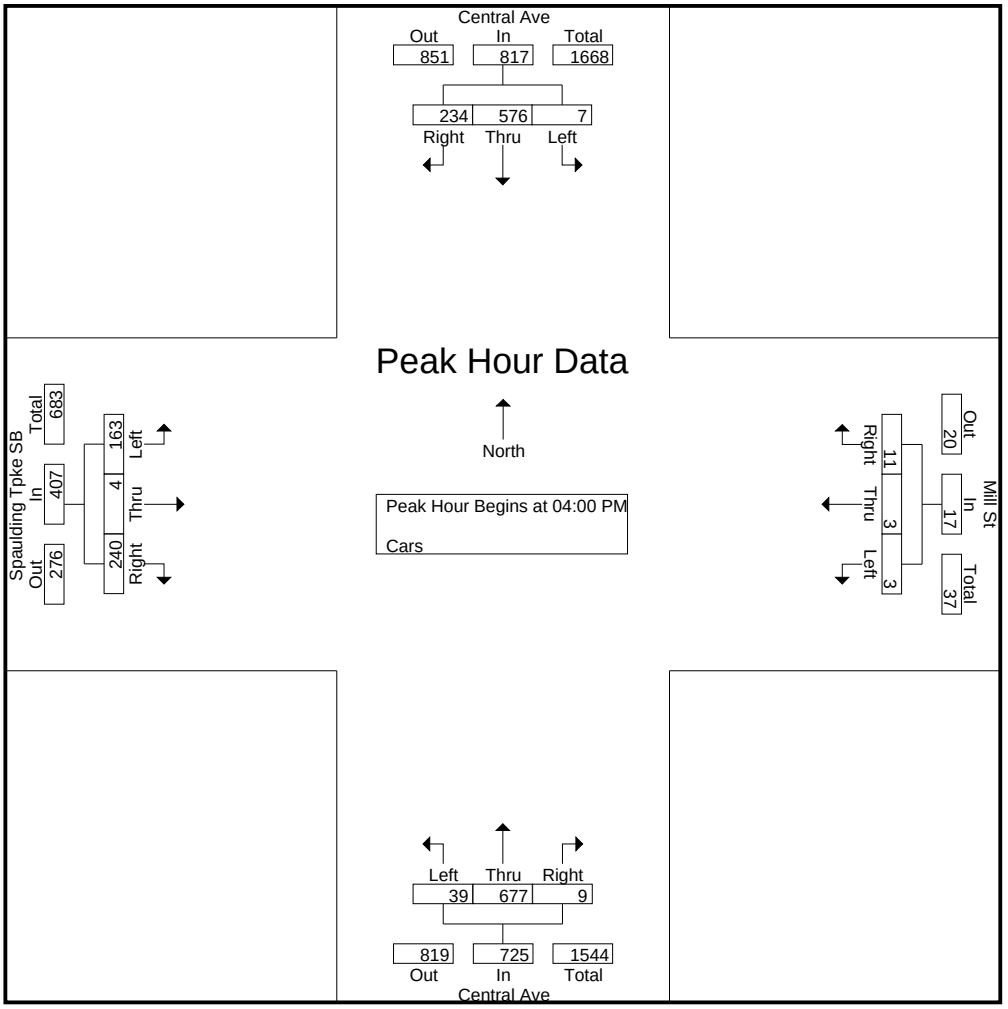
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**2**	140	46	188	0	**1**	3	4	9	**206**	3	**218**	42	**1**	53	96	506
04:15 PM	2	157	**67**	**226**	**1**	1	2	4	**11**	158	**4**	173	36	1	56	93	496
04:30 PM	1	119	60	180	1	1	2	4	10	134	1	145	**44**	1	**70**	**115**	444
04:45 PM	2	**160**	61	223	1	0	**4**	**5**	9	179	1	189	41	1	61	103	**520**
Total Volume	7	576	234	817	3	3	11	17	39	677	9	725	163	4	240	407	1966
% App. Total	0.9	70.5	28.6		17.6	17.6	64.7		5.4	93.4	1.2		40	1	59		
PHF	.875	.900	.873	.904	.750	.750	.688	.850	.886	.822	.563	.831	.926	1.00	.857	.885	.945

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 5



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

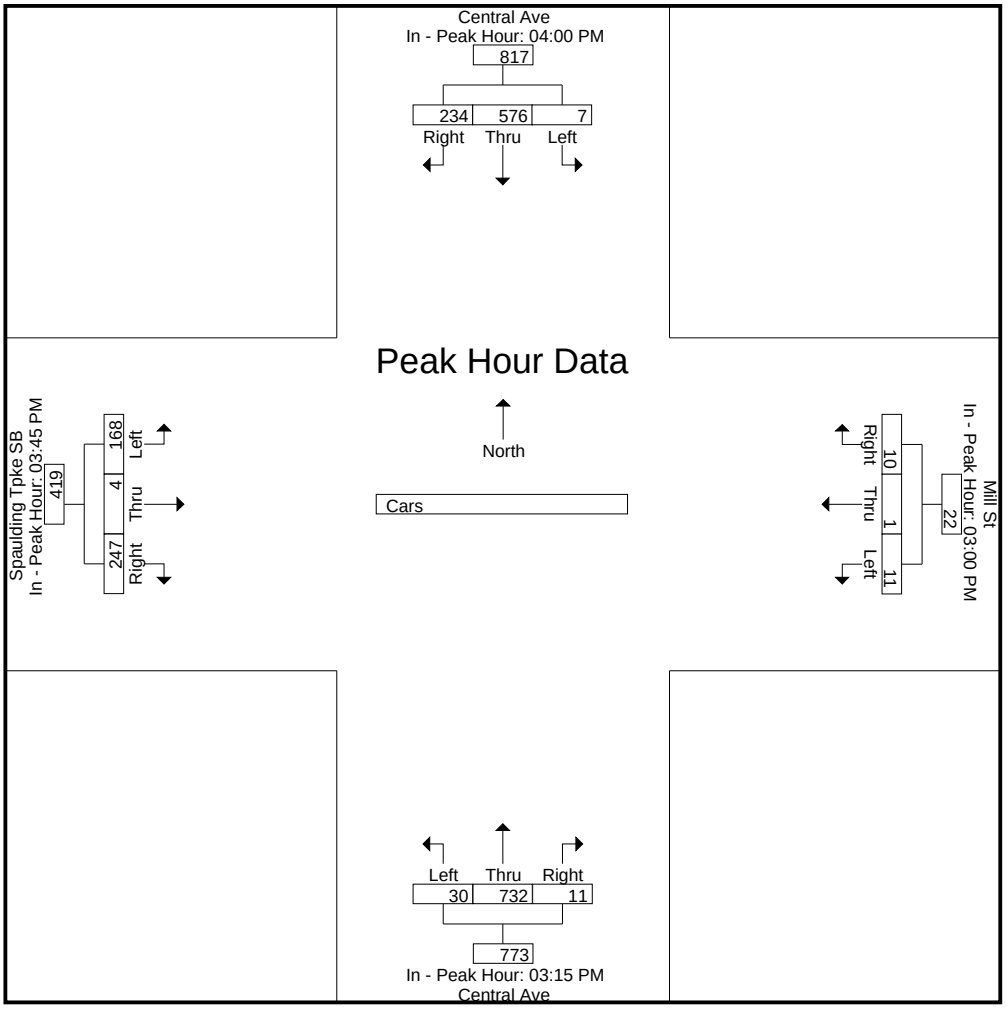
	04:00 PM				03:00 PM				03:15 PM				03:45 PM			
+0 mins.	**2**	140	46	188	**4**	0	1	5	4	187	1	192	**46**	**1**	68	**115**
+15 mins.	2	157	**67**	**226**	2	**1**	3	**6**	**9**	173	**7**	189	42	1	53	96
+30 mins.	1	119	60	180	3	0	2	5	8	166	0	174	36	1	56	93
+45 mins.	2	**160**	61	223	2	0	**4**	6	9	**206**	3	**218**	44	1	**70**	115
Total Volume	7	576	234	817	11	1	10	22	30	732	11	773	168	4	247	419
% App. Total	0.9	70.5	28.6		50	4.5	45.5		3.9	94.7	1.4		40.1	1	58.9	
PHF	.875	.900	.873	.904	.688	.250	.625	.917	.833	.888	.393	.886	.913	1.000	.882	.911

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 7

Groups Printed- Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
03:00 PM	0	2	1	0	0	0	0	2	0	1	0	1	7
03:15 PM	0	2	2	1	0	0	1	4	0	0	0	0	10
03:30 PM	0	3	2	0	0	0	0	1	0	0	0	1	7
03:45 PM	0	2	0	0	0	0	0	1	0	0	0	1	4
Total	0	9	5	1	0	0	1	8	0	1	0	3	28
04:00 PM	0	3	0	0	0	0	0	1	0	0	0	1	5
04:15 PM	0	1	0	0	0	0	1	2	0	0	0	0	4
04:30 PM	0	1	0	0	0	0	2	1	0	0	0	0	4
04:45 PM	0	1	0	0	0	0	0	1	0	0	0	1	3
Total	0	6	0	0	0	0	3	5	0	0	0	2	16
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	1	2
05:15 PM	0	0	1	0	0	0	0	1	0	0	0	1	3
05:30 PM	0	2	0	0	0	0	0	0	0	0	0	1	3
05:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
Total	0	4	1	0	0	0	1	1	0	0	0	3	10
Grand Total	0	19	6	1	0	0	5	14	0	1	0	8	54
Apprch %	0	76	24	100	0	0	26.3	73.7	0	11.1	0	88.9	
Total %	0	35.2	11.1	1.9	0	0	9.3	25.9	0	1.9	0	14.8	

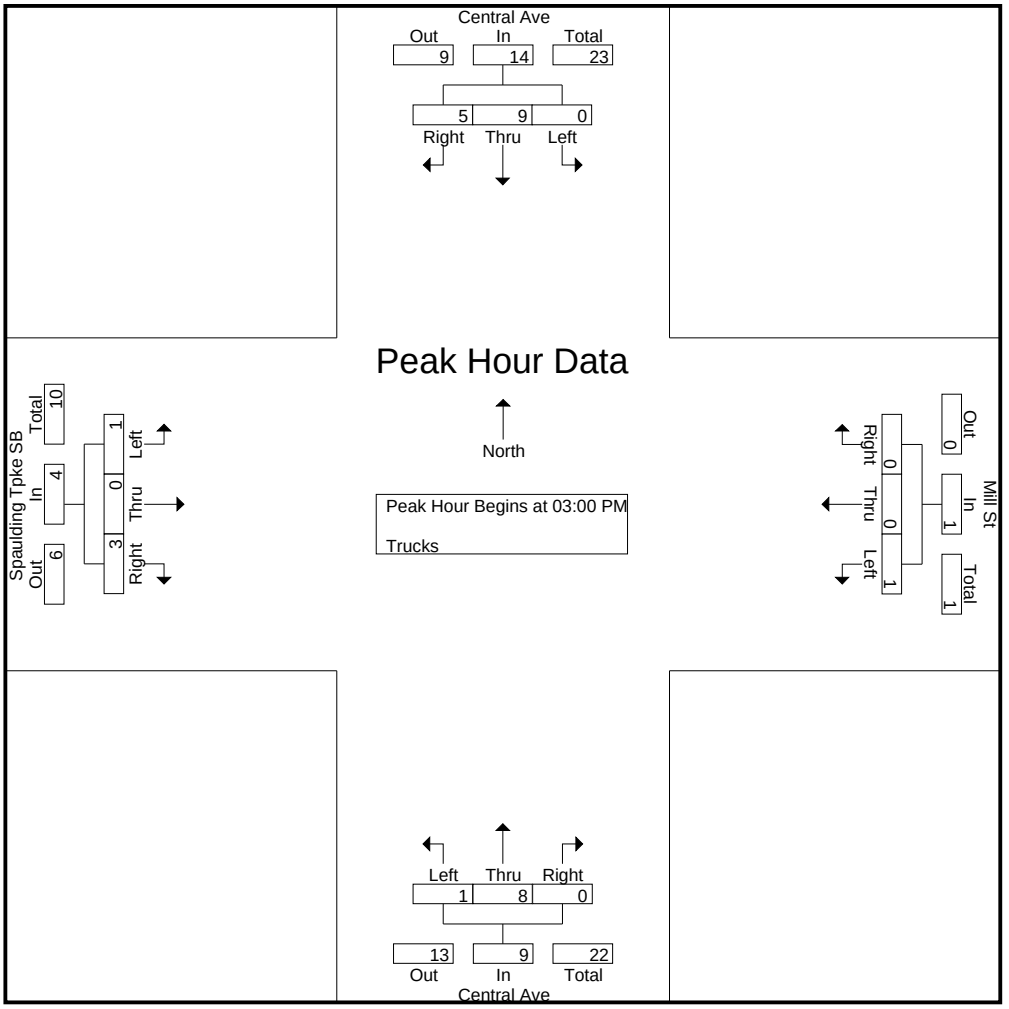
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	2	1	3	0	0	0	0	0	2	0	2	**1**	0	**1**	**2**	7
03:15 PM	0	2	**2**	4	**1**	0	0	**1**	**1**	**4**	0	**5**	0	0	0	0	**10**
03:30 PM	0	**3**	2	**5**	0	0	0	0	0	1	0	1	0	0	1	1	7
03:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	1	1	4
Total Volume	0	9	5	14	1	0	0	1	1	8	0	9	1	0	3	4	28
% App. Total	0	64.3	35.7		100	0	0		11.1	88.9	0		25	0	75		
PHF	.000	.750	.625	.700	.250	.000	.000	.250	.250	.500	.000	.450	.250	.000	.750	.500	.700

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 8



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

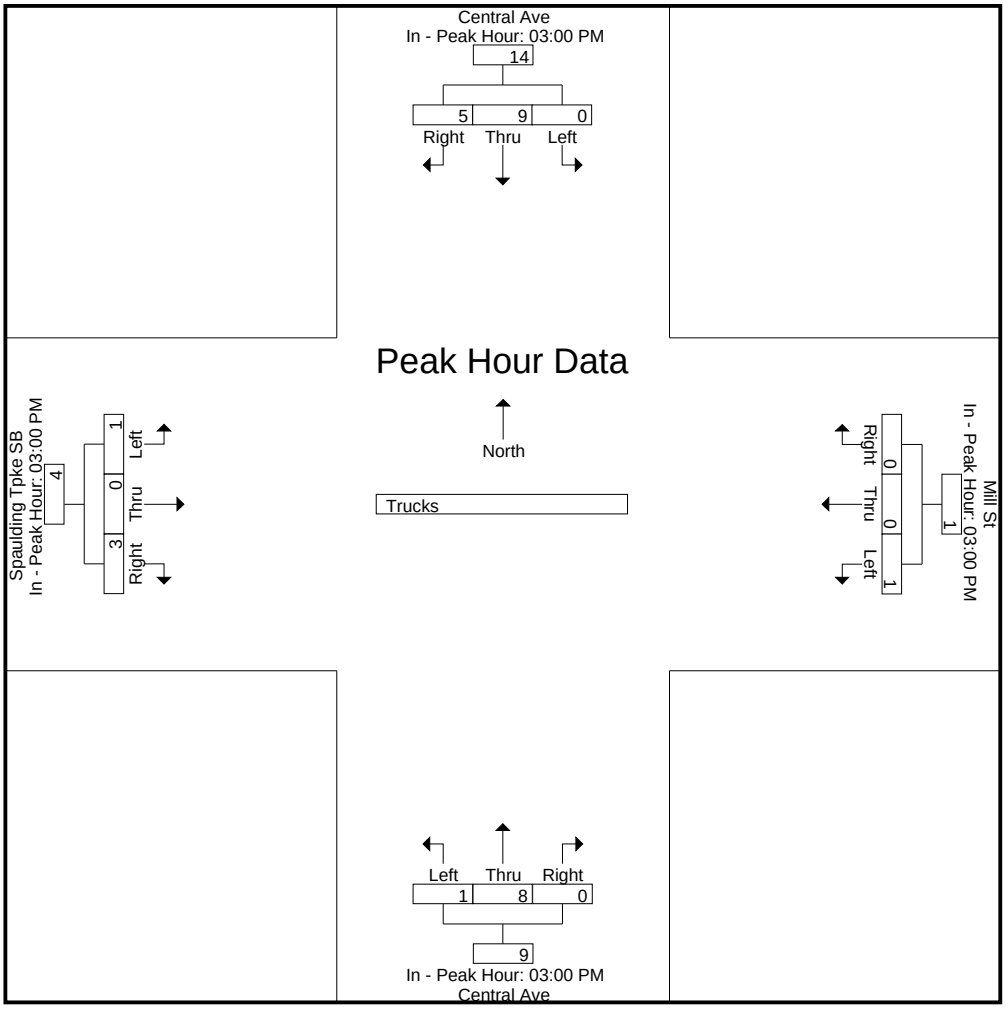
	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	2	1	3	0	0	0	0	0	2	0	2	**1**	0	**1**	**2**
+15 mins.	0	2	**2**	4	**1**	0	0	**1**	**1**	**4**	0	**5**	0	0	0	0
+30 mins.	0	**3**	2	**5**	0	0	0	0	0	1	0	1	0	0	1	1
+45 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	1	1
Total Volume	0	9	5	14	1	0	0	1	1	8	0	9	1	0	3	4
% App. Total	0	64.3	35.7		100	0	0		11.1	88.9	0		25	0	75	
PHF	.000	.750	.625	.700	.250	.000	.000	.250	.250	.500	.000	.450	.250	.000	.750	.500

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 10

Groups Printed- Bikes Peds

	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	7
03:30 PM	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	9	10	2	12
03:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	4	0	4
Total	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	24	26	2	28
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	6	6	2	8
Grand Total	0	3	0	2	0	0	0	2	0	0	1	0	0	0	0	30	34	4	38
Apprch %	0	100	0		0	0	0		0	0	100		0	0	0				
Total %	0	75	0		0	0	0		0	0	25		0	0	0		89.5	10.5	

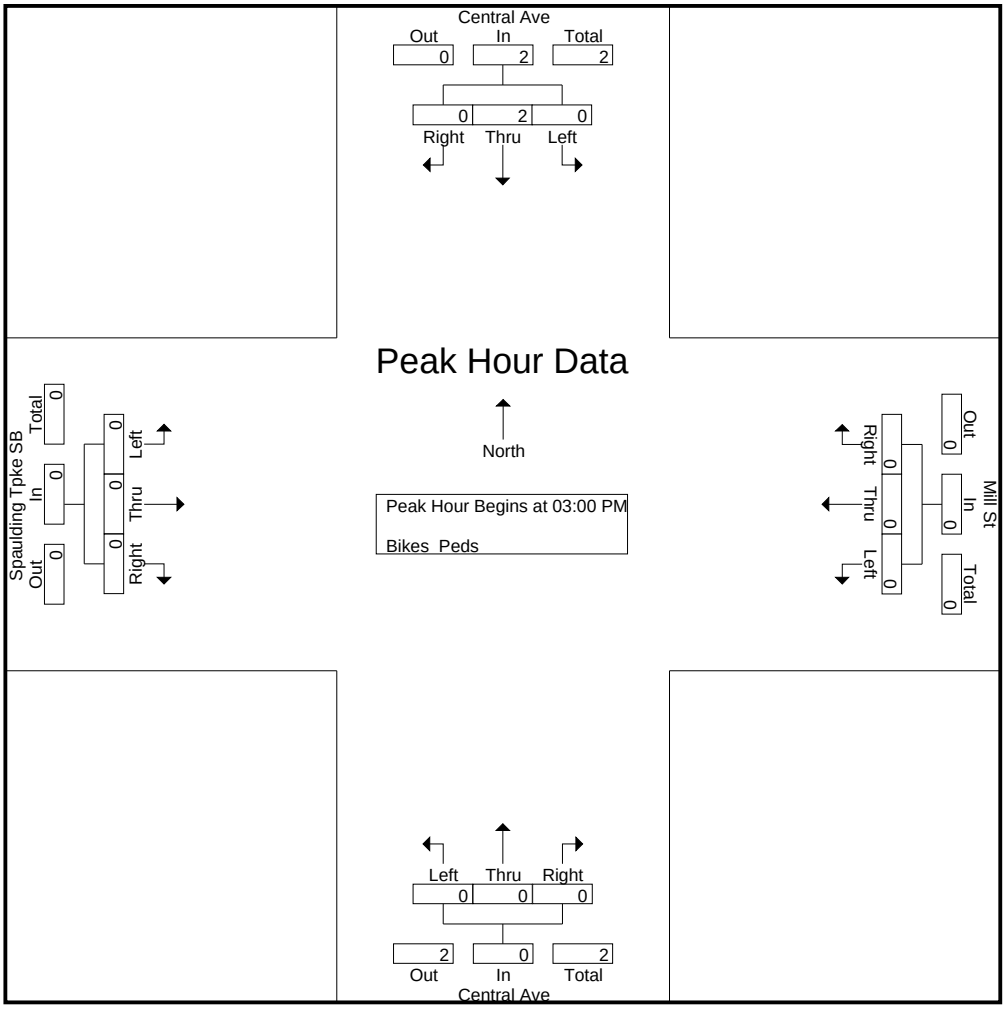
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**2**
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 11



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

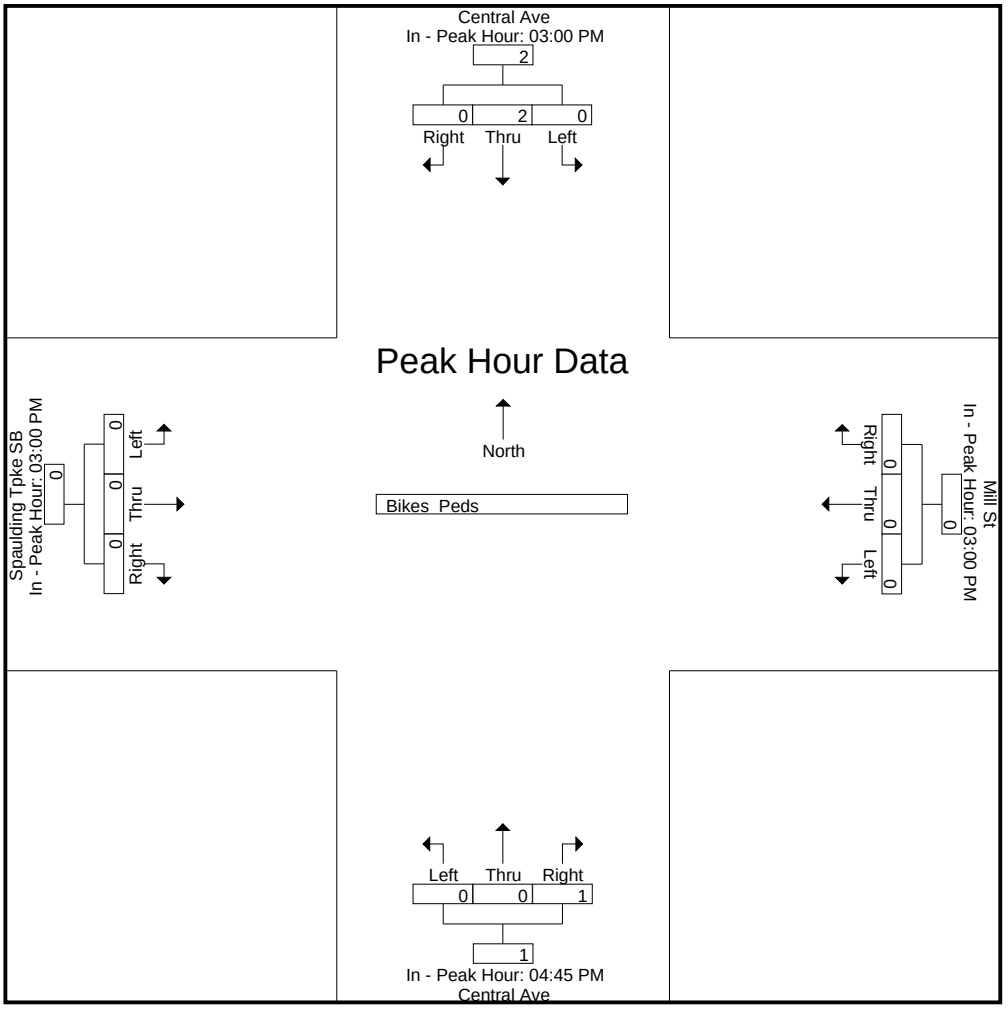
	03:00 PM				03:00 PM				04:45 PM				03:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	1	1	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	100		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 10566003
Site Code : 10566003
Start Date : 12/18/2025
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 1

Groups Printed- Cars - Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	1	137	53	2	0	2	11	138	1	42	2	31	420
11:15 AM	0	90	50	3	2	3	13	166	3	32	0	33	395
11:30 AM	2	103	50	1	0	6	8	134	2	39	3	43	391
11:45 AM	0	100	63	2	0	3	11	151	0	37	1	45	413
Total	3	430	216	8	2	14	43	589	6	150	6	152	1619
12:00 PM	3	108	46	2	0	3	6	133	2	35	0	56	394
12:15 PM	1	107	59	0	0	2	4	125	0	35	1	45	379
12:30 PM	1	115	60	4	0	0	8	118	0	31	4	46	387
12:45 PM	0	114	48	1	0	2	6	138	1	32	1	53	396
Total	5	444	213	7	0	7	24	514	3	133	6	200	1556
01:00 PM	1	88	39	3	1	0	7	154	2	41	0	37	373
01:15 PM	0	114	56	3	0	0	7	133	1	34	1	48	397
01:30 PM	0	107	55	4	2	5	5	112	3	29	1	34	357
01:45 PM	2	110	48	2	4	0	4	101	0	24	1	40	336
Total	3	419	198	12	7	5	23	500	6	128	3	159	1463
Grand Total	11	1293	627	27	9	26	90	1603	15	411	15	511	4638
Apprch %	0.6	67	32.5	43.5	14.5	41.9	5.3	93.9	0.9	43.9	1.6	54.5	
Total %	0.2	27.9	13.5	0.6	0.2	0.6	1.9	34.6	0.3	8.9	0.3	11	
Cars	11	1287	625	27	9	26	88	1600	15	409	15	509	4621
% Cars	100	99.5	99.7	100	100	100	97.8	99.8	100	99.5	100	99.6	99.6
Trucks	0	6	2	0	0	0	2	3	0	2	0	2	17
% Trucks	0	0.5	0.3	0	0	0	2.2	0.2	0	0.5	0	0.4	0.4

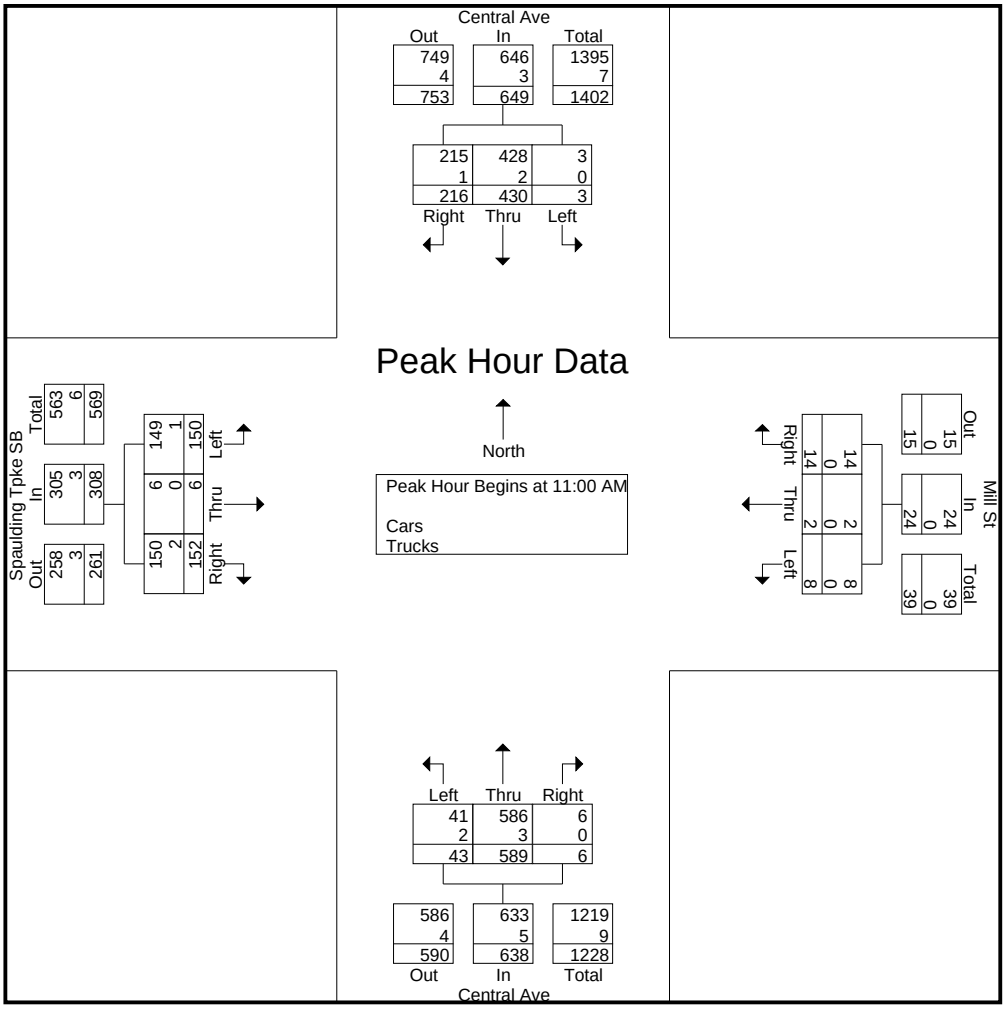
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	1	**137**	53	**191**	2	0	2	4	11	138	1	150	**42**	2	31	75	**420**
11:15 AM	0	90	50	140	**3**	**2**	3	**8**	**13**	**166**	**3**	**182**	32	0	33	65	395
11:30 AM	**2**	103	50	155	1	0	**6**	7	8	134	2	144	39	**3**	43	**85**	391
11:45 AM	0	100	**63**	163	2	0	3	5	11	151	0	162	37	1	**45**	83	413
Total Volume	3	430	216	649	8	2	14	24	43	589	6	638	150	6	152	308	1619
% App. Total	0.5	66.3	33.3		33.3	8.3	58.3		6.7	92.3	0.9		48.7	1.9	49.4		
PHF	.375	.785	.857	.849	.667	.250	.583	.750	.827	.887	.500	.876	.893	.500	.844	.906	.964
Cars	3	428	215	646	8	2	14	24	41	586	6	633	149	6	150	305	1608
% Cars	100	99.5	99.5	99.5	100	100	100	100	95.3	99.5	100	99.2	99.3	100	98.7	99.0	99.3
Trucks	0	2	1	3	0	0	0	0	2	3	0	5	1	0	2	3	11
% Trucks	0	0.5	0.5	0.5	0	0	0	0	4.7	0.5	0	0.8	0.7	0	1.3	1.0	0.7

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

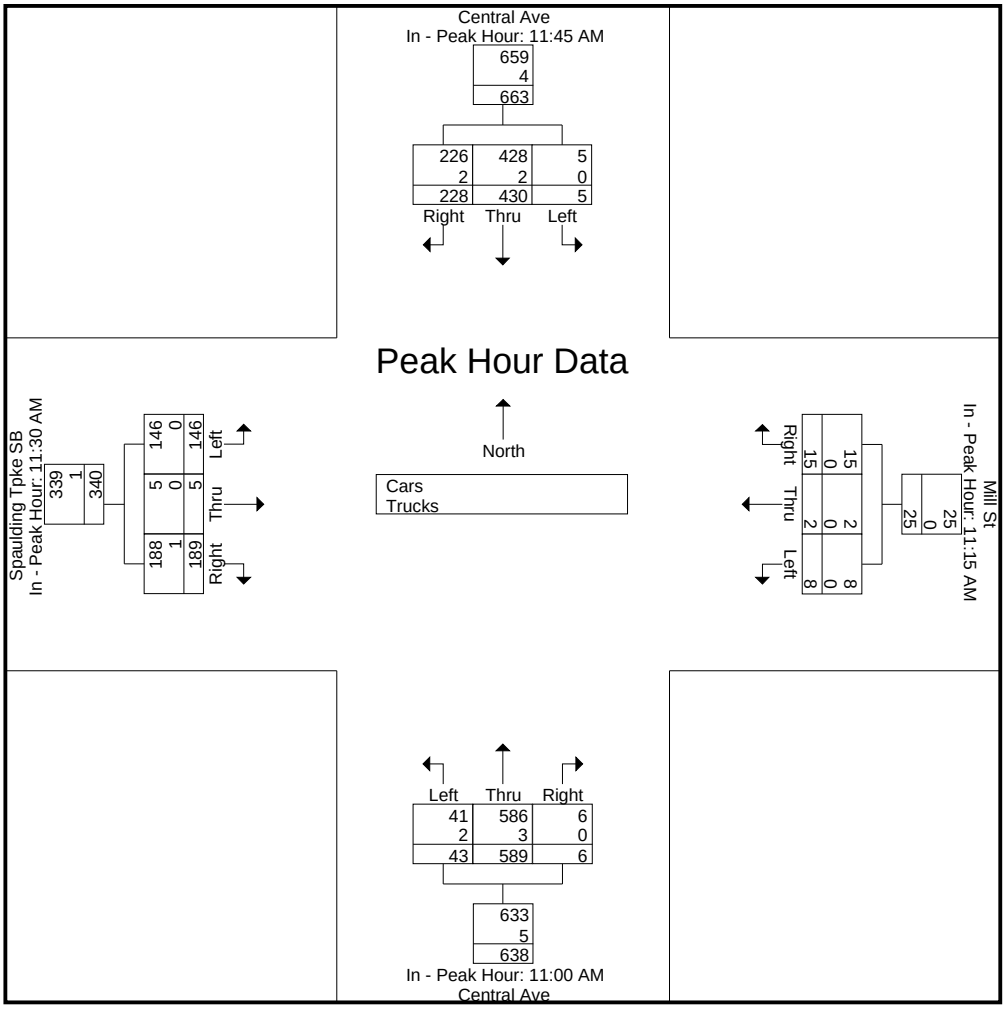
	11:45 AM				11:15 AM				11:00 AM				11:30 AM			
+0 mins.	0	100	**63**	163	**3**	**2**	3	**8**	11	138	1	150	**39**	**3**	43	85
+15 mins.	**3**	108	46	157	1	0	**6**	7	**13**	**166**	**3**	**182**	37	1	45	83
+30 mins.	1	107	59	167	2	0	3	5	8	134	2	144	35	0	**56**	**91**
+45 mins.	1	**115**	60	**176**	2	0	3	5	11	151	0	162	35	1	45	81
Total Volume	5	430	228	663	8	2	15	25	43	589	6	638	146	5	189	340
% App. Total	0.8	64.9	34.4		32	8	60		6.7	92.3	0.9		42.9	1.5	55.6	
PHF	.417	.935	.905	.942	.667	.250	.625	.781	.827	.887	.500	.876	.936	.417	.844	.934
Cars	5	428	226	659	8	2	15	25	41	586	6	633	146	5	188	339
% Cars	100	99.5	99.1	99.4	100	100	100	100	95.3	99.5	100	99.2	100	100	99.5	99.7
Trucks	0	2	2	4	0	0	0	0	2	3	0	5	0	0	1	1
% Trucks	0	0.5	0.9	0.6	0	0	0	0	4.7	0.5	0	0.8	0	0	0.5	0.3

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 4

Groups Printed- Cars

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	1	137	53	2	0	2	11	138	1	42	2	30	419
11:15 AM	0	89	50	3	2	3	12	165	3	31	0	33	391
11:30 AM	2	102	50	1	0	6	8	132	2	39	3	43	388
11:45 AM	0	100	62	2	0	3	10	151	0	37	1	44	410
Total	3	428	215	8	2	14	41	586	6	149	6	150	1608
12:00 PM	3	106	46	2	0	3	6	133	2	35	0	56	392
12:15 PM	1	107	58	0	0	2	4	125	0	35	1	45	378
12:30 PM	1	115	60	4	0	0	8	118	0	30	4	46	386
12:45 PM	0	114	48	1	0	2	6	138	1	32	1	53	396
Total	5	442	212	7	0	7	24	514	3	132	6	200	1552
01:00 PM	1	88	39	3	1	0	7	154	2	41	0	37	373
01:15 PM	0	114	56	3	0	0	7	133	1	34	1	48	397
01:30 PM	0	105	55	4	2	5	5	112	3	29	1	34	355
01:45 PM	2	110	48	2	4	0	4	101	0	24	1	40	336
Total	3	417	198	12	7	5	23	500	6	128	3	159	1461
Grand Total	11	1287	625	27	9	26	88	1600	15	409	15	509	4621
Apprch %	0.6	66.9	32.5	43.5	14.5	41.9	5.2	94	0.9	43.8	1.6	54.6	
Total %	0.2	27.9	13.5	0.6	0.2	0.6	1.9	34.6	0.3	8.9	0.3	11	

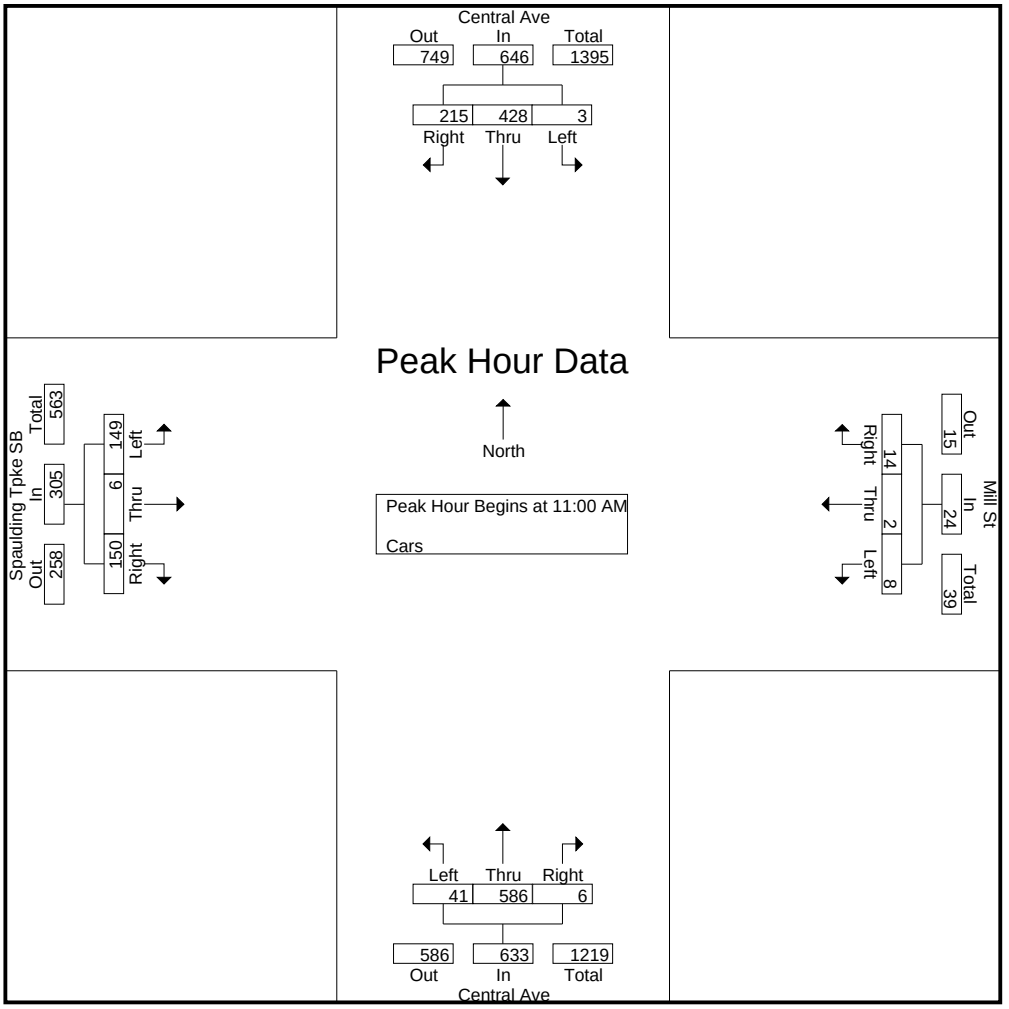
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	1	**137**	53	**191**	2	0	2	4	11	138	1	150	**42**	2	30	74	**419**
11:15 AM	0	89	50	139	**3**	**2**	3	**8**	**12**	**165**	**3**	**180**	31	0	33	64	391
11:30 AM	**2**	102	50	154	1	0	**6**	7	8	132	2	142	39	**3**	43	**85**	388
11:45 AM	0	100	**62**	162	2	0	3	5	10	151	0	161	37	1	**44**	82	410
Total Volume	3	428	215	646	8	2	14	24	41	586	6	633	149	6	150	305	1608
% App. Total	0.5	66.3	33.3		33.3	8.3	58.3		6.5	92.6	0.9		48.9	2	49.2		
PHF	.375	.781	.867	.846	.667	.250	.583	.750	.854	.888	.500	.879	.887	.500	.852	.897	.959

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 5



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

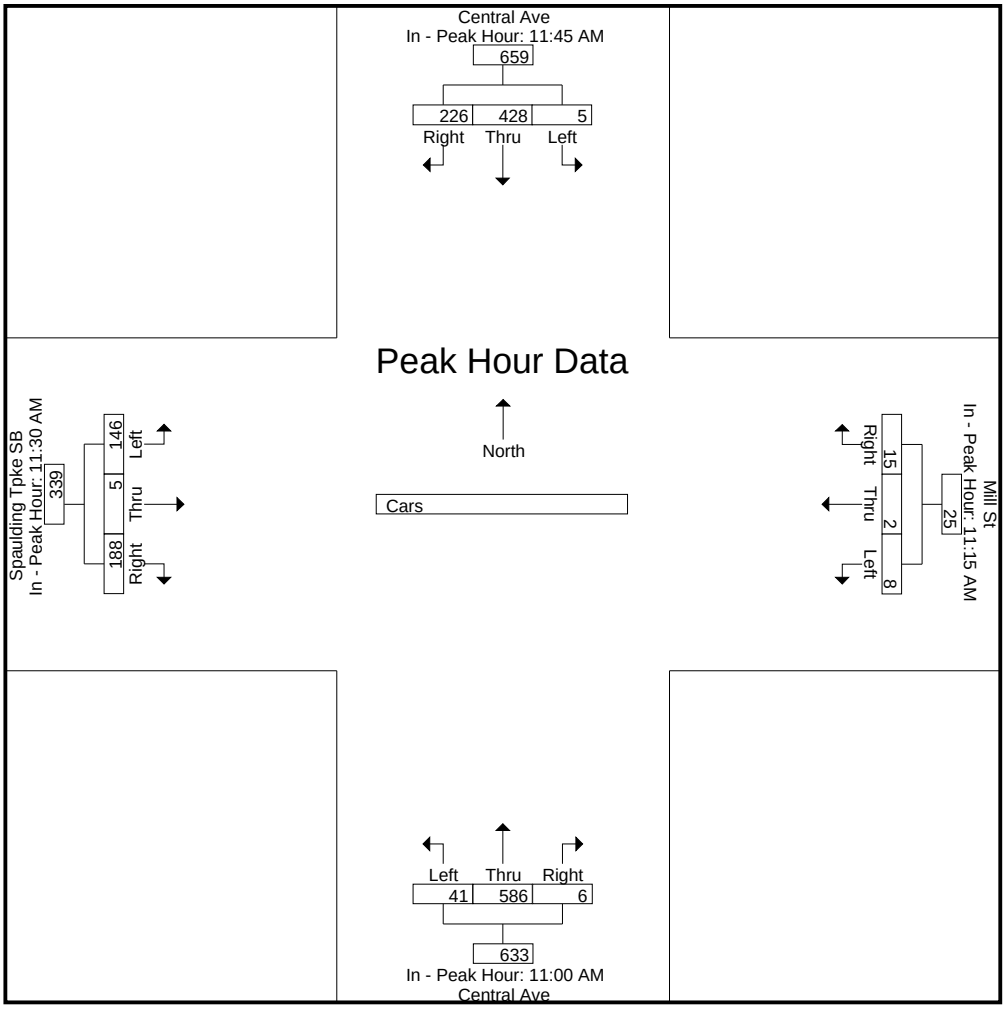
	11:45 AM				11:15 AM				11:00 AM				11:30 AM			
+0 mins.	0	100	**62**	162	**3**	**2**	3	**8**	11	138	1	150	**39**	**3**	43	85
+15 mins.	**3**	106	46	155	1	0	**6**	7	**12**	**165**	**3**	**180**	37	1	44	82
+30 mins.	1	107	58	166	2	0	3	5	8	132	2	142	35	0	**56**	**91**
+45 mins.	1	**115**	60	**176**	2	0	3	5	10	151	0	161	35	1	45	81
Total Volume	5	428	226	659	8	2	15	25	41	586	6	633	146	5	188	339
% App. Total	0.8	64.9	34.3		32	8	60		6.5	92.6	0.9		43.1	1.5	55.5	
PHF	.417	.930	.911	.936	.667	.250	.625	.781	.854	.888	.500	.879	.936	.417	.839	.931

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025

Groups Printed- Trucks

	Central Ave From North			Mill St From East			Central Ave From South			Spaulding Tpke SB From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
11:15 AM	0	1	0	0	0	0	1	1	0	1	0	0	4
11:30 AM	0	1	0	0	0	0	0	2	0	0	0	0	3
11:45 AM	0	0	1	0	0	0	1	0	0	0	0	1	3
Total	0	2	1	0	0	0	2	3	0	1	0	2	11
12:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
12:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	1	0	0	0	0	0	0	1	0	0	4
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	6	2	0	0	0	2	3	0	2	0	2	17
Apprch %	0	75	25	0	0	0	40	60	0	50	0	50	
Total %	0	35.3	11.8	0	0	0	11.8	17.6	0	11.8	0	11.8	

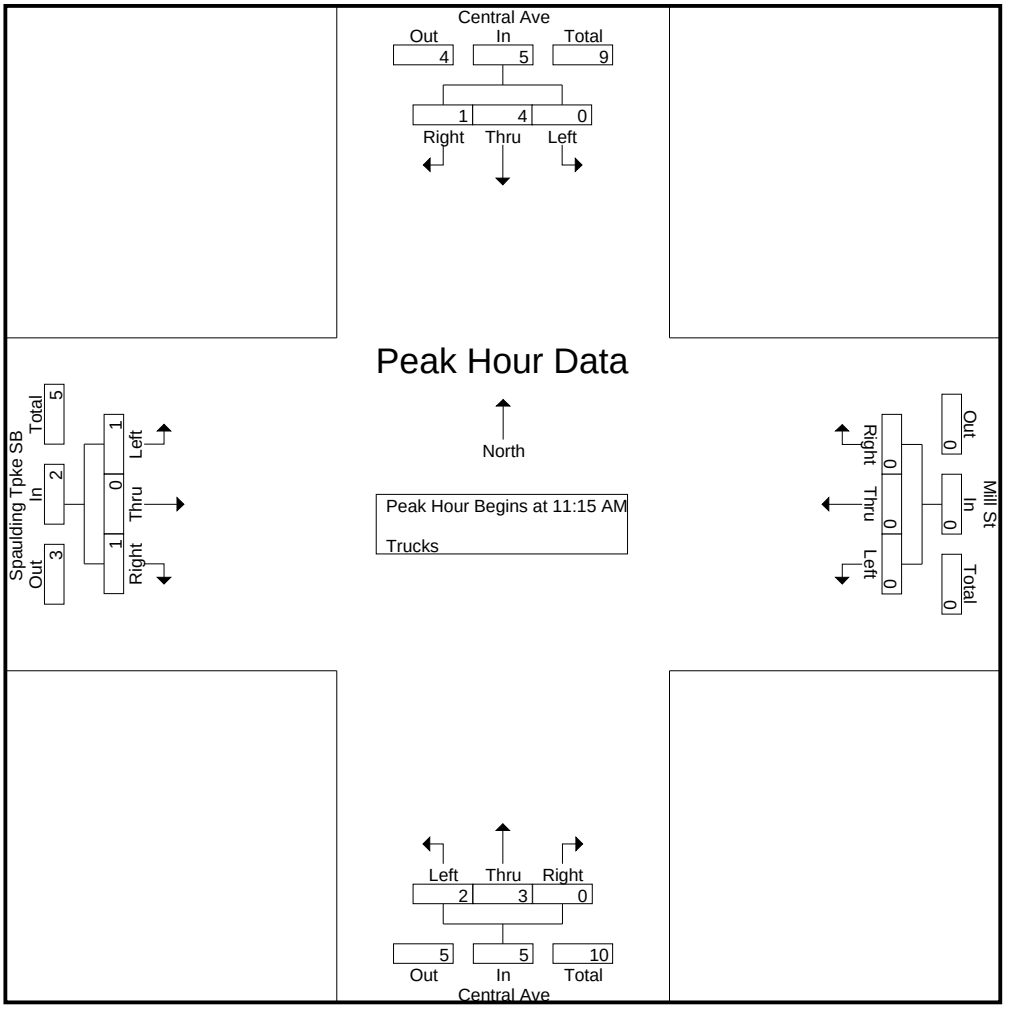
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	0	1	0	1	0	0	0	0	**1**	1	0	**2**	**1**	0	0	**1**	**4**
11:30 AM	0	1	0	1	0	0	0	0	0	**2**	0	2	0	0	0	0	3
11:45 AM	0	0	**1**	1	0	0	0	0	1	0	0	1	0	0	**1**	1	3
12:00 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	4	1	5	0	0	0	0	2	3	0	5	1	0	1	2	12
% App. Total	0	80	20		0	0	0		40	60	0		50	0	50		
PHF	.000	.500	.250	.625	.000	.000	.000	.000	.500	.375	.000	.625	.250	.000	.250	.500	.750

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 8



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

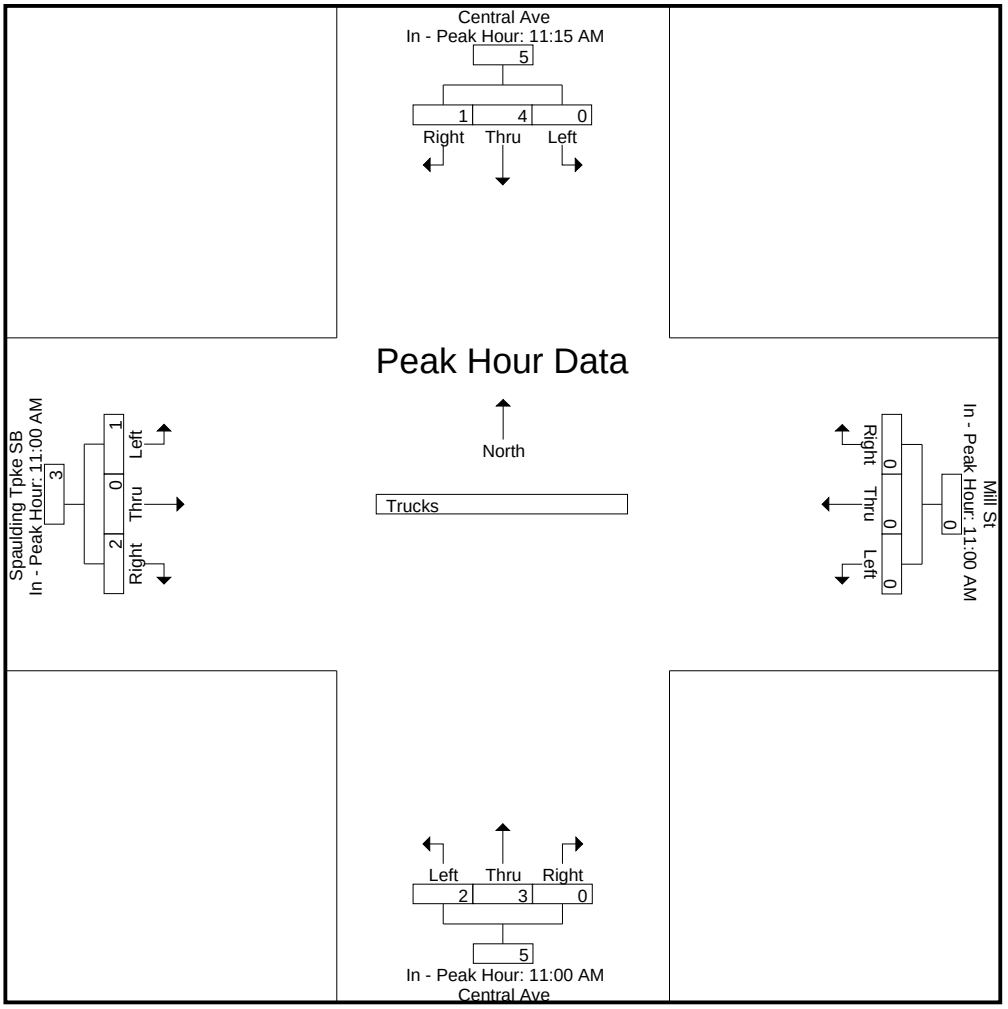
	11:15 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	1	0	1	0	0	0	0	**1**	1	0	**2**	**1**	0	0	1
+30 mins.	0	0	**1**	1	0	0	0	0	0	**2**	0	2	0	0	0	0
+45 mins.	0	**2**	0	**2**	0	0	0	0	1	0	0	1	0	0	1	1
Total Volume	0	4	1	5	0	0	0	0	2	3	0	5	1	0	2	3
% App. Total	0	80	20		0	0	0		40	60	0		33.3	0	66.7	
PHF	.000	.500	.250	.625	.000	.000	.000	.000	.500	.375	.000	.625	.250	.000	.500	.750

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025

Groups Printed- Bikes Peds

	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	5	0	5
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
11:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	4	0	4
Total	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	6	10	0	10
12:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
01:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
01:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	2
01:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	1	0	0	0	2	0	1	0	0	0	0	0	2	5	1	6
Grand Total	0	0	0	5	0	0	0	4	0	1	0	0	0	0	0	8	17	1	18
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0				
Total %	0	0	0		0	0	0		0	100	0		0	0	0		94.4	5.6	

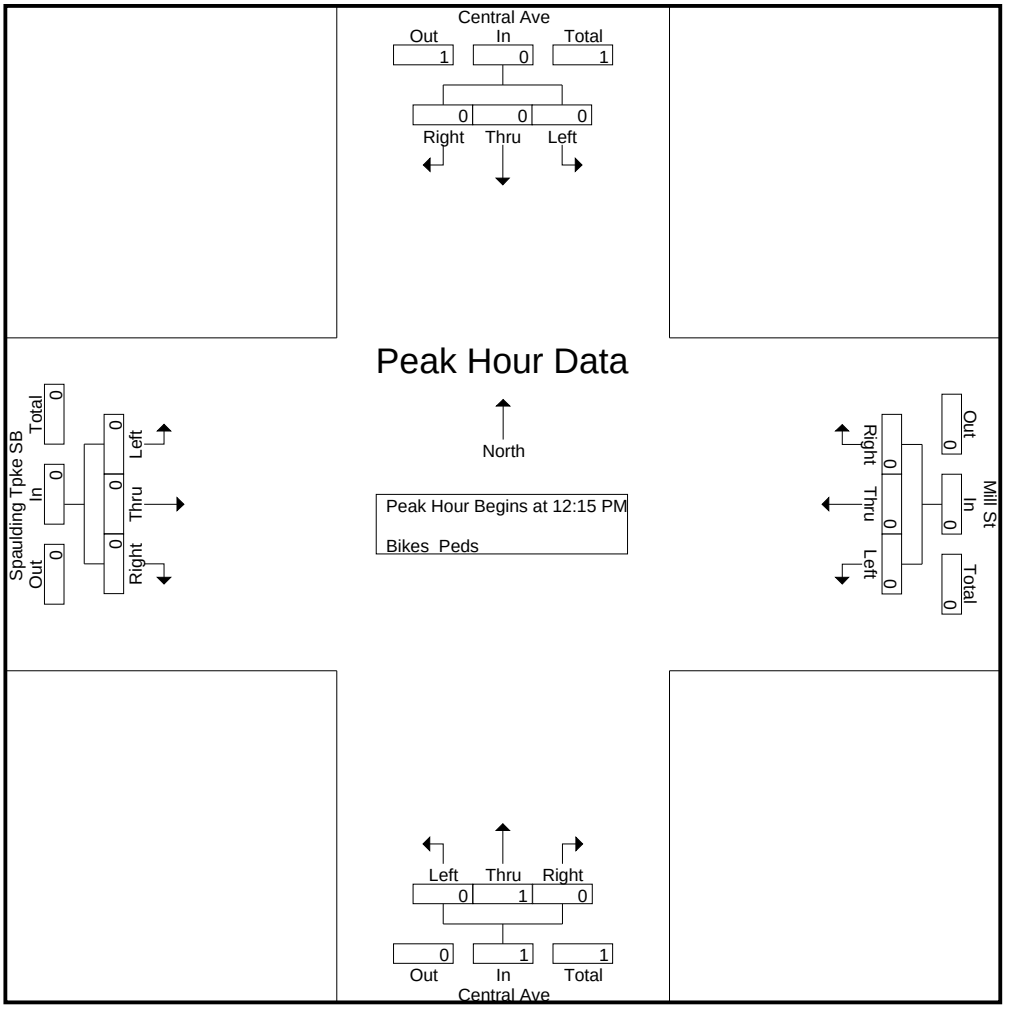
	Central Ave From North				Mill St From East				Central Ave From South				Spaulding Tpke SB From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
Site Code : 10566003
Start Date : 12/20/2025
Page No : 11



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

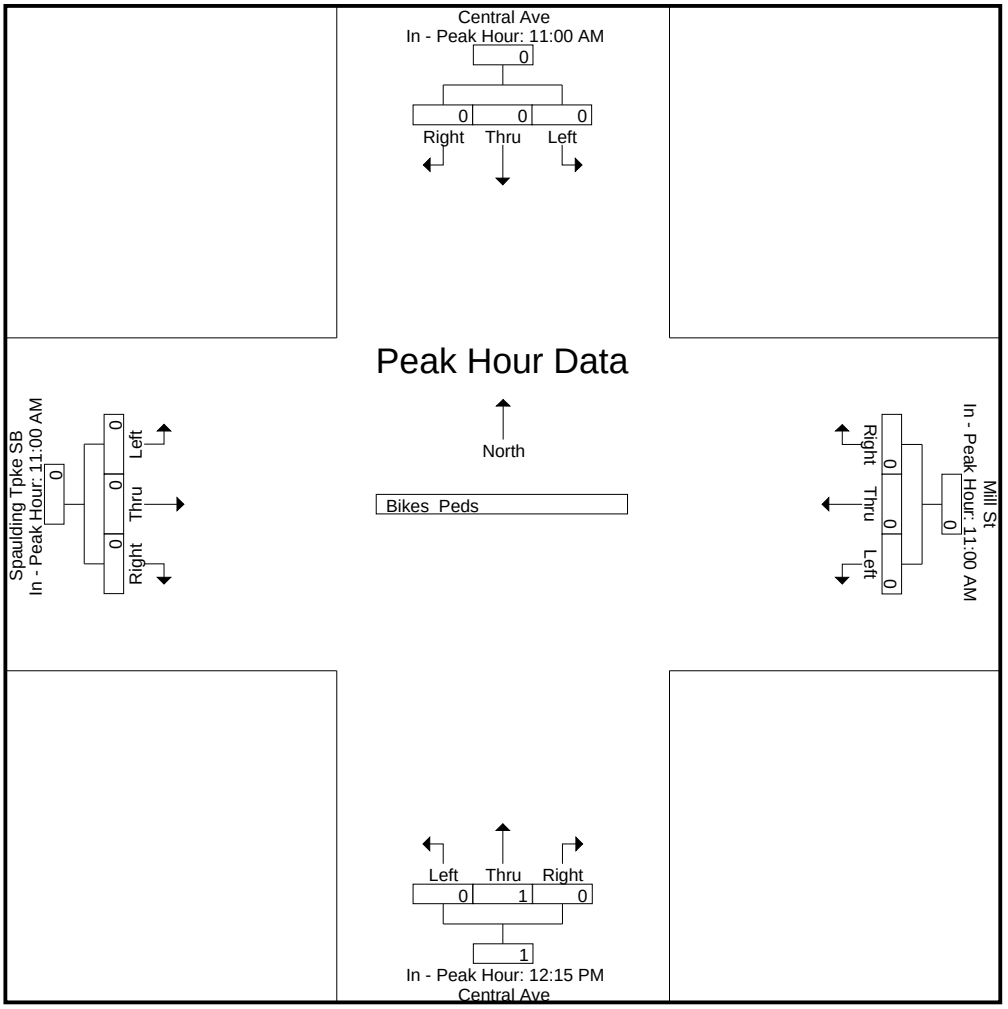
	11:00 AM				11:00 AM				12:15 PM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Central Avenue
E/W Street : Mill St / Spaulding Tpke SB
City/State : Dover, NH
Weather : Clear / Cloudy

File Name : 105660S3
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Page No : 12



SEASONAL ADJUSTMENT DATA

Year 2024 Monthly Data

Group 1 Averages: Rural Interstate

Month	MADT	Adjustment to Average	Adjustment to Peak
January	22,514	1.28	1.63
February	25,494	1.13	1.44
March	24,213	1.19	1.52
April	25,400	1.13	1.45
May	28,663	1.00	1.28
June	32,058	0.90	1.15
July	36,808	0.78	1.00
August	36,280	0.79	1.01
September	31,346	0.92	1.17
October	31,536	0.91	1.17
November	25,670	1.12	1.43
December	25,226	1.14	1.46

Average ADT: 28,767
Peak ADT: 36,808

GROUP	Station	TOWN	LOCATION
01	*02067002*	*Plymouth*	*I-93 at Plymouth TL (Exit 26-27)*
01	02197090	Hampton	I-95 at Hampton Toll (Exit 2)
01	02259090	Lincoln	I-93 between Exit 33 & 34A
01	02265092	Littleton	I-93 at Vermont SL
01	*02409003*	*Seabrook*	*I 95 at Mass SL*
01	02439005	Warner	I 89 at Warner TL (Exit 9-10)
01	02451001	Northfield	I-93 south of US 3/NH 11 (Exit 19-20)
01	*82199051*	*Hampton Falls*	*Interstate 95 S Rte: I-95*

** denotes Station that is not included in calculation*

Group 2 Averages: Rural Highways

Month	MADT	Adjustment to Average	Adjustment to Peak
January	7,116	1.15	1.31
February	7,772	1.06	1.20
March	7,393	1.11	1.26
April	7,621	1.08	1.22
May	8,555	0.96	1.09
June	8,985	0.91	1.03
July	9,298	0.88	1.00
August	9,232	0.89	1.01
September	8,762	0.94	1.06
October	8,720	0.94	1.07
November	7,678	1.07	1.21
December	7,261	1.13	1.28

Average ADT: 8,200
Peak ADT: 9,298

GROUP	Station	TOWN	LOCATION
02	02087021	Chesterfield	NH 9 (Franklin Pierce Hwy) 0.9 miles east of Vermont SL
02	02089002	Chichester	US 4/US 202/NH 9 east of Main St
02	02217001	Hillsborough	NH 9/NH 31 west of NH 31 (north)
02	*02277021*	*Lyme*	*NH 10 north of N Thetford Rd*
02	02347001	Northumberlan	US 3 south of Ball Rd (south)
02	02349001	Nottingham	US 4 (First NH TPK) at Nottingham TL (east of NH 152)
02	02395021	Rumney	NH 25 south of School St (northwest of Polar Caves)
02	22265079	Littleton	Union St Rte: NH 116
02	*62463050*	*Henniker*	*NH 114 at Henniker TL (east of Mink Hill Rd)*
02	82015056	Andover	US 4/NH 11 (Main St) west of Ragged Mtn Club Rd
02	*82095058*	*Colebrook*	*Park St Rte: NH 145*
02	*82145083*	*Enfield*	*Shaker Hill Rd*
02	*82335055*	*New London*	*Main St Rte: NH 114*

** denotes Station that is not included in calculation*

Group 3 Averages: Urban Interstate

Month	MADT	Adjustment to Average	Adjustment to Peak
January	55,896	1.13	1.24
February	60,551	1.04	1.14
March	59,483	1.06	1.16
April	59,780	1.06	1.16
May	64,795	0.98	1.07
June	67,952	0.93	1.02
July	68,918	0.92	1.00
August	69,116	0.91	1.00
September	65,947	0.96	1.05
October	66,777	0.95	1.04
November	60,102	1.05	1.15
December	59,223	1.07	1.17

Average ADT: 63,212
Peak ADT: 69,116

GROUP	Station	TOWN	LOCATION
03	02037090	Bedford	FEET at Bedford Tolls
03	02071090	Candia	NH 101 at Raymond TL (Exit 3-4)
03	02099091	Concord	I-93 south of US 4 Exit (16-17)
03	02099092	Concord	I-93 south of US 3 (Exit 12-13)
03	02099103	Concord	I-393/US 4/US 202 at Merrimack River (Exit 1-2)
03	02125090	Dover	Spaulding TPK/NH 16 at Dover Toll (Exit 6-7)
03	02153001	Exeter	NH 101 east of NH 108 (Exit 11-12)
03	02225091	Hooksett	I-93/FEET at Hooksett Toll (Exit 11)
03	02227001	Hopkinton	I-89 north of Concord TL (Exit 3-4)
03	02285092	Hooksett	I-93 at Hooksett TL (Exit 9-10)
03	*02331001*	*Newington*	*US 4/NH 16 (Spaulding TPK) east/south of General Sullivan Bridge (Exit 4-5)*
03	02389090	Rochester	NH 16 (Spaulding TPK) at Rochester Toll (Exit 9-11)
03	02399090	Salem	I-93 at Mass SL
03	02489002	Derry	I-93 south of Kendall Pond Rd (Exit 3-4)
03	22147021	Epping	NH Route 101 W Rte: NH 101 WB
03	*62037058*	*Bedford*	*Interstate 293 S Rte: FE Everett Tpk SB Exit 4*
03	*62099149*	*Concord*	*Interstate 393 W Rte: I-393 WB*
03	*62225068*	*Hooksett*	*Interstate 293 S Rte: FE Everett Tpk SB Exit 7*
03	62285152	Manchester	Interstate 93 N
03	62315281	Nashua	FEET south of the Canal Bridge Exit 5-6
03	*62399062*	*Salem*	*Interstate 93 S Rte: I-93 SB*

** denotes Station that is not included in calculation*

Group 4 Averages: Urban Highways

Month	MADT	Adjustment to Average	Adjustment to Peak
January	14,556	1.04	1.09
February	15,385	0.98	1.03
March	14,276	1.06	1.11
April	14,515	1.04	1.10
May	15,571	0.97	1.02
June	15,918	0.95	1.00
July	15,765	0.96	1.01
August	15,856	0.95	1.00
September	15,571	0.97	1.02
October	15,698	0.96	1.01
November	14,429	1.05	1.10
December	13,960	1.08	1.14

Average ADT: 15,125
Peak ADT: 15,918

GROUP	Station	TOWN	LOCATION
04	02051003	Bow	NH 3A south of Robinson Rd
04	02089001	Chichester	NH 28 (Suncook Valley Rd) north of Bear Hill Rd
04	02091001	Claremont	NH 12/103 east of Vermont SL
04	02125001	Dover	Dover Point Rd south of Thornwood Ln
04	02133021	Durham	US 4 east of NH 108
04	02229022	Hudson	Circumferential Hwy east of Nashua TL
04	02253025	Lebanon	NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
04	02255001	Barrington	NH 125 (Calef Hwy) north of Pinkham Rd
04	02287001	Marlborough	NH 12 at Swanzey TL
04	02297001	Merrimack	US 3 (Daniel Webster Hwy) north of Hilton Dr
04	*02303001*	*Amherst*	*NH 101A at Amherst TL (west of Overlook Dr)*
04	*02315051*	*Hudson*	*NH 111 (Bridge / Ferry St) at Hudson TL*
04	02339001	Newport	NH 10 1 mile south of Croydon TL (north of Corbin Rd)
04	02345001	North Hampto	US 1 (Lafayette Rd) north of North Rd
04	02445001	Wilton	NH 101 at Wilton TL (west of Old County Farm Rd)
04	*02489001*	*Windham*	*NH 28 at Derry TL (north of Northland Rd)*
04	*62099056*	*Concord*	*NH 106 (Sheep Davis Rd) at Loudon TL (north of Ashby Rd)*
04	*62099059*	*Concord*	*Clinton St Rte: NH 13*
04	*62387052*	*Rindge*	*US 202 at Jaffrey TL (north of County Rd)*
04	62389040	Rochester	Spaulding Tpke N
04	72099278	Concord	US 3 (Fisherville Rd) north of Sewalls Falls Rd
04	82037087	Bedford	New Boston Rd
04	*82101031*	*Conway*	*White Mountain Hwy at Washington St*
04	*82101032*	*Conway*	*Pleasent St*
04	*82101033*	*Conway*	*White Mountain Hwy at Pleasant St*
04	*82169060*	*Gilford*	*Weirs Rd Rte: NH 11B*
04	82197076	Hampton Falls	US 1 (Lafayette Rd) south of Ramp to NH 101
04	*82213067*	*Henniker*	*Rush Rd*
04	*82237075*	*Keene*	*Keene By-Pass Rte: NH 101*
04	82243052	Kingston	NH Route 125 Rte: NH 107
04	82253117	Lebanon	Meriden Rd Rte: NH 120
04	*82253119*	*Lebanon*	*Etna Rd*
04	*82303020*	*Milford*	*NH 101 (Milford Bypass) North of Phelan Rd*
04	*82303066*	*Milford*	*NH 101 (Milford Bypass) East of NH 13*

** denotes Station that is not included in calculation*

Group 5 Averages: Recreational Highways

Month	MADT	Adjustment to Average	Adjustment to Peak
January	8,660	1.03	1.30
February	9,328	0.96	1.20
March	6,917	1.29	1.62
April	7,605	1.17	1.48
May	9,166	0.97	1.22
June	10,361	0.86	1.08
July	11,221	0.79	1.00
August	10,753	0.83	1.04
September	9,214	0.97	1.22
October	8,998	0.99	1.25
November	7,542	1.18	1.49
December	7,144	1.25	1.57

Average ADT: 8,909
Peak ADT: 11,221

GROUP	Station	TOWN	LOCATION
05	02011001	Alton	NH 11 (Mt Major Hwy) south of Rand Hill Rd
05	02169053	Gilford	US 3/NH 11 1.2 miles north of NH 11A
05	*02235001*	*Jefferson*	*US 2 east of NH 115 (east of Carters Cut rd)*
05	02295022	Meredith	NH 104 west of Chase Rd (by Wickwas Lake)
05	*02357021*	*Ossipee*	*NH 16 (White Mtn Hwy) south of Pine River Rd*
05	02443001	Tamworth	NH 25/NH 113 east of Lords Hill Rd
05	22039022	Belmont	US 3/NH 11 (Daniel Webster Hwy) south of Union Rd
05	*62177051*	*Gorham*	*Main St Rte: NH 16*
05	62493054	Alton	NH 28 at Alton TL (south of Drew Hill Rd)
05	82101046	Conway	East Conway Rd
05	82313051	Moultonboroug	Moultonboro Neck Rd

** denotes Station that is not included in calculation*

Group 6 Averages: Other Recreational Highways

Month	MADT	Adjustment to Average	Adjustment to Peak
January	1,976	1.35	2.04
February	2,381	1.12	1.69
March	1,778	1.50	2.27
April	1,919	1.39	2.10
May	2,187	1.22	1.84
June	2,872	0.93	1.40
July	3,961	0.67	1.02
August	4,029	0.66	1.00
September	3,229	0.83	1.25
October	3,982	0.67	1.01
November	1,771	1.51	2.27
December	1,935	1.38	2.08

Average ADT: 2,668
Peak ADT: 4,029

GROUP	Station	TOWN	LOCATION
06	02029001	Bartlett	US 302 2 miles east of Harts Location TL
06	*02197002*	*Seabrook*	*NH 1A (Ocean Blvd) at Seabrook TL*
06	*02231001*	*Jackson*	*NH 16 south of Blake House Dr*

** denotes Station that is not included in calculation*

VEHICLE SPEED MEASUREMENTS

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: SB,

Site Code: 10566001

12/18/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	2	9	21	11	3	0	0	0	0	0	0	0	46
1:00	1	3	8	8	3	3	0	0	0	0	0	0	0	26
2:00	2	2	5	8	5	2	1	1	0	0	0	0	0	26
3:00	1	0	3	5	9	2	1	0	0	0	0	0	0	21
4:00	3	6	6	22	19	1	1	0	0	0	0	0	0	58
5:00	5	15	26	59	51	13	0	0	0	0	0	0	0	169
6:00	6	28	72	199	66	6	0	0	0	0	0	0	0	377
7:00	114	50	145	226	61	6	1	0	0	0	0	0	0	603
8:00	20	60	154	274	97	5	0	0	0	0	1	0	0	611
9:00	7	43	107	204	78	8	1	0	0	0	0	0	0	448
10:00	9	33	132	234	71	10	0	0	0	0	0	0	0	489
11:00	12	33	132	232	91	9	0	0	0	0	0	0	0	509
12:00 PM	32	57	145	235	79	7	0	0	0	0	0	0	0	555
1:00	20	55	198	253	62	1	2	0	0	0	0	0	0	591
2:00	45	143	278	203	34	4	0	0	0	0	0	0	0	707
3:00	191	225	283	121	13	4	0	1	0	0	0	0	0	838
4:00	69	185	344	223	37	2	0	0	0	0	0	0	0	860
5:00	41	105	253	263	30	2	0	0	0	0	0	0	0	694
6:00	17	37	162	249	45	2	0	0	0	0	0	0	0	512
7:00	13	35	96	154	45	5	0	0	0	0	0	0	0	348
8:00	8	17	89	162	31	4	0	0	0	0	0	0	0	311
9:00	9	31	54	86	43	3	0	0	0	0	0	0	0	226
10:00	2	7	28	58	26	2	0	0	0	0	0	0	0	123
11:00	4	6	21	43	10	2	0	0	0	0	0	0	0	86
Total	631	1178	2750	3542	1017	106	7	2	0	0	1	0	0	9234

Percentile	15th	50th	85th	95th
Speed	18	24	29	31

Mean Speed (Average)	24.6
10 MPH Pace Speed	21-30
Number in Pace	6292
Percent in Pace	68.0%
Number > 25 MPH	4675
Percent > 25 MPH	50.6%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: SB,

Site Code: 10566001

12/19/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	7	7	15	9	0	0	0	0	0	0	0	0	39
1:00	0	2	5	17	3	2	0	0	0	0	0	0	0	29
2:00	1	3	1	7	4	2	0	0	0	0	0	0	0	18
3:00	2	1	2	15	7	1	1	0	0	0	0	0	0	29
4:00	4	5	7	21	14	5	0	0	0	0	0	0	0	56
5:00	1	8	19	64	48	9	0	0	0	0	0	0	0	149
6:00	2	16	76	163	72	6	0	0	0	0	0	0	0	335
7:00	255	112	79	33	11	1	0	0	0	0	0	0	0	491
8:00	94	89	137	189	56	5	1	0	0	0	0	0	0	571
9:00	12	41	129	210	80	8	1	0	0	0	0	0	0	481
10:00	25	33	176	232	60	8	0	0	0	0	0	0	0	534
11:00	17	55	164	273	86	7	0	0	0	0	0	0	0	602
12:00 PM	20	55	173	253	62	5	0	1	0	0	0	0	0	569
1:00	29	55	164	264	71	8	0	0	0	0	0	0	0	591
2:00	32	106	223	257	74	4	0	0	0	0	0	0	0	696
3:00	45	108	231	244	49	1	0	0	0	0	0	0	0	678
4:00	12	105	282	206	49	3	2	0	0	0	0	0	0	659
5:00	21	81	283	253	47	3	0	0	0	0	0	0	0	688
6:00	8	39	187	244	40	5	0	0	0	0	0	0	0	523
7:00	3	21	92	172	49	4	1	0	0	0	0	0	0	342
8:00	4	23	72	120	55	3	1	0	0	0	0	0	0	278
9:00	2	22	54	111	43	4	0	0	0	0	0	0	0	236
10:00	2	24	25	81	44	4	1	0	0	0	0	0	0	181
11:00	6	10	19	52	21	4	0	0	0	0	0	0	0	112
Total	598	1021	2607	3496	1054	102	8	1	0	0	0	0	0	8887

Percentile	15th	50th	85th	95th
Speed	18	24	29	31

Mean Speed (Average)	24.8
10 MPH Pace Speed	21-30
Number in Pace	6103
Percent in Pace	69.0%
Number > 25 MPH	4661
Percent > 25 MPH	52.4%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: SB,

Site Code: 10566001

12/20/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	2	8	12	35	9	2	0	0	0	0	0	0	0	68
1:00	2	9	8	11	5	4	0	0	0	0	0	0	0	39
2:00	1	0	8	12	5	2	2	0	0	0	0	0	0	30
3:00	0	0	1	8	4	0	0	0	0	0	0	0	0	13
4:00	0	3	8	11	11	2	0	0	0	0	0	0	0	35
5:00	1	9	9	19	17	5	2	1	0	0	0	0	0	63
6:00	6	4	28	50	34	5	1	0	0	0	0	0	0	128
7:00	3	8	36	83	68	7	2	0	0	0	0	0	0	207
8:00	8	10	59	140	64	9	0	0	0	0	0	0	0	290
9:00	8	27	103	222	90	7	0	0	0	0	0	0	0	457
10:00	14	36	192	256	74	9	0	0	0	0	0	0	0	581
11:00	21	43	193	259	107	9	0	0	0	0	0	0	0	632
12:00 PM	24	39	183	289	99	5	0	0	0	0	0	0	0	639
1:00	7	41	191	294	76	6	0	0	0	0	0	0	0	615
2:00	15	54	216	283	94	2	1	0	0	0	0	0	0	665
3:00	13	59	165	291	78	7	0	0	0	0	0	0	0	613
4:00	10	33	132	249	64	13	0	0	0	0	0	0	0	501
5:00	5	33	134	189	55	4	0	0	0	0	0	0	0	420
6:00	2	28	92	198	61	5	0	0	0	0	0	0	0	386
7:00	4	21	71	160	50	3	0	0	0	0	0	0	0	309
8:00	9	18	51	129	56	5	0	0	0	0	0	0	0	268
9:00	8	14	43	108	44	1	1	0	0	0	0	0	0	219
10:00	8	12	34	71	33	2	1	0	0	0	0	0	0	161
11:00	2	9	23	39	32	3	0	0	0	0	0	0	0	108
Total	173	518	1992	3406	1230	117	10	1	0	0	0	0	0	7447
			Percentile	15th	50th	85th	95th							
			Speed	21	26	29	32							
		Mean Speed (Average)		26.6										
		10 MPH Pace Speed		21-30										
		Number in Pace		5231										
		Percent in Pace		73.0%										
		Number > 25 MPH		4764										
		Percent > 25 MPH		64.0%										
Grand Total	1402	2717	7349	10444	3301	325	25	4	0	0	1	0	0	25568
Stats			Percentile	15th	50th	85th	95th							
			Speed	19	24	29	31							
		Mean Speed (Average)		25.2										
		10 MPH Pace Speed		21-30										
		Number in Pace		17731										
		Percent in Pace		70.0%										
		Number > 25 MPH		14100										
		Percent > 25 MPH		55.1%										

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: NB,

Site Code: 10566001

12/18/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	7	6	14	8	4	5	3	2	1	0	0	0	51
1:00	0	2	2	8	7	0	0	0	1	0	0	0	0	20
2:00	2	2	5	6	2	0	0	0	0	0	0	0	0	17
3:00	0	1	7	9	3	0	0	0	0	0	0	0	0	20
4:00	0	3	9	15	12	1	0	0	0	0	0	0	0	40
5:00	2	8	21	74	26	5	1	0	0	0	0	0	0	137
6:00	17	19	91	119	27	2	1	1	0	1	0	0	0	278
7:00	26	63	181	225	50	5	1	0	0	0	0	2	0	553
8:00	39	92	223	244	28	5	0	0	0	1	0	0	0	632
9:00	41	47	167	185	52	4	1	2	0	0	0	0	0	499
10:00	26	67	164	185	49	7	2	0	0	0	0	0	0	500
11:00	34	45	131	165	39	6	0	1	0	1	0	0	0	422
12:00 PM	48	71	165	126	43	3	1	0	0	1	0	0	0	458
1:00	43	76	168	133	36	2	1	0	0	0	0	0	0	459
2:00	48	77	190	154	29	2	1	1	0	0	0	0	0	502
3:00	94	133	209	73	8	2	0	0	0	0	0	0	0	519
4:00	121	145	167	79	9	4	0	0	0	0	0	0	0	525
5:00	77	99	180	107	11	2	0	0	0	0	0	0	0	476
6:00	35	63	169	111	16	1	0	1	0	0	0	0	0	396
7:00	6	52	136	141	19	1	0	0	0	0	0	0	0	355
8:00	8	19	76	85	31	2	0	0	0	0	0	0	0	221
9:00	11	14	67	81	14	4	1	0	0	0	0	0	0	192
10:00	1	5	22	44	11	2	1	0	0	0	0	0	0	86
11:00	2	4	22	15	15	1	0	0	0	0	0	0	0	59
Total	682	1114	2578	2398	545	65	16	9	3	5	0	2	0	7417

Percentile	15th	50th	85th	95th
Speed	17	23	28	30

Mean Speed (Average)	23.5
10 MPH Pace Speed	21-30
Number in Pace	4976
Percent in Pace	67.0%
Number > 25 MPH	3043
Percent > 25 MPH	41.0%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: NB,

Site Code: 10566001

12/19/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	3	15	26	6	1	0	1	0	0	0	0	0	52
1:00	1	1	5	11	6	1	0	0	0	0	0	0	0	25
2:00	1	1	4	5	5	0	0	0	0	0	0	0	0	16
3:00	0	3	6	7	6	0	1	0	0	0	0	0	0	23
4:00	0	1	3	19	10	1	1	0	0	0	0	0	0	35
5:00	4	2	23	46	18	7	0	0	0	0	0	0	0	100
6:00	8	26	78	122	36	2	0	0	0	0	0	0	0	272
7:00	45	83	173	139	28	0	1	0	0	0	0	0	0	469
8:00	39	92	237	189	42	5	0	0	0	0	0	0	0	604
9:00	21	40	153	240	38	5	1	0	0	0	0	0	0	498
10:00	15	56	182	178	34	5	0	0	0	0	0	0	0	470
11:00	49	45	153	153	42	10	0	0	0	0	0	0	0	452
12:00 PM	99	114	194	131	25	0	0	0	0	0	0	0	0	563
1:00	38	83	164	157	35	4	1	0	0	0	0	0	0	482
2:00	59	105	172	129	34	3	1	0	0	0	0	0	0	503
3:00	81	101	209	125	17	1	0	0	0	0	0	0	0	534
4:00	73	134	168	121	21	1	0	0	0	0	0	0	0	518
5:00	52	96	185	122	11	3	0	0	0	0	0	0	0	469
6:00	20	61	171	133	27	3	0	1	0	0	0	0	0	416
7:00	5	14	97	133	30	5	0	0	0	0	0	0	0	284
8:00	2	12	72	110	25	1	0	0	0	0	0	0	0	222
9:00	8	7	65	84	35	4	0	0	0	0	0	0	0	203
10:00	5	6	39	52	21	6	0	0	0	0	0	0	0	129
11:00	3	11	14	30	17	3	0	0	0	0	0	0	0	78
Total	628	1097	2582	2462	569	71	6	2	0	0	0	0	0	7417

Percentile	15th	50th	85th	95th
Speed	17	23	28	30

Mean Speed (Average)	23.6
10 MPH Pace Speed	21-30
Number in Pace	5044
Percent in Pace	68.0%
Number > 25 MPH	3110
Percent > 25 MPH	41.9%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: NB,

Site Code: 10566001

12/20/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	3	1	21	49	9	2	2	0	0	0	0	0	0	87
1:00	2	2	13	13	6	0	0	0	0	0	0	0	0	36
2:00	0	1	6	6	10	0	0	0	0	0	0	0	0	23
3:00	0	0	5	8	4	1	0	0	0	0	0	0	0	18
4:00	0	1	7	18	2	1	0	0	0	0	0	0	0	29
5:00	0	4	14	17	13	3	0	0	0	0	0	0	0	51
6:00	3	12	32	44	31	6	1	1	0	0	0	0	0	130
7:00	1	5	50	119	55	9	0	0	0	0	0	0	0	239
8:00	12	27	104	189	69	5	1	0	0	0	0	0	0	407
9:00	23	41	172	211	69	8	0	0	0	0	0	0	0	524
10:00	46	65	174	186	39	3	1	0	0	1	1	0	0	516
11:00	42	44	217	225	69	3	0	0	0	0	0	0	0	600
12:00 PM	42	50	161	196	46	8	2	0	0	0	0	0	0	505
1:00	15	34	148	211	75	7	0	0	0	0	0	0	0	490
2:00	34	34	187	170	34	2	1	0	0	0	0	0	0	462
3:00	31	55	130	162	47	6	0	0	0	0	0	0	0	431
4:00	17	62	154	160	24	2	0	0	0	0	0	0	0	419
5:00	15	35	143	155	30	1	0	2	0	0	0	0	0	381
6:00	9	25	114	141	36	2	1	0	1	0	0	0	0	329
7:00	5	18	81	118	36	6	0	0	0	0	0	0	0	264
8:00	12	10	62	102	29	4	0	0	0	0	0	0	0	219
9:00	6	15	60	93	20	1	1	0	0	0	0	0	0	196
10:00	3	14	28	44	29	5	1	0	0	0	0	0	0	124
11:00	5	3	15	36	13	1	1	0	0	0	0	0	0	74
Total	326	558	2098	2673	795	86	12	3	1	1	1	0	0	6554
			Percentile	15th	50th	85th	95th							
			Speed	20	24	29	31							
		Mean Speed (Average)		25.4										
		10 MPH Pace Speed		21-30										
		Number in Pace		4648										
		Percent in Pace		73.0%										
		Number > 25 MPH		3572										
		Percent > 25 MPH		54.5%										
Grand Total	1636	2769	7258	7533	1909	222	34	14	4	6	1	2	0	21388
Stats			Percentile	15th	50th	85th	95th							
			Speed	18	24	28	31							
		Mean Speed (Average)		24.1										
		10 MPH Pace Speed		21-30										
		Number in Pace		14740										
		Percent in Pace		69.0%										
		Number > 25 MPH		9725										
		Percent > 25 MPH		45.5%										

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: Combined

Site Code: 10566001

12/18/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	9	15	35	19	7	5	3	2	1	0	0	0	97
1:00	1	5	10	16	10	3	0	0	1	0	0	0	0	46
2:00	4	4	10	14	7	2	1	1	0	0	0	0	0	43
3:00	1	1	10	14	12	2	1	0	0	0	0	0	0	41
4:00	3	9	15	37	31	2	1	0	0	0	0	0	0	98
5:00	7	23	47	133	77	18	1	0	0	0	0	0	0	306
6:00	23	47	163	318	93	8	1	1	0	1	0	0	0	655
7:00	140	113	326	451	111	11	2	0	0	0	0	2	0	1156
8:00	59	152	377	518	125	10	0	0	0	1	1	0	0	1243
9:00	48	90	274	389	130	12	2	2	0	0	0	0	0	947
10:00	35	100	296	419	120	17	2	0	0	0	0	0	0	989
11:00	46	78	263	397	130	15	0	1	0	1	0	0	0	931
12:00 PM	80	128	310	361	122	10	1	0	0	1	0	0	0	1013
1:00	63	131	366	386	98	3	3	0	0	0	0	0	0	1050
2:00	93	220	468	357	63	6	1	1	0	0	0	0	0	1209
3:00	285	358	492	194	21	6	0	1	0	0	0	0	0	1357
4:00	190	330	511	302	46	6	0	0	0	0	0	0	0	1385
5:00	118	204	433	370	41	4	0	0	0	0	0	0	0	1170
6:00	52	100	331	360	61	3	0	1	0	0	0	0	0	908
7:00	19	87	232	295	64	6	0	0	0	0	0	0	0	703
8:00	16	36	165	247	62	6	0	0	0	0	0	0	0	532
9:00	20	45	121	167	57	7	1	0	0	0	0	0	0	418
10:00	3	12	50	102	37	4	1	0	0	0	0	0	0	209
11:00	6	10	43	58	25	3	0	0	0	0	0	0	0	145
Total	1313	2292	5328	5940	1562	171	23	11	3	5	1	2	0	16651

Percentile	15th	50th	85th	95th
Speed	17	24	28	31

Mean Speed (Average)	24.1
10 MPH Pace Speed	21-30
Number in Pace	11268
Percent in Pace	68.0%
Number > 25 MPH	7718
Percent > 25 MPH	46.4%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: Combined

Site Code: 10566001

12/19/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	1	10	22	41	15	1	0	1	0	0	0	0	0	91
1:00	1	3	10	28	9	3	0	0	0	0	0	0	0	54
2:00	2	4	5	12	9	2	0	0	0	0	0	0	0	34
3:00	2	4	8	22	13	1	2	0	0	0	0	0	0	52
4:00	4	6	10	40	24	6	1	0	0	0	0	0	0	91
5:00	5	10	42	110	66	16	0	0	0	0	0	0	0	249
6:00	10	42	154	285	108	8	0	0	0	0	0	0	0	607
7:00	300	195	252	172	39	1	1	0	0	0	0	0	0	960
8:00	133	181	374	378	98	10	1	0	0	0	0	0	0	1175
9:00	33	81	282	450	118	13	2	0	0	0	0	0	0	979
10:00	40	89	358	410	94	13	0	0	0	0	0	0	0	1004
11:00	66	100	317	426	128	17	0	0	0	0	0	0	0	1054
12:00 PM	119	169	367	384	87	5	0	1	0	0	0	0	0	1132
1:00	67	138	328	421	106	12	1	0	0	0	0	0	0	1073
2:00	91	211	395	386	108	7	1	0	0	0	0	0	0	1199
3:00	126	209	440	369	66	2	0	0	0	0	0	0	0	1212
4:00	85	239	450	327	70	4	2	0	0	0	0	0	0	1177
5:00	73	177	468	375	58	6	0	0	0	0	0	0	0	1157
6:00	28	100	358	377	67	8	0	1	0	0	0	0	0	939
7:00	8	35	189	305	79	9	1	0	0	0	0	0	0	626
8:00	6	35	144	230	80	4	1	0	0	0	0	0	0	500
9:00	10	29	119	195	78	8	0	0	0	0	0	0	0	439
10:00	7	30	64	133	65	10	1	0	0	0	0	0	0	310
11:00	9	21	33	82	38	7	0	0	0	0	0	0	0	190
Total	1226	2118	5189	5958	1623	173	14	3	0	0	0	0	0	16304

Percentile	15th	50th	85th	95th
Speed	18	24	28	31

Mean Speed (Average)	24.3
10 MPH Pace Speed	21-30
Number in Pace	11147
Percent in Pace	68.0%
Number > 25 MPH	7771
Percent > 25 MPH	47.7%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH
Direction: Combined

Site Code: 10566001

12/20/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	5	9	33	84	18	4	2	0	0	0	0	0	0	155
1:00	4	11	21	24	11	4	0	0	0	0	0	0	0	75
2:00	1	1	14	18	15	2	2	0	0	0	0	0	0	53
3:00	0	0	6	16	8	1	0	0	0	0	0	0	0	31
4:00	0	4	15	29	13	3	0	0	0	0	0	0	0	64
5:00	1	13	23	36	30	8	2	1	0	0	0	0	0	114
6:00	9	16	60	94	65	11	2	1	0	0	0	0	0	258
7:00	4	13	86	202	123	16	2	0	0	0	0	0	0	446
8:00	20	37	163	329	133	14	1	0	0	0	0	0	0	697
9:00	31	68	275	433	159	15	0	0	0	0	0	0	0	981
10:00	60	101	366	442	113	12	1	0	0	1	1	0	0	1097
11:00	63	87	410	484	176	12	0	0	0	0	0	0	0	1232
12:00 PM	66	89	344	485	145	13	2	0	0	0	0	0	0	1144
1:00	22	75	339	505	151	13	0	0	0	0	0	0	0	1105
2:00	49	88	403	453	128	4	2	0	0	0	0	0	0	1127
3:00	44	114	295	453	125	13	0	0	0	0	0	0	0	1044
4:00	27	95	286	409	88	15	0	0	0	0	0	0	0	920
5:00	20	68	277	344	85	5	0	2	0	0	0	0	0	801
6:00	11	53	206	339	97	7	1	0	1	0	0	0	0	715
7:00	9	39	152	278	86	9	0	0	0	0	0	0	0	573
8:00	21	28	113	231	85	9	0	0	0	0	0	0	0	487
9:00	14	29	103	201	64	2	2	0	0	0	0	0	0	415
10:00	11	26	62	115	62	7	2	0	0	0	0	0	0	285
11:00	7	12	38	75	45	4	1	0	0	0	0	0	0	182
Total	499	1076	4090	6079	2025	203	22	4	1	1	1	0	0	14001
			Percentile	15th	50th	85th	95th							
			Speed	20	25	29	32							
		Mean Speed (Average)		26.0										
		10 MPH Pace Speed		21-30										
		Number in Pace		9879										
		Percent in Pace		73.0%										
		Number > 25 MPH		8336										
		Percent > 25 MPH		59.5%										
Grand Total	3038	5486	14607	17977	5210	547	59	18	4	6	2	2	0	46956
Stats			Percentile	15th	50th	85th	95th							
			Speed	18	24	29	31							
		Mean Speed (Average)		24.7										
		10 MPH Pace Speed		21-30										
		Number in Pace		32471										
		Percent in Pace		69.0%										
		Number > 25 MPH		23825										
		Percent > 25 MPH		50.7%										

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH

Site Code: 10566001

12/18/2025	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	14	133			8	131				
12:15	8	151			18	84				
12:30	15	126			18	110				
12:45	9	145	46	555	7	133	51	458	97	1013
1:00	6	148			5	127				
1:15	6	138			4	110				
1:30	7	158			7	117				
1:45	7	147	26	591	4	105	20	459	46	1050
2:00	11	185			5	112				
2:15	6	174			3	115				
2:30	6	175			4	142				
2:45	3	173	26	707	5	133	17	502	43	1209
3:00	2	208			3	129				
3:15	7	227			5	115				
3:30	6	176			3	147				
3:45	6	227	21	838	9	128	20	519	41	1357
4:00	12	189			6	148				
4:15	14	220			7	130				
4:30	12	190			14	112				
4:45	20	261	58	860	13	135	40	525	98	1385
5:00	23	180			17	120				
5:15	41	181			32	129				
5:30	45	165			43	121				
5:45	60	168	169	694	45	106	137	476	306	1170
6:00	40	147			54	94				
6:15	61	126			71	98				
6:30	115	126			72	108				
6:45	161	113	377	512	81	96	278	396	655	908
7:00	163	96			108	98				
7:15	123	95			137	105				
7:30	161	93			145	80				
7:45	156	64	603	348	163	72	553	355	1156	703
8:00	164	62			173	48				
8:15	149	90			168	77				
8:30	148	90			144	49				
8:45	150	69	611	311	147	47	632	221	1243	532
9:00	110	70			138	50				
9:15	119	64			127	55				
9:30	117	49			109	43				
9:45	102	43	448	226	125	44	499	192	947	418
10:00	103	31			126	18				
10:15	128	34			119	25				
10:30	132	34			123	21				
10:45	126	24	489	123	132	22	500	86	989	209
11:00	110	28			100	18				
11:15	133	25			85	18				
11:30	134	22			120	10				
11:45	132	11	509	86	117	13	422	59	931	145
Total	3383	5851			3169	4248			6552	10099
Percent	36.6%	63.4%			42.7%	57.3%			39.3%	60.7%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH

Site Code: 10566001

12/19/2025	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	14	140			12	134				
12:15	11	153			15	142				
12:30	8	131			16	147				
12:45	6	145	39	569	9	140	52	563	91	1132
1:00	7	157			13	129				
1:15	5	121			3	133				
1:30	7	170			7	110				
1:45	10	143	29	591	2	110	25	482	54	1073
2:00	5	174			5	103				
2:15	3	168			3	114				
2:30	6	178			6	159				
2:45	4	176	18	696	2	127	16	503	34	1199
3:00	5	154			5	149				
3:15	4	194			3	135				
3:30	5	172			9	119				
3:45	15	158	29	678	6	131	23	534	52	1212
4:00	11	167			8	127				
4:15	10	190			3	142				
4:30	9	157			12	126				
4:45	26	145	56	659	12	123	35	518	91	1177
5:00	25	191			18	129				
5:15	26	170			18	109				
5:30	43	165			32	117				
5:45	55	162	149	688	32	114	100	469	249	1157
6:00	35	118			42	93				
6:15	68	137			80	133				
6:30	91	141			64	104				
6:45	141	127	335	523	86	86	272	416	607	939
7:00	149	101			105	68				
7:15	60	94			118	75				
7:30	153	84			121	74				
7:45	129	63	491	342	125	67	469	284	960	626
8:00	142	71			134	72				
8:15	161	84			190	45				
8:30	135	57			157	48				
8:45	133	66	571	278	123	57	604	222	1175	500
9:00	129	63			129	57				
9:15	117	69			139	60				
9:30	121	53			107	36				
9:45	114	51	481	236	123	50	498	203	979	439
10:00	113	47			115	31				
10:15	132	48			117	33				
10:30	139	47			110	35				
10:45	150	39	534	181	128	30	470	129	1004	310
11:00	130	31			131	21				
11:15	143	32			105	25				
11:30	138	29			98	15				
11:45	191	20	602	112	118	17	452	78	1054	190
Total	3334	5553			3016	4401			6350	9954
Percent	37.5%	62.5%			40.7%	59.3%			38.9%	61.1%

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH

Site Code: 10566001

12/20/2025	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	23	159			20	143				
12:15	21	162			32	108				
12:30	13	158			20	127				
12:45	11	160	68	639	15	127	87	505	155	1144
1:00	11	136			12	128				
1:15	10	157			10	134				
1:30	12	170			7	114				
1:45	6	152	39	615	7	114	36	490	75	1105
2:00	13	163			6	103				
2:15	7	175			6	145				
2:30	3	160			7	92				
2:45	7	167	30	665	4	122	23	462	53	1127
3:00	2	178			6	113				
3:15	2	158			4	117				
3:30	1	152			5	109				
3:45	8	125	13	613	3	92	18	431	31	1044
4:00	8	121			6	95				
4:15	13	129			7	103				
4:30	8	128			8	114				
4:45	6	123	35	501	8	107	29	419	64	920
5:00	9	123			4	97				
5:15	9	88			12	98				
5:30	16	115			16	84				
5:45	29	94	63	420	19	102	51	381	114	801
6:00	25	108			23	82				
6:15	25	80			36	94				
6:30	33	99			36	75				
6:45	45	99	128	386	35	78	130	329	258	715
7:00	27	78			37	68				
7:15	45	82			62	75				
7:30	74	85			59	59				
7:45	61	64	207	309	81	62	239	264	446	573
8:00	42	60			80	60				
8:15	60	77			95	47				
8:30	98	65			86	67				
8:45	90	66	290	268	146	45	407	219	697	487
9:00	99	62			129	51				
9:15	105	61			137	44				
9:30	126	54			122	55				
9:45	127	42	457	219	136	46	524	196	981	415
10:00	143	52			139	35				
10:15	141	40			119	36				
10:30	148	37			122	33				
10:45	149	32	581	161	136	20	516	124	1097	285
11:00	178	35			134	22				
11:15	147	32			165	18				
11:30	149	29			146	21				
11:45	158	12	632	108	155	13	600	74	1232	182
Total	2543	4904			2660	3894			5203	8798
Percent	34.1%	65.9%			40.6%	59.4%			37.2%	62.8%
Grand Total	9260	16308			8845	12543			18105	28851
Percent	36.2%	63.8%			41.4%	58.6%			38.6%	61.4%
ADT		ADT: 15,652		AADT: 15,652						

Accurate Counts
978-664-2565

Location : Central Avenue
Location : South of 47 Central Avenue
City/State: Dover, NH

Site Code: 10566001

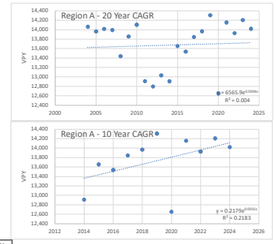
12/15/2025	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,
12:00 AM	*	*	*	*	*	*	46	51	39	52	68	87	*	*	51	63
1:00	*	*	*	*	*	*	26	20	29	25	39	36	*	*	31	27
2:00	*	*	*	*	*	*	26	17	18	16	30	23	*	*	25	19
3:00	*	*	*	*	*	*	21	20	29	23	13	18	*	*	21	20
4:00	*	*	*	*	*	*	58	40	56	35	35	29	*	*	50	35
5:00	*	*	*	*	*	*	169	137	149	100	63	51	*	*	127	96
6:00	*	*	*	*	*	*	377	278	335	272	128	130	*	*	280	227
7:00	*	*	*	*	*	*	603	553	491	469	207	239	*	*	434	420
8:00	*	*	*	*	*	*	611	632	571	604	290	407	*	*	491	548
9:00	*	*	*	*	*	*	448	499	481	498	457	524	*	*	462	507
10:00	*	*	*	*	*	*	489	500	534	470	581	516	*	*	535	495
11:00	*	*	*	*	*	*	509	422	602	452	632	600	*	*	581	491
12:00 PM	*	*	*	*	*	*	555	458	569	563	639	505	*	*	588	509
1:00	*	*	*	*	*	*	591	459	591	482	615	490	*	*	599	477
2:00	*	*	*	*	*	*	707	502	696	503	665	462	*	*	689	489
3:00	*	*	*	*	*	*	838	519	678	534	613	431	*	*	710	495
4:00	*	*	*	*	*	*	860	525	659	518	501	419	*	*	673	487
5:00	*	*	*	*	*	*	694	476	688	469	420	381	*	*	601	442
6:00	*	*	*	*	*	*	512	396	523	416	386	329	*	*	474	380
7:00	*	*	*	*	*	*	348	355	342	284	309	264	*	*	333	301
8:00	*	*	*	*	*	*	311	221	278	222	268	219	*	*	286	221
9:00	*	*	*	*	*	*	226	192	236	203	219	196	*	*	227	197
10:00	*	*	*	*	*	*	123	86	181	129	161	124	*	*	155	113
11:00	*	*	*	*	*	*	86	59	112	78	108	74	*	*	102	70
Total	0	0	0	0	0	0	9234	7417	8887	7417	7447	6554	0	0	8525	7129
Day	0		0		0		16651		16304		14001		0		15654	
AM Peak							8:00	8:00	11:00	8:00	11:00	11:00			11:00	8:00
Volume							611	632	602	604	632	600			581	548
PM Peak							4:00	4:00	2:00	12:00 PM	2:00	12:00 PM			3:00	12:00 PM
Volume							860	525	696	563	665	505			710	509
Comb Total	0		0		0		16651		16304		14001		0		15654	
ADT	ADT: 15,652		AADT: 15,652													

GROWTH RATE DATA

Region A

Year	VPY	Annual Change
2004	14,061	
2005	13,962	-0.70%
2006	14,014	0.37%
2007	13,993	-0.15%
2008	13,437	-3.97%
2009	13,855	3.11%
2010	14,105	1.80%
2011	12,909	-8.48%
2012	12,797	-0.87%
2013	13,032	1.84%
2014	12,907	-0.96%
2015	13,653	5.78%
2016	13,536	-0.86%
2017	13,843	2.27%
2018	13,965	0.88%
2019	14,306	2.44%
2020	12,649	-11.58%
2021	14,154	11.90%
2022	13,926	-1.61%
2023	14,205	2.00%
2024	14,018	-1.32%

20 Year CAGR:	-0.02%	10 Year CAGR:	0.83%
20 Year EXP:	0.04%	10 Year EXP:	0.55%
20-Average:	0.01%	10-Average:	0.69%



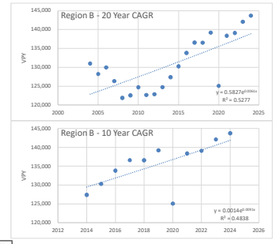
Town	Bartlett	Jackson	Jefferson	Northumberland
Station	02029001	02231001	02235001	02347001
2004	2,600	3,491	4,626	3,344
2005	2,393	3,684	4,614	3,271
2006	2,500	3,500	4,637	3,377
2007	2,400	3,673	4,600	3,320
2008	2,546	3,494	4,361	3,036
2009	2,691	3,682	4,467	3,015
2010	3,100	3,700	4,326	2,979
2011	2,438	3,381	4,300	2,790
2012	2,491	3,216	4,322	2,768
2013	2,643	3,358	4,272	2,759
2014	2,943	3,273	3,842	2,849
2015	2,874	3,460	4,419	2,900
2016	2,754	3,310	4,520	2,952
2017	2,773	3,472	4,585	3,013
2018	2,776	3,516	4,617	3,056
2019	2,848	3,636	4,781	3,041
2020	2,419	3,217	4,115	2,898
2021	2,794	3,625	4,657	3,078
2022	2,719	3,513	4,701	2,993
2023	2,713	3,464	5,009	3,019
2024	2,668	3,474	4,898	2,978



Region B

Year	VPY	Annual Change
2004	131,019	
2005	128,234	-2.13%
2006	129,966	1.35%
2007	126,348	-2.78%
2008	121,909	-3.51%
2009	122,567	0.54%
2010	124,720	1.76%
2011	122,682	-1.63%
2012	122,867	0.15%
2013	124,756	1.54%
2014	127,382	2.10%
2015	130,271	2.27%
2016	133,810	2.72%
2017	136,559	2.05%
2018	136,543	-0.01%
2019	139,186	1.94%
2020	125,069	-10.14%
2021	138,361	10.63%
2022	139,083	0.52%
2023	142,064	2.14%
2024	143,694	1.15%

20 Year CAGR:	0.46%	10 Year CAGR:	1.21%
20 Year EXP:	0.61%	10 Year EXP:	0.91%
20-Average:	0.54%	10-Average:	1.06%

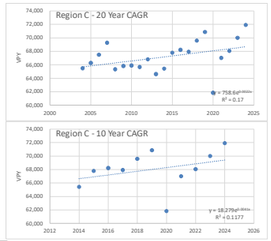


Town	Alton	Alton	Belmont	Gilford		Lincoln	Littleton	Meredith	Northfield	Ossipee	Plymouth	Tamworth
Station	02011001	62493054	22039022	02169053		02259090	02265092	02295022	02451001	02357021	02067002	02443001
2004	5,626	7,200	19,224		9,419	8,300	5,810	12,388	28,331	12,033	17,607	5,081
2005	6,000	6,600	17,744		9,100	7,500	5,900	12,406	28,073	11,833	18,000	5,078
2006	5,456	7,003	19,000		9,133	7,909	5,948	13,000	27,636	11,853	17,846	5,182
2007	5,628	7,085	16,647		8,796	7,900	5,943	12,451	27,795	11,000	18,003	5,100
2008	5,386	6,733	16,445		8,368	8,007	5,603	11,636	26,448	11,227	16,988	5,068
2009	5,063	6,800	16,539		8,400	8,296	5,900	11,169	27,280	11,127	17,221	4,772
2010	5,404	7,078	17,285		8,436	8,498	6,000	11,632	26,441	11,417	17,591	4,938
2011	5,183	6,837	16,586		8,221	8,322	5,800	11,586	27,159	11,272	16,920	4,796
2012	5,160	6,811	16,811		8,201	8,298	5,961	11,595	27,152	11,277	16,810	4,791
2013	5,338	6,794	17,160		8,528	8,522	6,370	11,678	27,326	11,303	16,960	4,777
2014	5,472	6,956	17,633		9,125	8,587	6,000	11,658	27,867	11,428	17,747	4,909
2015	5,592	7,024	17,737		9,275	8,171	6,329	12,020	28,857	11,772	18,482	5,012
2016	5,802	7,212	18,200		8,927	9,432	6,494	11,976	29,793	11,984	18,882	5,108
2017	5,782	7,244	18,142		8,975	9,847	6,663	12,499	30,432	12,276	19,553	5,146
2018	5,775	7,334	17,715		9,159	9,888	6,695	12,480	30,537	12,178	19,795	4,987
2019	5,942	7,490	17,663		9,783	10,233	6,910	12,638	30,744	12,434	20,187	5,162
2020	5,650	6,668	16,172		8,657	9,158	5,348	11,415	27,521	11,265	18,588	4,627
2021	6,225	7,706	17,510		9,404	10,263	6,081	12,776	30,493	12,504	20,311	5,088
2022	6,245	7,942	17,426		9,365	10,271	6,570	12,632	30,485	12,679	20,450	5,018
2023	6,310	7,949	17,584		9,349	10,582	7,166	12,997	30,962	12,869	21,024	5,272
2024	6,283	8,057	17,551		9,379	10,967	7,412	12,686	31,408	13,207	21,544	5,200

Region C

Year	VPY	Annual Change
2004	65,484	
2005	66,267	1.20%
2006	67,492	1.85%
2007	69,270	2.63%
2008	65,341	-5.67%
2009	65,819	0.73%
2010	65,900	0.12%
2011	65,667	-0.35%
2012	66,807	1.74%
2013	64,614	-3.28%
2014	65,433	1.27%
2015	67,796	3.61%
2016	68,222	0.63%
2017	67,938	-0.42%
2018	69,584	2.42%
2019	70,859	1.83%
2020	61,846	-12.72%
2021	67,012	8.35%
2022	68,062	1.57%
2023	70,004	2.85%
2024	71,912	2.73%

20 Year CAGR:	0.47%	10 Year CAGR:	0.95%
20 Year EXP:	0.22%	10 Year EXP:	0.41%
20-Average:	0.35%	10-Average:	0.68%

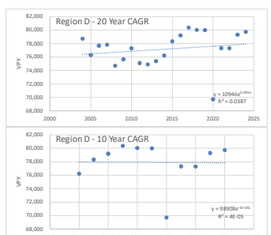


Town	Lebanon	Lebanon	Lyme	Rumney
Station	02253025	02253090	02277021	02395021
2004	18,183	38,478	2,074	6,749
2005	19,576	38,000	1,997	6,694
2006	21,000	38,000	1,868	6,624
2007	22,000	39,000	1,979	6,291
2008	19,799	37,642	1,900	6,000
2009	19,735	38,234	1,750	6,100
2010	19,873	38,000	1,759	6,268
2011	19,474	38,500	1,785	5,908
2012	19,856	39,000	1,817	6,134
2013	19,112	38,048	1,814	5,640
2014	19,096	38,726	1,740	5,871
2015	19,146	40,866	1,758	6,026
2016	19,358	40,979	1,793	6,092
2017	19,256	40,700	1,752	6,230
2018	19,552	42,009	1,709	6,314
2019	20,106	42,639	1,748	6,366
2020	15,077	39,228	1,577	5,964
2021	16,773	42,170	1,618	6,451
2022	17,327	42,634	1,615	6,486
2023	17,938	43,487	1,862	6,717
2024	18,558	44,601	2,023	6,731

Region D

Year	VPY	Annual Change
2004	78,724	
2005	76,288	-3.09%
2006	77,671	1.81%
2007	77,815	0.19%
2008	74,707	-3.99%
2009	75,658	1.27%
2010	77,290	2.16%
2011	75,104	-2.83%
2012	74,894	-0.28%
2013	75,380	0.65%
2014	76,223	1.12%
2015	78,315	2.74%
2016	79,197	1.13%
2017	80,352	1.46%
2018	80,020	-0.41%
2019	79,989	-0.04%
2020	69,728	-12.83%
2021	77,308	10.87%
2022	77,293	-0.02%
2023	79,301	2.60%
2024	79,729	0.54%

20 Year CAGR:	0.06%	10 Year CAGR:	0.45%
20 Year EXP:	0.10%	10 Year EXP:	-0.01%
20-Average:	0.08%	10-Average:	0.22%

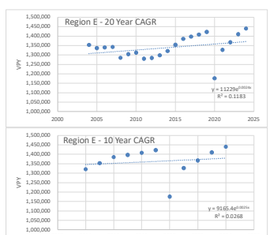


Town	Chesterfield	Claremont	Henniker	Hillsborough		Marlborou	Newport	Rindge	Warner	Wilton
Station	02087021	02091001	62463050	02217001		02287001	02339001	62387052	02439005	02445001
2004	12,210	9,206	3,134		5,804	9,786	3,948	8,698	17,826	8,112
2005	12,000	9,100	3,200		5,704	9,469	3,976	8,100	17,139	7,600
2006	12,047	9,466	3,166		5,773	9,652	3,973	8,247	17,376	7,971
2007	12,019	9,306	3,179		5,830	9,355	3,944	8,158	18,000	8,024
2008	11,500	9,078	2,953		5,539	9,199	3,808	8,018	16,937	7,675
2009	11,956	8,969	3,242		5,700	9,229	3,880	8,053	17,000	7,629
2010	11,880	9,210	3,180		6,085	9,432	3,927	8,090	17,911	7,575
2011	11,499	8,997	2,944		5,759	9,234	3,778	7,979	17,691	7,223
2012	11,527	8,959	2,999		5,801	9,099	3,751	7,859	17,691	7,208
2013	11,824	8,896	3,046		5,898	9,066	3,718	7,907	17,796	7,229
2014	12,075	8,639	3,159		5,954	9,256	3,690	7,932	18,165	7,353
2015	12,167	9,208	3,225		6,299	9,487	3,770	8,142	18,628	7,389
2016	12,151	9,480	3,319		6,560	9,739	3,788	8,114	18,560	7,486
2017	12,326	9,297	3,387		6,742	9,824	3,823	8,155	19,299	7,499
2018	12,068	9,317	3,380		6,614	9,669	3,836	8,237	19,481	7,418
2019	11,993	9,379	3,428		6,316	9,701	3,897	8,319	19,418	7,538
2020	9,969	8,468	3,529		5,520	8,339	3,512	7,221	16,855	6,315
2021	11,167	9,229	3,884		6,678	9,203	3,703	8,023	18,473	6,948
2022	11,201	9,157	3,984		6,761	9,269	3,677	8,103	18,296	6,845
2023	11,517	9,277	3,928		7,411	9,335	3,774	8,225	18,912	6,922
2024	11,725	9,299	3,861		7,250	9,240	3,835	8,144	19,496	6,880

Region E

Year	VPY	Annual Change
2004	1,353,263	
2005	1,336,129	-1.27%
2006	1,340,011	0.29%
2007	1,341,995	0.15%
2008	1,285,116	-4.24%
2009	1,303,948	1.47%
2010	1,312,251	0.64%
2011	1,279,824	-2.47%
2012	1,284,314	0.35%
2013	1,298,171	1.08%
2014	1,320,862	1.75%
2015	1,353,486	2.47%
2016	1,385,361	2.36%
2017	1,396,932	0.84%
2018	1,408,237	0.81%
2019	1,422,176	0.99%
2020	1,176,424	-17.28%
2021	1,326,889	12.79%
2022	1,367,310	3.05%
2023	1,409,876	3.11%
2024	1,439,862	2.13%

20 Year CAGR:	0.31%	10 Year CAGR:	0.87%
20 Year EXP:	0.24%	10 Year EXP:	0.25%
20-Average:	0.27%	10-Average:	0.56%



*Not in 2023 count *Not in 2023 count

Town	Amherst	Barrington	Bedford	Bow		Candia	Chichester	Chichester	Concord	Concord	Concord	Concord	Concord	Derry	Dover	Dover	Durham	Exeter	Hampton	Hampton Falls	Hooksett	Hooksett	Hopkinton	Hudson	Hudson	Merrimack	Nashua	Newington	North Hampton	Nottingham	Rochester	Salem	Seabrook	Seabrook	Windham
Station	02330001	02255001	02037090	02051003		02071090	02089002	02089002	02095092	02095092	02099103	02099103	02099056	72099278	02489002	02125001	02125090	02153001	02197090	02197076	02225091	02285092	02227001	02229022	02231051	02297001	62315281	02331001	02345001	02349001	02389090	02399090	02197002	02409003	02489001
2004	34,000	14,568	48,883		8,464	35,570	13,895	17,717	45,135	74,294	41,050	17,253	13,173	76,000	12,912	39,727	18,170	38,143	62,936	20,000	68,697	58,687	36,052	39,206	37,000	13,809	117,824	70,866	17,379	9,200	24,683	116,000	10,037	89,424	12,509
2005	32,000	13,000	51,068		8,670	36,000	14,000	17,605	43,000	72,000	41,000	16,311	13,188	73,658	13,275	39,414	17,551	39,274	65,610	20,000	69,630	58,077	35,000	40,678	35,005	13,000	119,332	71,000	15,869	9,202	25,528	108,000	8,900	88,000	12,284
2006	32,171	13,775	51,391		8,650	36,947	13,975	17,775	44,278	74,000	40,709	17,017	13,021	71,712	13,637	38,890	17,492	40,000	64,477	20,261	69,024	58,353	36,366	41,702	35,606	13,519	117,000	69,945	16,525	9,363	24,668	109,688	9,036	87,038	12,000
2007	31,846	13,577	51,757		8,658	37,436	13,800	17,000	44,577	73,442	41,000	16,905	12,559	72,306	14,000	39,009	17,342	41,000	64,988	20,111	69,209	59,500	35,000	41,597	35,000	13,306	118,919	69,614	16,527	9,247	25,323	108,516	9,239	88,453	11,232
2008	30,990	13,113	48,897		8,679	35,372	13,269	16,776	42,376	70,930	39,000	16,133	11,000	69,304	13,393	36,174	16,535	39,000	60,791	20,468	65,756	57,648	35,143	40,822	34,909	12,558	114,461	68,000	16,764	8,838	23,320	102,000	8,711	82,423	11,563
2009	31,000	13,372	47,348		8,727	36,780	13,263	17,251	43,000	72,000	39,000	16,054	10,573	70,712	13,500	35,687	16,830	40,000	61,166	21,000	66,502	58,000	36,000	41,084	34,396	13,000	117,000	68,000	16,953	9,100	22,776	106,542	8,900	87,000	11,932
2010	30,889	13,686	48,377		8,696	37,433	13,678	17,325	44,153	72,644	38,371	16,371	10,146	70,864	13,567	36,127	16,682	39,804	61,950	21,313	68,103	59,000	36,000	42,255	35,000	12,455	120,000	67,491	16,970	9,458	22,348	105,293	8,211	85,591	12,000
2011	30,130	13,437	48,063		8,471	36,990	13,307	16,792	43,127	71,180	37,664	16,026	9,701	67,614	13,024	35,623	16,000	39,375	60,860	20,000	67,133	57,000	36,405	42,183	34,000	12,378	114,349	66,177	17,000	9,056	22,409	100,000	8,485	84,865	11,000
2012	29,968	13,507	47,622		8,498	36,818	13,137	16,509	42,501	70,046	37,388	16,095	9,974	68,906	12,639	36,018	16,152	40,319	61,139	20,667	66,344	60,898	35,873	42,215	33,244	12,670	116,405	66,537	16,434	9,077	22,923	103,891	8,594	85,328	10,978
2013	29,902	13,838	43,150		8,515	36,628	13,180	16,695	42,963	71,142	37,746	16,118	11,005	70,488	12,461	36,930	15,989	40,555	62,595	20,349	68,144	60,189	36,458	41,664	32,553	12,902	117,735	66,679	16,267	9,021	23,965	106,309	8,574	86,443	11,019
2014	30,111	13,941	45,233		8,579	39,124	13,291	16,721	43,400	72,640	38,153	16,326	11,417	71,948	12,490	37,747	15,969	43,725	63,884	20,373	70,051	63,072	37,545	42,152	32,238	13,307	120,827	66,891	16,172	9,075	25,005	100,925	8,820	88,895	10,815
2015	30,504	14,021	46,598		8,296	40,767	13,412	16,965	44,865	72,977	39,351	16,447	11,859	71,060	12,396	39,097	16,208	43,525	66,160	21,837	73,052	64,968	38,926	43,285	32,439	14,197	124,280	67,673	16,290	9,124	26,512	104,409	8,959	92,380	10,647
2016	31,109	14,456	47,964		8,560	42,411	13,797	16,947	45,993	74,816	39,628	16,587	12,063	72,253	12,219	40,725	16,591	45,161	69,034	20,846	75,870	67,440	39,514	44,573	31,045	14,827	123,875	70,393	16,353	9,360	27,897	106,630	9,377	96,128	10,917
2017	30,988	14,551	48,646		8,713	42,751	13,803	16,741	46,389	77,535	38,198	16,418	11,483	73,698	11,436	41,642	16,450	45,888	69,490	18,964	77,242	68,226	40,088	45,310	31,666	15,284	124,932	70,335	16,356	9,389	28,601	107,320	9,466	97,907	11,026
2018	30,752	14,626	49,466		8,727	43,429	13,784	16,756	47,810	77,246	38,513	16,461	11,469	75,172	10,938	42,315	16,021	46,393	70,410	20,220	77,846	67,299	40,406	46,216	32,299	15,446	125,001	70,054	16,254	9,411	29,168	109,466	9,166	98,783	10,914
2019	31,121	14,690	49,623		8,762	44,064	13,810	16,866	48,697	77,332	38,641	16,791	11,428	76,074	11,100	43,124	15,596	46,686	71,739	20,600	78,558	68,053	40,632	46,771	32,687	15,553	125,544	70,895	16,139	9,438	30,064	110,780	9,164	100,908	10,246
2020	26,266	13,252	38,067		7,598	35,726	12,342	14,519	41,172	63,860	31,773	14,507	10,396	64,206	9,876	36,202	11,885	36,231	56,200	18,847	63,190	58,665	31,394	39,475	27,588	13,234	100,357	59,835	13,985	7,881	26,560	93,498	9,300	80,619	7,918
2021	29,129	13,853	42,679		8,201	40,325	13,621	16,229	45,579	71,279	35,299	15,923	11,175	71,204	10,410	40,460	14,711	41,152	67,785	20,354	72,035	65,450	37,216	43,778	31,551	14,598	110,055	66,357	15,079	8,883	29,467	109,291	9,776	95,378	8,647
2022	29,682	14,253	44,288		8,628	40,585	13,606	16,321	45,903	73,532	35,759	15,893	11,096	80,514	10,373	41,165	15,532	41,161	70,625	20,578	74,563	67,037	38,456	44,610	32,150	14,946	114,282	67,618	15,098	9,156	29,796	113,331	9,293	98,777	8,703
2023	30,365	14,116	45,907		8,582	42,223	13,723	16,681	47,197	75,055	36,711	16,150	10,952	83,612	11,319	42,315	16,677	42,836	72,024	21,187	78,659	67,475	40,350	45,636	32,889	15,036	118,864	69,173	15,436	9,418	30,697	116,980	9,402	103,563	8,666
2024	28,338	13,834	47,165		8,799	43,229	13,151	16,526	48,059	76,508	37,050	16,040	11,065	86,477	11,222	43,870	16,645	44,254	74,555	21,084	80,657	71,080	41,009	44,543	27,884	15,116	116,856	92,809	15,628	8,969	31,953	113,842	9,277	103,738	8,630

TRIP GENERATION DATA

Institute of Transportation Engineers (ITE)
Trip Generation, 12th Edition
Land Use Code (LUC) 311 - All Suites Hotel

Average Vehicle Trips Ends vs: Rooms
Independent Variable (X): 94

AVERAGE WEEKDAY DAILY

T = 5.16 * (X) -112.23
T = 5.16 * 94 -112.23
T = 372.81
T = 372 vehicle trips
with 50% (186 vpd) entering and 50% (186 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.33* (X) -9.86
T = 0.33 * 94 -9.86
T = 21.16
T = 21.00 vehicle trips
with 51% (11 vpd) entering and 49% (10 vpd) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.36 * (X) -3.7
T = 0.36 * 94 -3.70
T = 30.14
T = 30.00 vehicle trips
with 51% (15 vpd) entering and 49% (15 vpd) exiting.

SATURDAY DAILY (Not provided - uses average rate ratio of LUC 310 Daily to PM Peak)

LUC 310 Room Saturday	6.92	LUC 311 Room Saturday	X
LUC 310 Room PM Peak	0.47	LUC 311 Room PM Peak	0.34

X = 5.01

T = 5.01 * (X)
T = 5.01 * 94.000
T = 470.94
T = 470 vehicle trips
with 50% (235 vph) entering and 50% (235 vph) exiting.

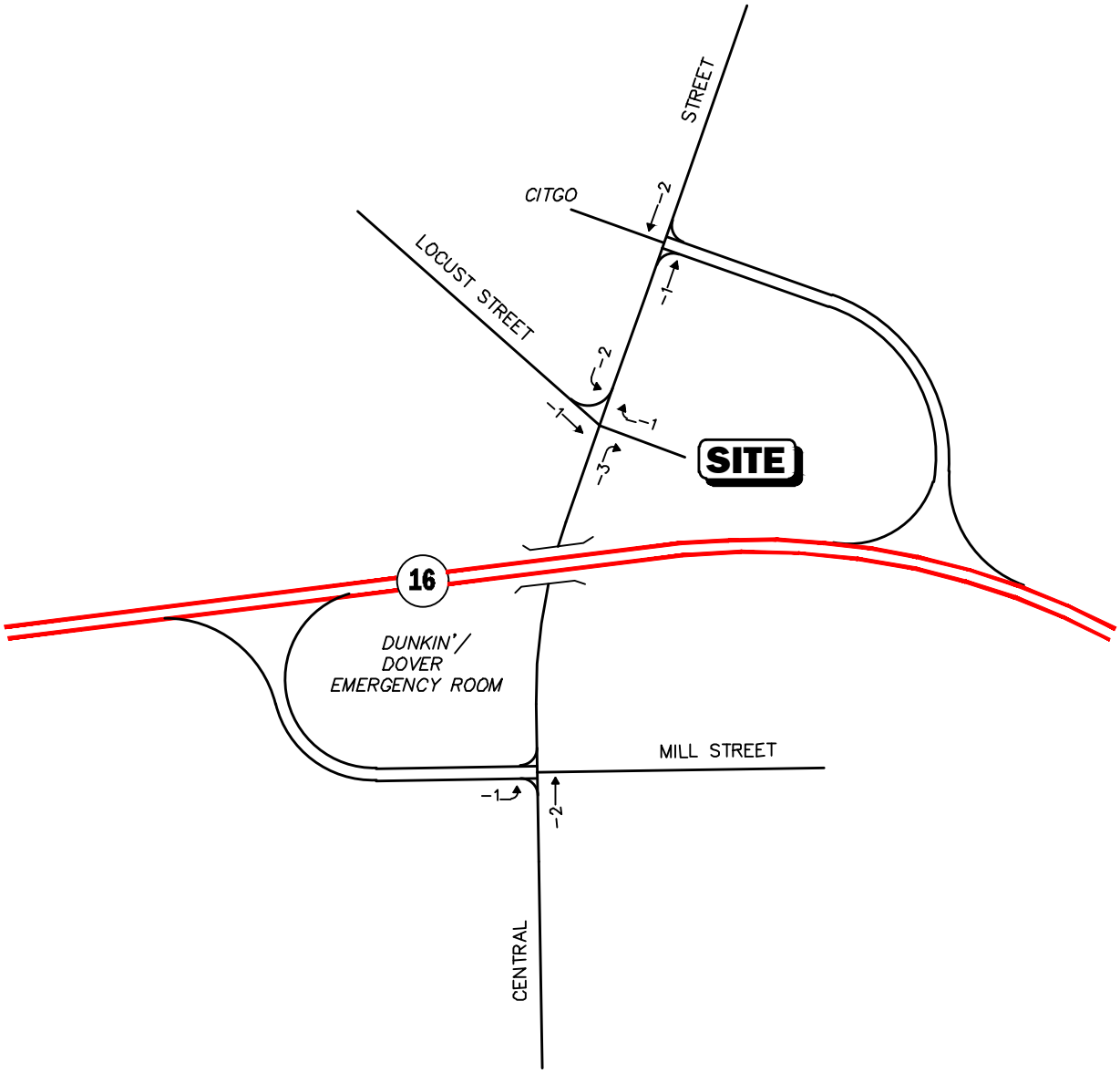
SATURDAY MIDDAY PEAK HOUR OF GENERATOR (Not provided - uses average rate ratio of LUC 310 Saturday Peak to PM Peak)

LUC 310 Room Saturday Peak	0.47	LUC 311 Room Saturday Peak	X
LUC 310 Room PM Peak	0.47	LUC 311 Room PM Peak	0.34

X = 0.34

T = 0.34 * (X)
T = 0.34 * 94.000
T = 31.96
T = 32 vehicle trips
with 50% (16 vph) entering and 50% (16 vph) exiting.

REMOVED EXISTING TRIPS NETWORKS



Not To Scale

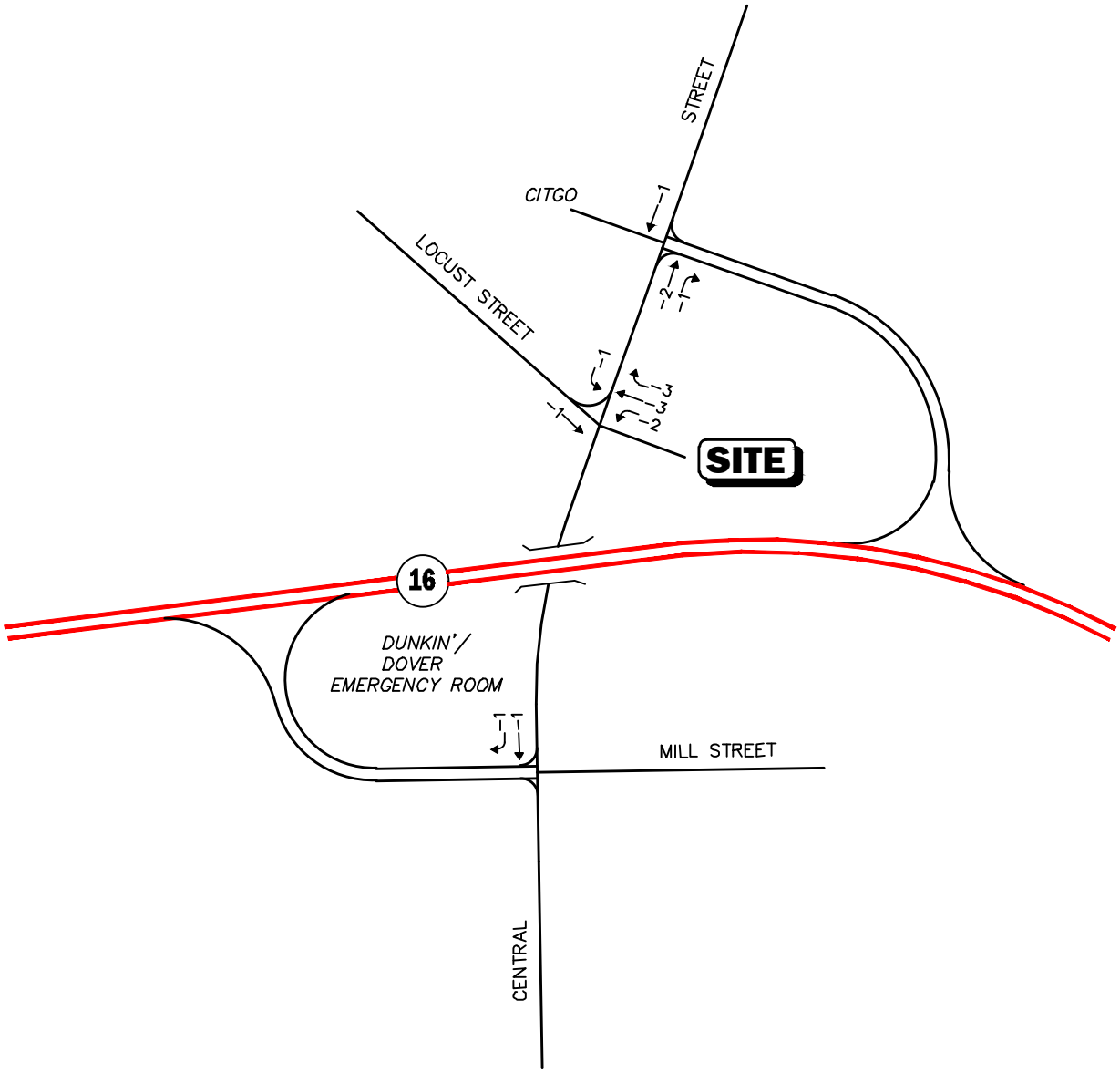
Figure A-1

Removed Existing Trips
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc

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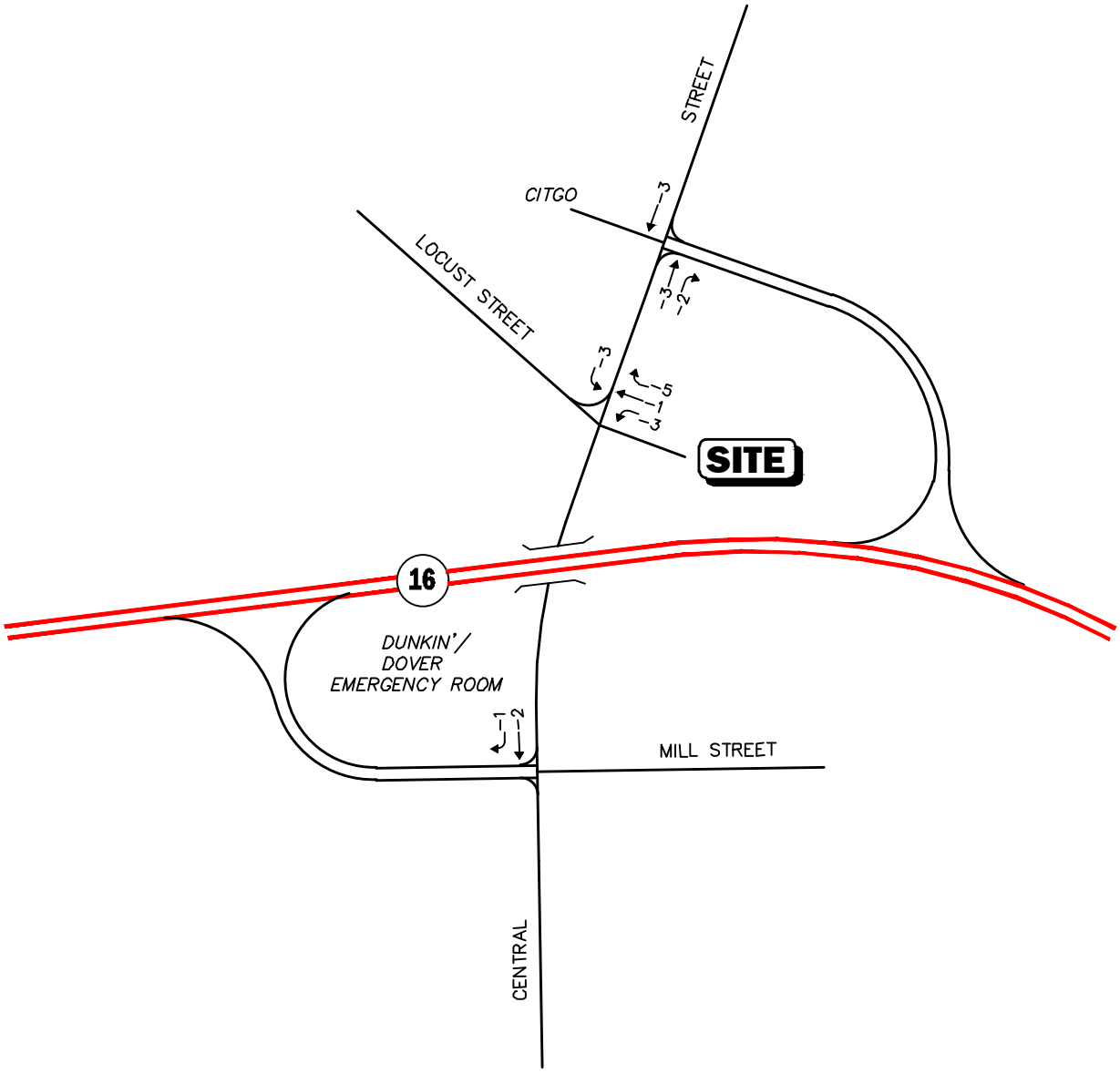
Figure A-2

Removed Existing Trips
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

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Not To Scale

Figure A-3

Removed Existing Trips
Saturday Midday
Peak-Hour Traffic Volumes

Vanasse & Associates inc

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Graph Look Up

Graph Look Up
How to Use ITETripGen
TGM Desk Reference
TGM Appendices
Support Documents
Add Users
Comments

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 934

LAND USE GROUP: (900-999) Services

LAND USE : 934 - Fast-Food Restaurant with Drive

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

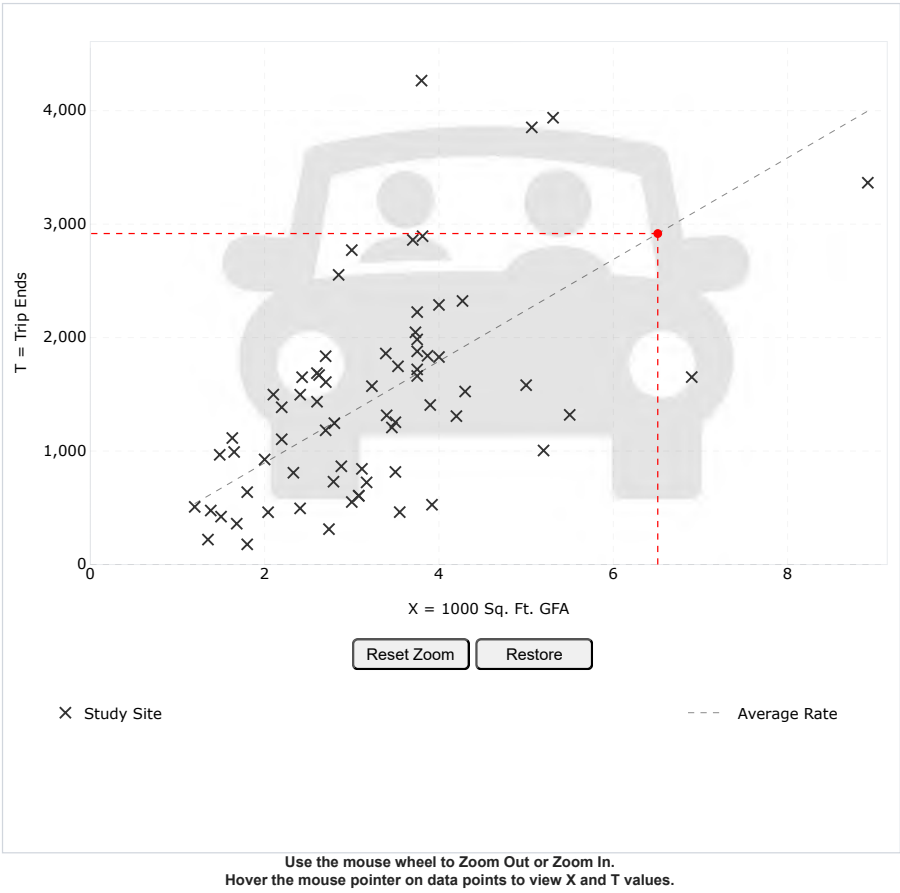
INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD: Weekday

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 6.51 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Fast-Food Restaurant with Drive-Through Window (934) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
68

Avg. 1000 Sq. Ft. GFA:
3

Average Rate:
448.12

Range of Rates:
98.89 - 1122.37

Standard Deviation:
217.66

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 2917 (Total), 1459 (Entry), 1458 (Exit)

Add-ons to do more
Try OTISS Pro

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Graph Look Up

ITETripGen Web-based App

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- How to Use *ITETripGen*
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Add-ons to do more

Try OTISS Pro

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 934

LAND USE GROUP: (900-999) Services

LAND USE : 934 - Fast-Food Restaurant with Drive

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

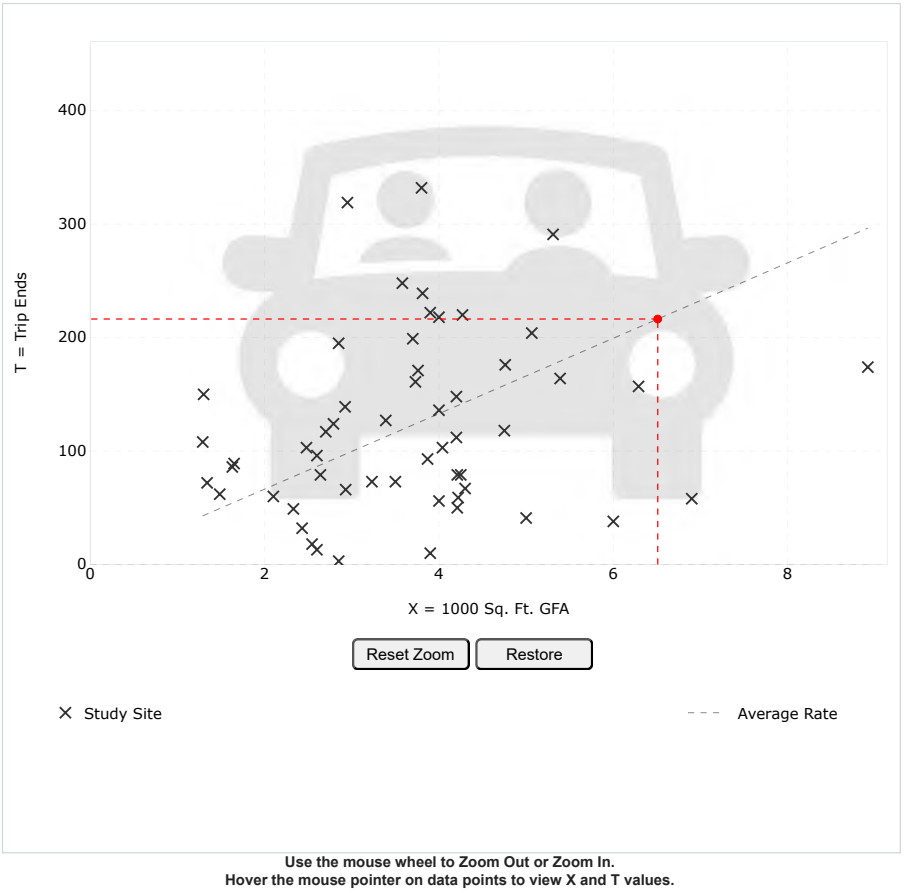
INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD: Weekday, Peak Hour of Adjacent Stre

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 6.51 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Fast-Food Restaurant with Drive-Through Window (934) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
55

Avg. 1000 Sq. Ft. GFA:
4

Average Rate:
33.24

Range of Rates:
1.05 - 115.38

Standard Deviation:
22.70

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
51% entering, 49% exiting

Calculated Trip Ends:
Average Rate: 216 (Total), 110 (Entry), 106 (Exit)

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Comments

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 934

LAND USE GROUP: (900-999) Services

LAND USE : 934 - Fast-Food Restaurant with Drive

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

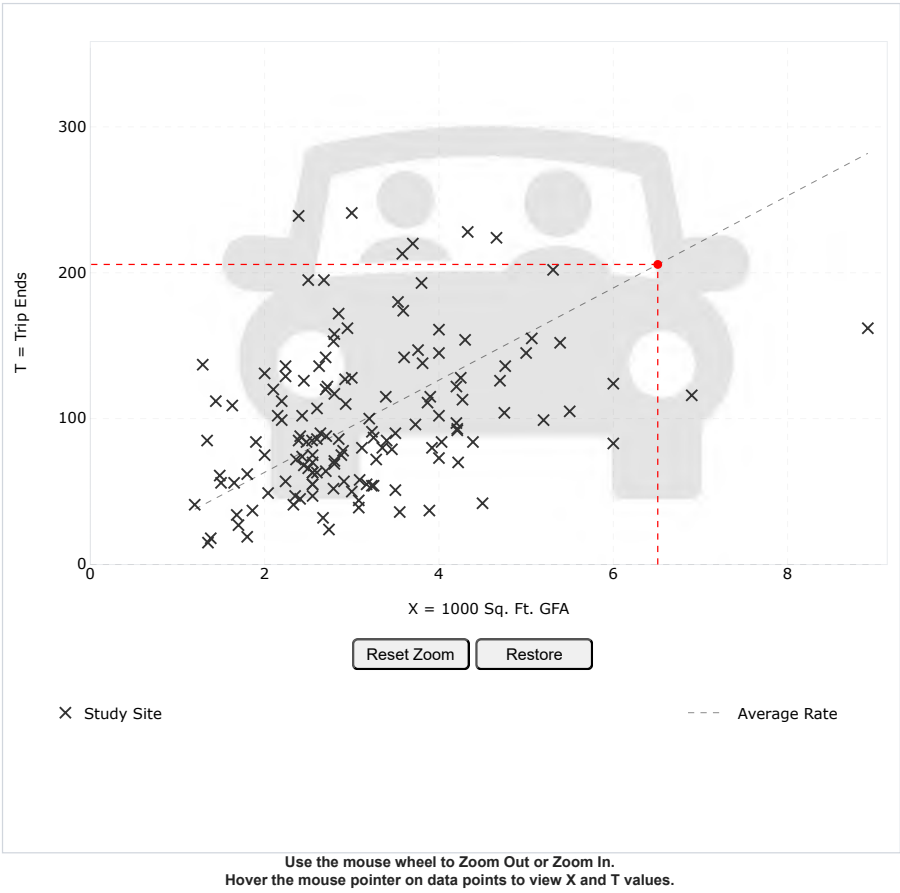
INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD: Weekday, Peak Hour of Adjacent Stre

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 6.51 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Fast-Food Restaurant with Drive-Through Window (934) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
139

Avg. 1000 Sq. Ft. GFA:
3

Average Rate:
31.60

Range of Rates:
8.77 - 106.20

Standard Deviation:
16.21

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
52% entering, 48% exiting

Calculated Trip Ends:
Average Rate: 206 (Total), 107 (Entry), 99 (Exit)

Add-ons to do more
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Add-ons to do more

Try OTISS Pro

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 934

LAND USE GROUP: (900-999) Services

LAND USE : 934 - Fast-Food Restaurant with Drive

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

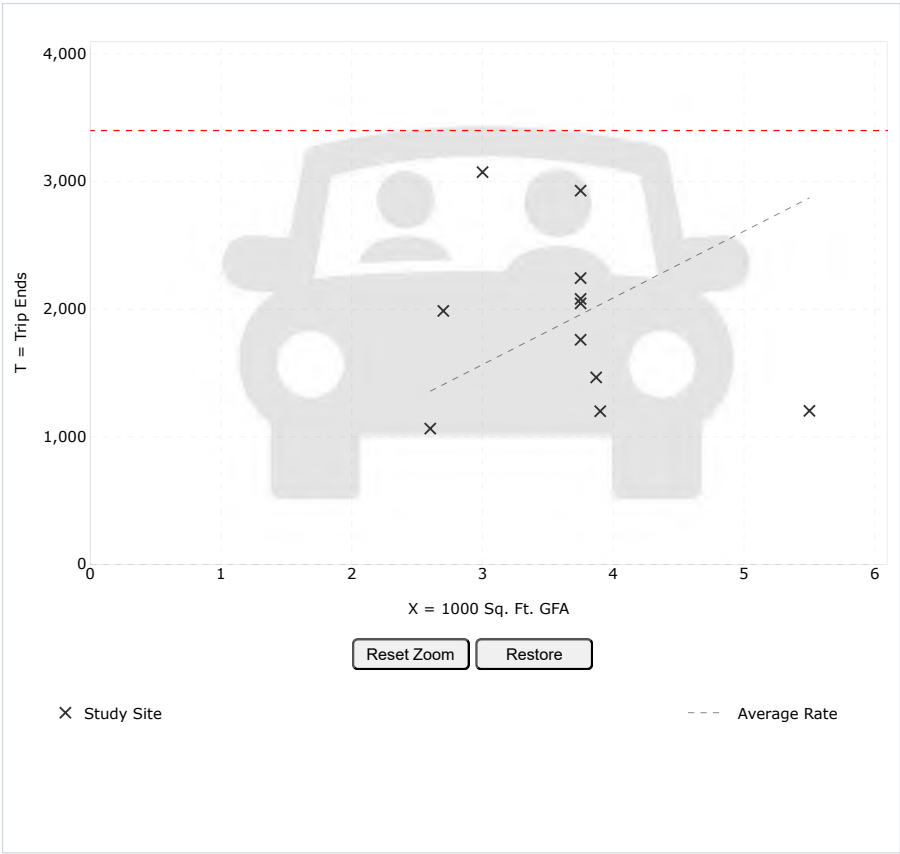
INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD: Saturday

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 6.51 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Fast-Food Restaurant with Drive-Through Window (934) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Saturday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
11

Avg. 1000 Sq. Ft. GFA:
4

Average Rate:
522.28

Range of Rates:
218.91 - 1024.67

Standard Deviation:
231.69

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 3400 (Total), 1700 (Entry), 1700 (Exit)

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- Add Users
- Comments

Add-ons to do more

Try OTISS Pro

Query | Filter

DATA SOURCE: Trip Generation Manual, 12th Ed

SEARCH BY LAND USE CODE: 934

LAND USE GROUP: (900-999) Services

LAND USE : 934 - Fast-Food Restaurant with Drive

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

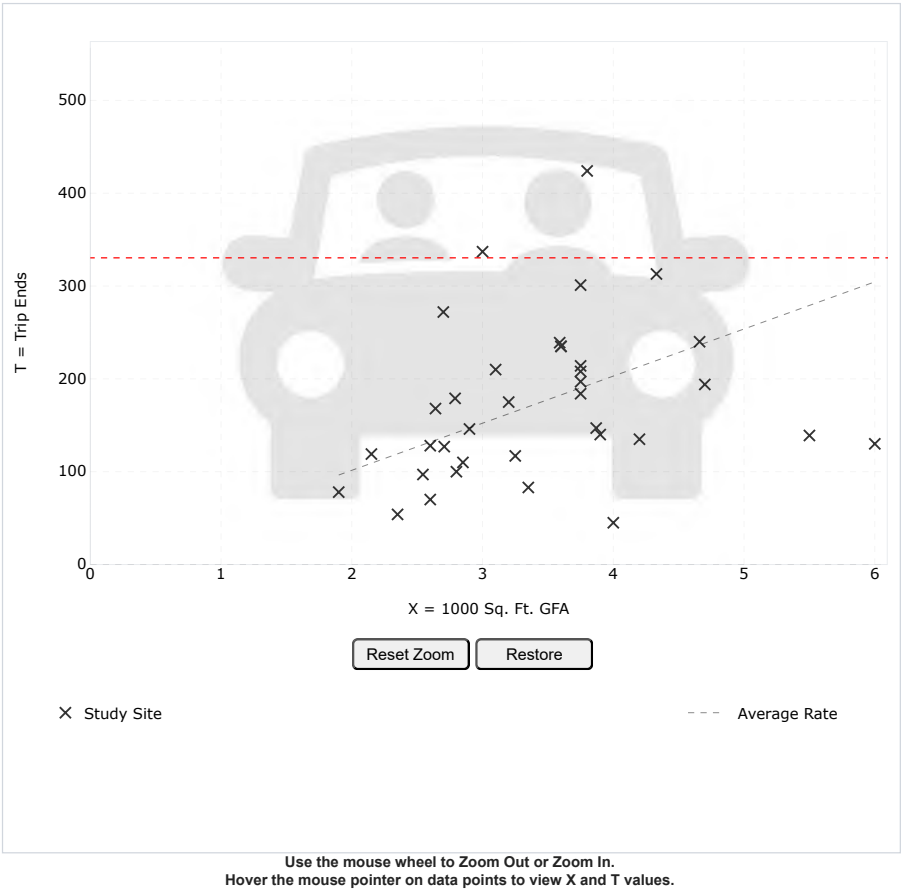
INDEPENDENT VARIABLE (IV): 1000 Sq. Ft. GFA

TIME PERIOD: Saturday, Peak Hour of Generator

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 6.51 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Fast-Food Restaurant with Drive-Through Window (934) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Saturday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
36

Avg. 1000 Sq. Ft. GFA:
3

Average Rate:
50.75

Range of Rates:
11.25 - 112.33

Standard Deviation:
23.80

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
51% entering, 49% exiting

Calculated Trip Ends:
Average Rate: 330 (Total), 168 (Entry), 162 (Exit)

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CAPACITY ANALYSIS

2025 Existing Weekday Morning Peak Hour
2025 Existing Weekday Evening Peak Hour
2025 Existing Saturday Midday Peak Hour
2026 Opening Year No-Build Weekday Morning Peak Hour
2026 Opening Year No-Build Weekday Evening Peak Hour
2026 Opening Year No-Build Saturday Midday Peak Hour
2026 Opening Year Build Weekday Morning Peak Hour
2026 Opening Year Build Weekday Evening Peak Hour
2026 Opening Year Build Saturday Midday Peak Hour
2036 Design Year No-Build Weekday Morning Peak Hour
2036 Design Year No-Build Weekday Evening Peak Hour
2036 Design Year No-Build Saturday Midday Peak Hour
2036 Design Year Build Weekday Morning Peak Hour
2036 Design Year Build Weekday Evening Peak Hour
2036 Design Year Build Saturday Midday Peak Hour

2025 Existing Weekday Morning Peak Hour

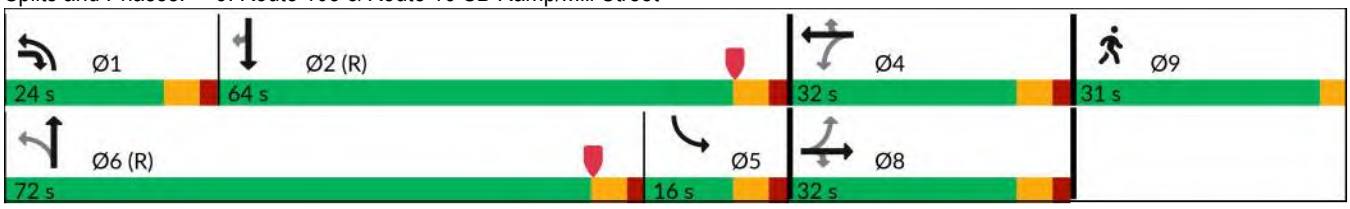
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	10	371	11	21	7	67	821	7	5	529	277
Future Volume (vph)	190	10	371	11	21	7	67	821	7	5	529	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98	1.00					0.98
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.955			0.983		0.950			0.950		
Satd. Flow (prot)	0	1754	1561	0	1727	1544	1752	1843	0	1736	3473	1554
Flt Permitted		0.706			0.869		0.358			0.950		
Satd. Flow (perm)	0	1294	1561	0	1526	1509	660	1843	0	1736	3473	1519
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			493			130						292
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1	2					2
Peak Hour Factor	0.70	0.70	0.70	0.77	0.77	0.77	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	271	14	530	14	27	9	78	955	8	5	557	292
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	285	530	0	41	9	78	963	0	5	557	292
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.4	55.9		41.4	41.4	92.8	92.8		8.2	80.1	80.1
Actuated g/C Ratio		0.27	0.37		0.27	0.27	0.61	0.61		0.05	0.53	0.53
v/c Ratio		0.81	0.60		0.10	0.02	0.16	0.85		0.05	0.30	0.31
Control Delay (s/veh)		68.8	6.1		44.0	0.0	15.3	33.1		68.6	21.9	3.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		68.8	6.1		44.0	0.0	15.3	33.1		68.6	21.9	3.5
LOS		E	A		D	A	B	C		E	C	A
Approach Delay (s/veh)		28.0			36.1			31.8			15.9	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 25.8		Intersection LOS: C	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	285	530	41	9	78	963	5	557	292
v/c Ratio	0.81	0.60	0.10	0.02	0.16	0.85	0.05	0.30	0.31
Control Delay (s/veh)	68.8	6.1	44.0	0.0	15.3	33.1	68.6	21.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.8	6.1	44.0	0.0	15.3	33.1	68.6	21.9	3.5
Queue Length 50th (ft)	256	23	30	0	26	645	5	147	0
Queue Length 95th (ft)	#333	4	59	0	74	#1281	20	257	59
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	354	949	417	507	550	1132	137	1841	942
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.56	0.10	0.02	0.14	0.85	0.04	0.30	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	10	371	11	21	7	67	821	7	5	529	277
Future Volume (vph)	190	10	371	11	21	7	67	821	7	5	529	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750	1561		1727	1511	1752	1842		1736	3473	1520
Flt Permitted		0.71	1.00		0.87	1.00	0.36	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1295	1561		1526	1511	660	1842		1736	3473	1520
Peak-hour factor, PHF	0.70	0.70	0.70	0.77	0.77	0.77	0.86	0.86	0.86	0.95	0.95	0.95
Adj. Flow (vph)	271	14	530	14	27	9	78	955	8	5	557	292
RTOR Reduction (vph)	0	0	321	0	0	7	0	0	0	0	0	142
Lane Group Flow (vph)	0	285	209	0	41	2	78	963	0	5	557	150
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		39.4	48.8		39.4	39.4	83.6	83.6		1.4	75.6	75.6
Effective Green, g (s)		41.4	52.8		41.4	41.4	85.6	85.6		3.4	77.6	77.6
Actuated g/C Ratio		0.27	0.35		0.27	0.27	0.57	0.57		0.02	0.51	0.51
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		355	545		418	414	456	1044		39	1784	781
v/s Ratio Prot			0.03				0.01	c0.52		0.00	c0.16	
v/s Ratio Perm		c0.22	0.11		0.03	0.00	0.08					0.10
v/c Ratio		0.80	0.38		0.10	0.01	0.17	0.92		0.13	0.31	0.19
Uniform Delay, d1		51.0	36.9		40.9	39.8	15.6	29.7		72.3	21.2	19.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		12.3	0.5		0.1	0.0	0.2	14.5		1.5	0.5	0.5
Delay (s)		63.3	37.3		41.0	39.8	15.7	44.2		73.8	21.7	20.3
Level of Service		E	D		D	D	B	D		E	C	C
Approach Delay (s/veh)		46.4			40.8			42.0			21.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

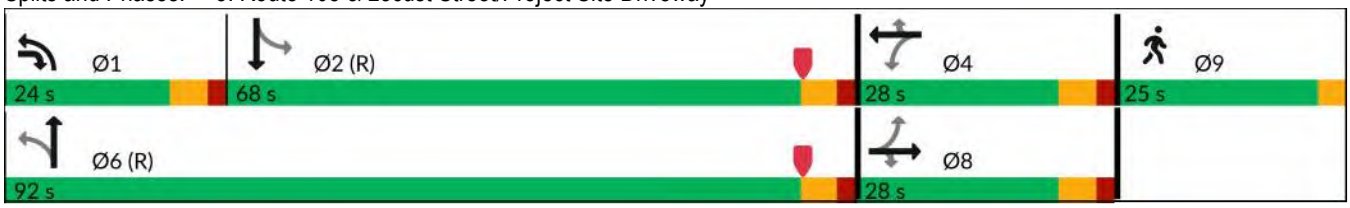
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	207	0	0	1	227	729	3	2	505	46
Future Volume (vph)	14	1	207	0	0	1	227	729	3	2	505	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850		0.999			0.987	
Flt Protected		0.955					0.950			0.950		
Satd. Flow (prot)	0	1644	1463	0	1910	1624	1660	1926	0	1719	1845	0
Flt Permitted		0.738					0.351			0.359		
Satd. Flow (perm)	0	1271	1463	0	1910	1624	613	1926	0	650	1845	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			384					4	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.90	0.90	0.90	0.25	0.25	0.25	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	16	1	230	0	0	4	252	810	3	2	537	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	230	0	0	4	252	813	0	2	586	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.5	25.2			9.0	129.9	132.3		106.0	106.0	
Actuated g/C Ratio		0.07	0.17			0.06	0.90	0.91		0.73	0.73	
v/c Ratio		0.20	0.52			0.01	0.36	0.46		0.00	0.43	
Control Delay (s/veh)		69.3	8.1			0.0	4.3	4.9		13.0	12.6	
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	24.2	
Total Delay (s/veh)		69.3	8.1			0.0	4.3	4.9		13.0	36.8	
LOS		E	A			A	A	A		B	D	
Approach Delay (s/veh)		12.3						4.8			36.7	
Approach LOS		B						A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay (s/veh): 15.6		Intersection LOS: B	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	230	4	252	813	2	586
v/c Ratio	0.20	0.52	0.01	0.36	0.46	0.00	0.43
Control Delay (s/veh)	69.3	8.1	0.0	4.3	4.9	13.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	24.2
Total Delay (s/veh)	69.3	8.1	0.0	4.3	4.9	13.0	36.8
Queue Length 50th (ft)	16	0	0	0	0	0	141
Queue Length 95th (ft)	42	50	0	117	498	6	515
Internal Link Dist (ft)	540				415		133
Turn Bay Length (ft)		275		170		85	
Base Capacity (vph)	210	457	589	704	1758	475	1349
Starvation Cap Reductn	0	0	0	0	90	0	772
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.50	0.01	0.36	0.49	0.00	1.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	207	0	0	1	227	729	3	2	505	46
Future Volume (vph)	14	1	207	0	0	1	227	729	3	2	505	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85			0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00			1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644	1463			1624	1660	1927		1719	1846	
Flt Permitted		0.74	1.00			1.00	0.35	1.00		0.36	1.00	
Satd. Flow (perm)		1271	1463			1624	612	1927		650	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.25	0.25	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	16	1	230	0	0	4	252	810	3	2	537	49
RTOR Reduction (vph)	0	0	189	0	0	4	0	0	0	0	1	0
Lane Group Flow (vph)	0	17	41	0	0	0	252	813	0	2	585	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		3.7	21.7			3.7	121.9	121.9		97.9	97.9	
Effective Green, g (s)		5.7	25.7			5.7	123.9	123.9		99.9	99.9	
Actuated g/C Ratio		0.04	0.18			0.04	0.85	0.85		0.69	0.69	
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		49	259			63	667	1646		447	1271	
v/s Ratio Prot			0.02				0.05	c0.42			0.32	
v/s Ratio Perm		c0.01	0.01			0.00	0.27			0.00		
v/c Ratio		0.35	0.16			0.00	0.38	0.49		0.00	0.46	
Uniform Delay, d1		67.8	50.5			66.9	4.2	2.7		7.0	10.3	
Progression Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.2	0.3			0.0	0.4	1.1		0.0	1.2	
Delay (s)		72.1	50.8			66.9	4.6	3.7		7.1	11.5	
Level of Service		E	D			E	A	A		A	B	
Approach Delay (s/veh)		52.2			66.9			3.9			11.5	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

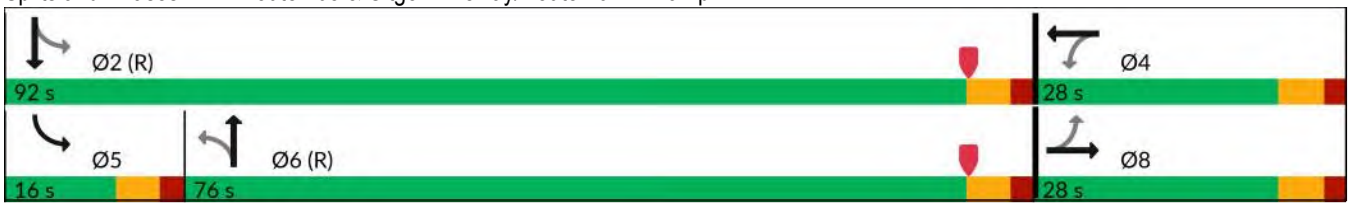


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	86	3	99	1	466	277	121	458	9
Future Volume (vph)	0	0	9	86	3	99	1	466	277	121	458	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.865			0.929			0.950			0.997	
Flt Protected					0.978					0.950		
Satd. Flow (prot)	0	1479	0	0	1743	0	0	1710	0	1719	1866	0
Flt Permitted					0.847					0.294		
Satd. Flow (perm)	0	1479	0	0	1510	0	0	1710	0	532	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		444			42			44			2	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.67	0.67	0.67	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	0	13	96	3	110	1	512	304	133	503	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	0	0	209	0	0	817	0	133	513	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		19.9			19.9			78.0		92.1	92.1	
Actuated g/C Ratio		0.17			0.17			0.65		0.77	0.77	
v/c Ratio		0.02			0.73			0.72		0.26	0.36	
Control Delay (s/veh)		0.1			52.6			19.0		5.3	5.7	
Queue Delay		0.0			0.0			51.2		0.0	0.0	
Total Delay (s/veh)		0.1			52.6			70.3		5.3	5.7	
LOS		A			D			E		A	A	
Approach Delay (s/veh)		0.1			52.6			70.3			5.6	
Approach LOS		A			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 42.8		Intersection LOS: D	
Intersection Capacity Utilization 93.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	13	209	817	133	513
v/c Ratio	0.02	0.73	0.72	0.26	0.36
Control Delay (s/veh)	0.1	52.6	19.0	5.3	5.7
Queue Delay	0.0	0.0	51.2	0.0	0.0
Total Delay (s/veh)	0.1	52.6	70.3	5.3	5.7
Queue Length 50th (ft)	0	123	376	23	112
Queue Length 95th (ft)	0	204	618	44	178
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	651	336	1127	526	1433
Starvation Cap Reductn	0	0	448	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.62	1.20	0.25	0.36

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	86	3	99	1	466	277	121	458	9
Future Volume (vph)	0	0	9	86	3	99	1	466	277	121	458	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.87			0.93			0.95		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1479			1742			1709		1719	1866	
Flt Permitted		1.00			0.85			1.00		0.29	1.00	
Satd. Flow (perm)		1479			1509			1709		533	1866	
Peak-hour factor, PHF	0.67	0.67	0.67	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	13	96	3	110	1	512	304	133	503	10
RTOR Reduction (vph)	0	11	0	0	35	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	174	0	0	802	0	133	513	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		17.9			17.9			76.0		90.1	90.1	
Effective Green, g (s)		19.9			19.9			78.0		92.1	92.1	
Actuated g/C Ratio		0.17			0.17			0.65		0.77	0.77	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		245			250			1110		508	1432	
v/s Ratio Prot		0.00								0.02	c0.27	
v/s Ratio Perm					c0.12			0.47		0.18		
v/c Ratio		0.01			0.70			0.72		0.26	0.36	
Uniform Delay, d1		41.8			47.2			13.9		5.6	4.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			8.1			4.1		0.3	0.7	
Delay (s)		41.8			55.3			17.9		5.9	5.2	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		41.8			55.3			17.9			5.3	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2025 Existing Weekday Evening Peak Hour



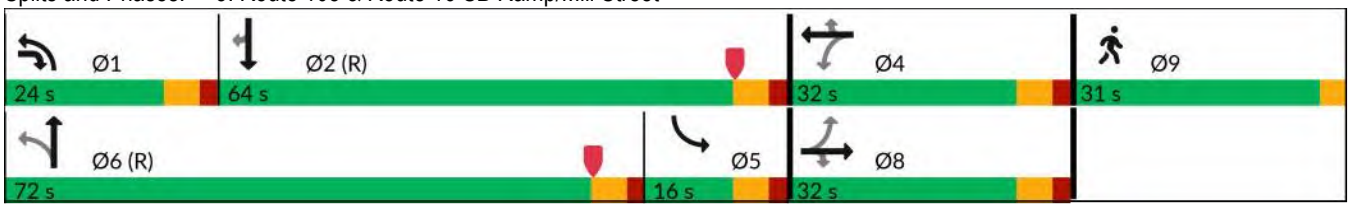
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	5	276	3	3	13	48	777	10	8	663	267
Future Volume (vph)	186	5	276	3	3	13	48	777	10	8	663	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98		1.00		1.00		
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.976		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1766	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.727			0.887		0.304			0.950		
Satd. Flow (perm)	0	1345	1577	0	1605	1555	572	1877	0	1768	3541	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			310			130		1				293
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.89	0.89	0.89	0.85	0.85	0.85	0.84	0.84	0.84	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	209	6	310	4	4	15	57	925	12	9	729	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	310	0	8	15	57	937	0	9	729	293
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.5	43.2		30.5	30.5	103.5	103.5		8.5	92.8	92.8
Actuated g/C Ratio		0.20	0.29		0.20	0.20	0.69	0.69		0.06	0.61	0.61
v/c Ratio		0.79	0.46		0.02	0.04	0.12	0.73		0.09	0.34	0.27
Control Delay (s/veh)		77.4	5.0		47.1	0.2	13.1	22.5		69.0	17.0	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		77.4	5.0		47.1	0.2	13.1	22.5		69.0	17.0	2.9
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		34.7			16.5			22.0			13.4	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 21.1		Intersection LOS: C	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	215	310	8	15	57	937	9	729	293
v/c Ratio	0.79	0.46	0.02	0.04	0.12	0.73	0.09	0.34	0.27
Control Delay (s/veh)	77.4	5.0	47.1	0.2	13.1	22.5	69.0	17.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.4	5.0	47.1	0.2	13.1	22.5	69.0	17.0	2.9
Queue Length 50th (ft)	199	0	6	0	14	459	9	162	0
Queue Length 95th (ft)	#331	45	21	0	56	#1170	29	326	55
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	280	760	333	426	552	1286	140	2176	1086
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.41	0.02	0.04	0.10	0.73	0.06	0.34	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	5	276	3	3	13	48	777	10	8	663	267
Future Volume (vph)	186	5	276	3	3	13	48	777	10	8	663	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765	1577		1765	1555	1787	1877		1771	3541	1584
Flt Permitted		0.73	1.00		0.89	1.00	0.30	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1345	1577		1605	1555	572	1877		1771	3541	1584
Peak-hour factor, PHF	0.89	0.89	0.89	0.85	0.85	0.85	0.84	0.84	0.84	0.91	0.91	0.91
Adj. Flow (vph)	209	6	310	4	4	15	57	925	12	9	729	293
RTOR Reduction (vph)	0	0	228	0	0	12	0	0	0	0	0	117
Lane Group Flow (vph)	0	215	82	0	8	3	57	937	0	9	729	176
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		28.5	35.9		28.5	28.5	94.3	94.3		1.6	88.5	88.5
Effective Green, g (s)		30.5	39.9		30.5	30.5	96.3	96.3		3.6	90.5	90.5
Actuated g/C Ratio		0.20	0.26		0.20	0.20	0.64	0.64		0.02	0.60	0.60
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		271	416		324	314	440	1197		42	2122	949
v/s Ratio Prot			0.01				0.01	c0.50		0.01	c0.21	
v/s Ratio Perm		c0.16	0.04		0.00	0.00	0.07					0.11
v/c Ratio		0.79	0.20		0.02	0.01	0.13	0.78		0.21	0.34	0.19
Uniform Delay, d1		57.3	43.1		48.3	48.2	11.2	19.8		72.3	15.3	13.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.7	0.2		0.0	0.0	0.1	5.1		2.6	0.4	0.4
Delay (s)		71.9	43.3		48.4	48.2	11.3	24.9		74.9	15.7	14.1
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		55.1			48.2			24.1			15.8	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

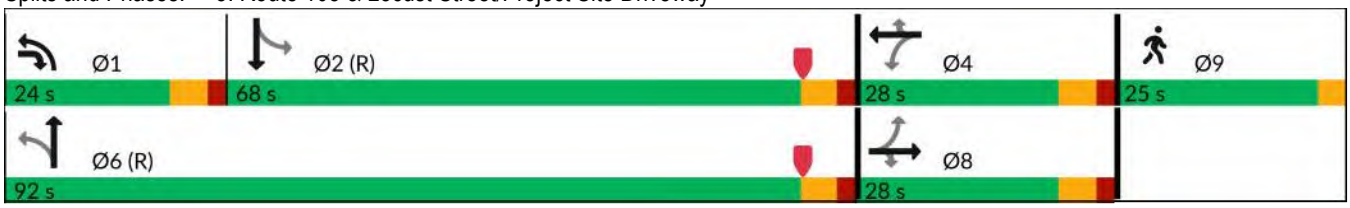
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	284	2	3	3	210	758	0	1	653	106
Future Volume (vph)	36	1	284	2	3	3	210	758	0	1	653	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850					0.979	
Flt Protected		0.954			0.981		0.950			0.950		
Satd. Flow (prot)	0	1692	1507	0	1874	1624	1693	1966	0	1736	1846	0
Flt Permitted		0.722			0.888		0.189			0.370		
Satd. Flow (perm)	0	1280	1507	0	1696	1624	337	1966	0	676	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.94	0.94	0.94	0.40	0.40	0.40	0.97	0.97	0.97	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	38	1	302	5	8	8	216	781	0	1	726	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	302	0	13	8	216	781	0	1	844	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.7	33.6		11.7	11.7	122.6	123.4		97.6	97.6	
Actuated g/C Ratio		0.08	0.23		0.08	0.08	0.85	0.85		0.67	0.67	
v/c Ratio		0.38	0.52		0.10	0.04	0.45	0.47		0.00	0.68	
Control Delay (s/veh)		72.5	6.1		61.4	0.3	6.9	6.3		17.0	22.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.5		0.0	51.2	
Total Delay (s/veh)		72.5	6.1		61.4	0.3	6.9	6.8		17.0	73.2	
LOS		E	A		E	A	A	A		B	E	
Approach Delay (s/veh)		13.7			38.1			6.8			73.1	
Approach LOS		B			D			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 33.6		Intersection LOS: C	
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	302	13	8	216	781	1	844
v/c Ratio	0.38	0.52	0.10	0.04	0.45	0.47	0.00	0.68
Control Delay (s/veh)	72.5	6.1	61.4	0.3	6.9	6.3	17.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	51.2
Total Delay (s/veh)	72.5	6.1	61.4	0.3	6.9	6.8	17.0	73.2
Queue Length 50th (ft)	36	0	12	0	24	123	0	412
Queue Length 95th (ft)	74	48	15	0	110	504	4	#1107
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	211	595	280	343	497	1672	455	1245
Starvation Cap Reductn	0	0	0	0	0	464	0	519
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.51	0.05	0.02	0.43	0.65	0.00	1.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	284	2	3	3	210	758	0	1	653	106
Future Volume (vph)	36	1	284	2	3	3	210	758	0	1	653	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1691	1507		1874	1624	1693	1966		1736	1846	
Flt Permitted		0.72	1.00		0.89	1.00	0.19	1.00		0.37	1.00	
Satd. Flow (perm)		1281	1507		1696	1624	336	1966		676	1846	
Peak-hour factor, PHF	0.94	0.94	0.94	0.40	0.40	0.40	0.97	0.97	0.97	0.90	0.90	0.90
Adj. Flow (vph)	38	1	302	5	8	8	216	781	0	1	726	118
RTOR Reduction (vph)	0	0	236	0	0	7	0	0	0	0	2	0
Lane Group Flow (vph)	0	39	66	0	13	1	216	781	0	1	842	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		8.6	27.6		8.6	8.6	117.0	117.0		92.0	92.0	
Effective Green, g (s)		10.6	31.6		10.6	10.6	119.0	119.0		94.0	94.0	
Actuated g/C Ratio		0.07	0.22		0.07	0.07	0.82	0.82		0.65	0.65	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		93	328		123	118	472	1613		438	1196	
v/s Ratio Prot			0.03				0.07	c0.40			c0.46	
v/s Ratio Perm		c0.03	0.01		0.01	0.00	0.31			0.00		
v/c Ratio		0.42	0.20		0.11	0.00	0.46	0.48		0.00	0.70	
Uniform Delay, d1		64.3	46.4		62.8	62.3	13.4	3.9		9.0	16.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.3		0.4	0.0	0.7	1.0		0.0	3.5	
Delay (s)		67.3	46.7		63.2	62.3	14.1	4.9		9.0	20.0	
Level of Service		E	D		E	E	B	A		A	B	
Approach Delay (s/veh)		49.0			62.8			6.9			20.0	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

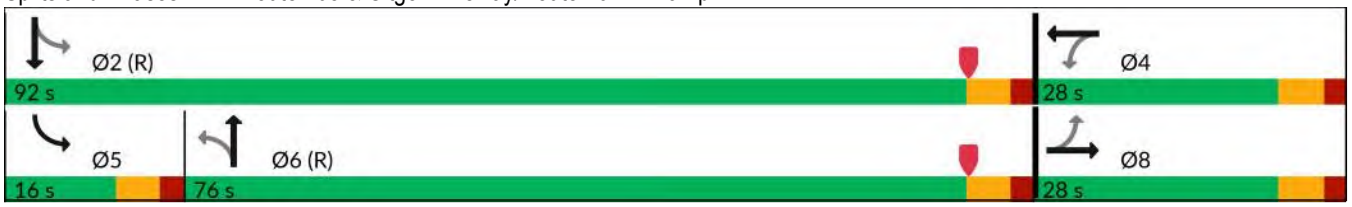


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	185	15	133	1	482	314	170	564	19
Future Volume (vph)	0	2	11	185	15	133	1	482	314	170	564	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		20	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.886			0.946			0.947			0.995	
Flt Protected					0.973					0.950		
Satd. Flow (prot)	0	1515	0	0	1749	0	0	1755	0	1771	1917	0
Flt Permitted					0.813					0.239		
Satd. Flow (perm)	0	1515	0	0	1461	0	0	1755	0	446	1917	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			25			49			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	4	22	234	19	168	1	536	349	189	627	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	421	0	0	886	0	189	648	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		28.4			28.4			68.3		83.6	83.6	
Actuated g/C Ratio		0.24			0.24			0.57		0.70	0.70	
v/c Ratio		0.07			1.16			0.87		0.43	0.48	
Control Delay (s/veh)		18.0			136.5			30.8		8.8	9.3	
Queue Delay		0.0			0.0			50.3		0.0	0.0	
Total Delay (s/veh)		18.0			136.5			81.1		8.8	9.3	
LOS		B			F			F		A	A	
Approach Delay (s/veh)		18.0			136.5			81.1			9.2	
Approach LOS		B			F			F			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay (s/veh): 63.4		Intersection LOS: E	
Intersection Capacity Utilization 111.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	26	421	886	189	648
v/c Ratio	0.07	1.16	0.87	0.43	0.48
Control Delay (s/veh)	18.0	136.5	30.8	8.8	9.3
Queue Delay	0.0	0.0	50.3	0.0	0.0
Total Delay (s/veh)	18.0	136.5	81.1	8.8	9.3
Queue Length 50th (ft)	3	~404	496	40	183
Queue Length 95th (ft)	9	#508	703	61	241
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	374	364	1072	443	1406
Starvation Cap Reductn	0	0	408	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	1.16	1.33	0.43	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	185	15	133	1	482	314	170	564	19
Future Volume (vph)	0	2	11	185	15	133	1	482	314	170	564	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.89			0.95			0.95		1.00	1.00	
Flt Protected		1.00			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1515			1749			1754		1771	1918	
Flt Permitted		1.00			0.81			1.00		0.24	1.00	
Satd. Flow (perm)		1515			1461			1754		446	1918	
Peak-hour factor, PHF	0.50	0.50	0.50	0.79	0.79	0.79	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	4	22	234	19	168	1	536	349	189	627	21
RTOR Reduction (vph)	0	17	0	0	19	0	0	21	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	402	0	0	865	0	189	647	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		26.4			26.4			66.3		81.6	81.6	
Effective Green, g (s)		28.4			28.4			68.3		83.6	83.6	
Actuated g/C Ratio		0.24			0.24			0.57		0.70	0.70	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		358			345			998		435	1336	
v/s Ratio Prot		0.01								0.04	c0.34	
v/s Ratio Perm					c0.28			0.49		0.26		
v/c Ratio		0.03			1.16			0.87		0.43	0.48	
Uniform Delay, d1		35.2			45.8			22.0		10.2	8.3	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			101.3			10.0		0.7	1.3	
Delay (s)		35.2			147.1			32.0		10.9	9.6	
Level of Service		D			F			C		B	A	
Approach Delay (s/veh)		35.2			147.1			32.0			9.9	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2025 Existing Saturday Midday Peak Hour

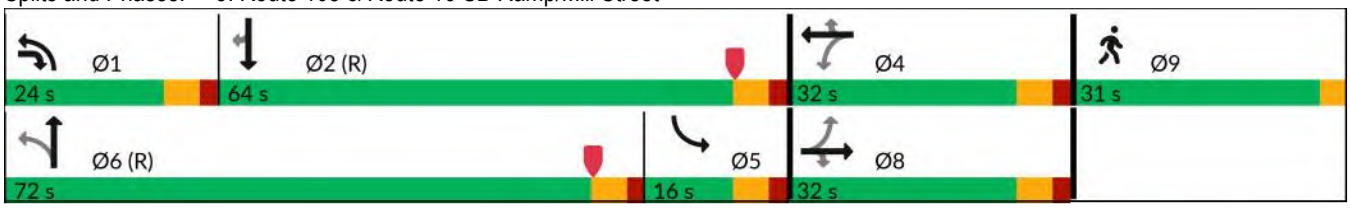
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	7	175	9	2	16	49	671	7	3	490	246
Future Volume (vph)	173	7	175	9	2	16	49	671	7	3	490	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99				0.97	1.00	1.00		1.00		0.97
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.962		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1740	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.724			0.783		0.377			0.950		
Satd. Flow (perm)	0	1333	1577	0	1417	1546	707	1877	0	1767	3541	1541
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192			130						289
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	3					3	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.75	0.75	0.75	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	190	8	192	12	3	21	56	763	8	4	576	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	192	0	15	21	56	771	0	4	576	289
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.7	41.2		28.7	28.7	105.5	105.5		8.1	94.8	94.8
Actuated g/C Ratio		0.19	0.27		0.19	0.19	0.70	0.70		0.05	0.63	0.63
v/c Ratio		0.78	0.34		0.06	0.05	0.10	0.59		0.04	0.26	0.27
Control Delay (s/veh)		79.1	5.0		48.5	0.3	12.6	18.4		68.3	15.5	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		79.1	5.0		48.5	0.3	12.6	18.4		68.3	15.5	2.9
LOS		E	A		D	A	B	B		E	B	A
Approach Delay (s/veh)		42.6			20.4			18.0			11.5	
Approach LOS		D			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 19.9		Intersection LOS: B	
Intersection Capacity Utilization 64.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	198	192	15	21	56	771	4	576	289
v/c Ratio	0.78	0.34	0.06	0.05	0.10	0.59	0.04	0.26	0.27
Control Delay (s/veh)	79.1	5.0	48.5	0.3	12.6	18.4	68.3	15.5	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.1	5.0	48.5	0.3	12.6	18.4	68.3	15.5	2.9
Queue Length 50th (ft)	185	0	12	0	13	295	4	113	0
Queue Length 95th (ft)	#292	39	28	0	58	#924	16	236	43
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	268	667	284	414	636	1311	140	2221	1074
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.29	0.05	0.05	0.09	0.59	0.03	0.26	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	7	175	9	2	16	49	671	7	3	490	246
Future Volume (vph)	173	7	175	9	2	16	49	671	7	3	490	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1757	1577		1740	1547	1786	1878		1771	3541	1545
Flt Permitted		0.72	1.00		0.78	1.00	0.38	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1333	1577		1417	1547	709	1878		1771	3541	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.75	0.75	0.75	0.88	0.88	0.88	0.85	0.85	0.85
Adj. Flow (vph)	190	8	192	12	3	21	56	763	8	4	576	289
RTOR Reduction (vph)	0	0	144	0	0	17	0	0	0	0	0	112
Lane Group Flow (vph)	0	198	48	0	15	4	56	771	0	4	576	177
Confl. Peds. (#/hr)	3					3	6		1	1		6
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		26.7	34.1		26.7	26.7	96.3	96.3		1.4	90.3	90.3
Effective Green, g (s)		28.7	38.1		28.7	28.7	98.3	98.3		3.4	92.3	92.3
Actuated g/C Ratio		0.19	0.25		0.19	0.19	0.65	0.65		0.02	0.61	0.61
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		253	397		269	294	528	1222		39	2164	944
v/s Ratio Prot			0.01				0.01	c0.41		0.00	c0.16	
v/s Ratio Perm		c0.15	0.02		0.01	0.00	0.06					0.11
v/c Ratio		0.78	0.12		0.06	0.01	0.11	0.63		0.10	0.27	0.19
Uniform Delay, d1		58.2	43.5		50.1	49.7	10.0	15.6		72.3	13.6	12.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.5	0.1		0.1	0.0	0.1	2.5		1.2	0.3	0.4
Delay (s)		72.7	43.7		50.1	49.7	10.1	18.1		73.5	13.9	13.3
Level of Service		E	D		D	D	B	B		E	B	B
Approach Delay (s/veh)		58.4			49.9			17.5			14.0	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

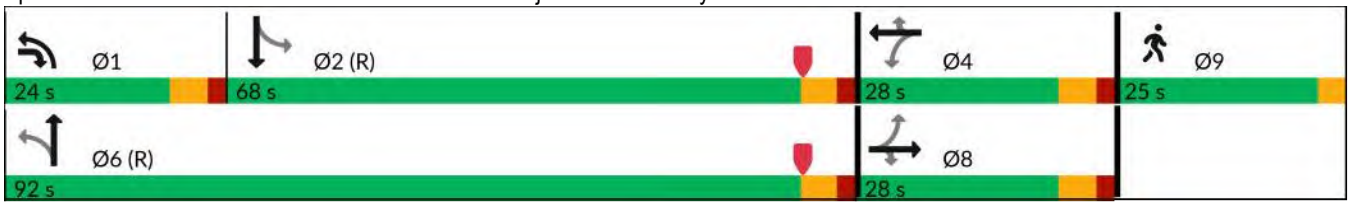
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	257	3	1	5	239	599	0	3	435	73
Future Volume (vph)	23	0	257	3	1	5	239	599	0	3	435	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98	1.00			1.00	1.00	
Frt			0.850			0.850					0.978	
Flt Protected		0.950			0.962		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1838	1624	1693	1966	0	1753	1861	0
Flt Permitted		0.754			0.769		0.364			0.428		
Satd. Flow (perm)	0	1333	1507	0	1469	1586	648	1966	0	790	1861	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			289			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.89	0.89	0.89	0.67	0.67	0.67	0.96	0.96	0.96	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	26	0	289	4	1	7	249	624	0	3	478	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	289	0	5	7	249	624	0	3	558	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.5	27.5		10.2	10.2	126.4	128.0		103.7	103.7	
Actuated g/C Ratio		0.07	0.19		0.07	0.07	0.87	0.88		0.72	0.72	
v/c Ratio		0.27	0.56		0.05	0.04	0.36	0.36		0.01	0.42	
Control Delay (s/veh)		69.8	7.6		62.0	0.4	4.8	4.5		13.3	13.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.3		0.0	7.8	
Total Delay (s/veh)		69.8	7.6		62.0	0.4	4.8	4.9		13.3	21.0	
LOS		E	A		E	A	A	A		B	C	
Approach Delay (s/veh)		12.7			26.1			4.8			20.9	
Approach LOS		B			C			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 11.5		Intersection LOS: B	
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	289	5	7	249	624	3	558
v/c Ratio	0.27	0.56	0.05	0.04	0.36	0.36	0.01	0.42
Control Delay (s/veh)	69.8	7.6	62.0	0.4	4.8	4.5	13.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	7.8
Total Delay (s/veh)	69.8	7.6	62.0	0.4	4.8	4.9	13.3	21.0
Queue Length 50th (ft)	24	0	5	0	25	79	1	198
Queue Length 95th (ft)	56	51	13	0	121	342	7	480
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	220	537	243	337	714	1735	565	1333
Starvation Cap Reductn	0	0	0	0	0	543	0	725
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.54	0.02	0.02	0.35	0.52	0.01	0.92

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	257	3	1	5	239	599	0	3	435	73
Future Volume (vph)	23	0	257	3	1	5	239	599	0	3	435	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1670	1507		1837	1577	1693	1966		1753	1863	
Flt Permitted		0.75	1.00		0.77	1.00	0.36	1.00		0.43	1.00	
Satd. Flow (perm)		1326	1507		1469	1577	648	1966		790	1863	
Peak-hour factor, PHF	0.89	0.89	0.89	0.67	0.67	0.67	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	26	0	289	4	1	7	249	624	0	3	478	80
RTOR Reduction (vph)	0	0	236	0	0	7	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	53	0	5	0	249	624	0	3	556	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		6.0	22.7		6.0	6.0	119.6	119.6		96.9	96.9	
Effective Green, g (s)		8.0	26.7		8.0	8.0	121.6	121.6		98.9	98.9	
Actuated g/C Ratio		0.06	0.18		0.06	0.06	0.84	0.84		0.68	0.68	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		73	277		81	87	678	1648		538	1270	
v/s Ratio Prot			0.02				0.05	c0.32			c0.30	
v/s Ratio Perm		c0.02	0.01		0.00	0.00	0.26			0.00		
v/c Ratio		0.36	0.19		0.06	0.00	0.37	0.38		0.01	0.44	
Uniform Delay, d1		66.0	50.0		64.9	64.7	4.3	2.8		7.4	10.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.3		0.3	0.0	0.3	0.7		0.0	1.1	
Delay (s)		69.0	50.4		65.3	64.8	4.7	3.4		7.4	11.5	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		51.9			65.0			3.8			11.5	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

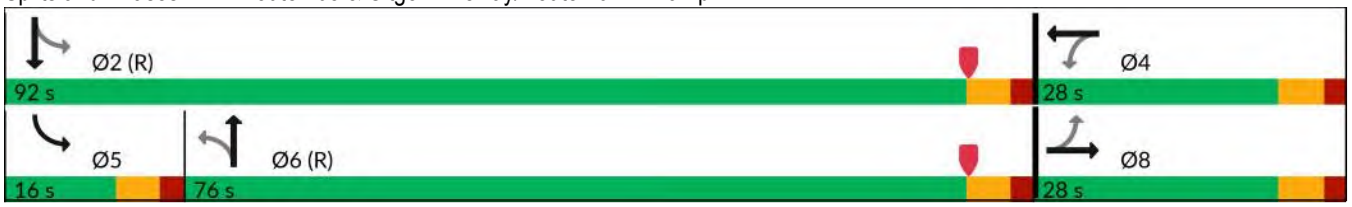


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	80	9	143	2	429	196	144	426	15
Future Volume (vph)	0	5	5	80	9	143	2	429	196	144	426	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.932			0.917			0.958			0.995	
Flt Protected					0.983					0.950		
Satd. Flow (prot)	0	1594	0	0	1713	0	0	1793	0	1771	1917	0
Flt Permitted					0.880			0.999		0.331		
Satd. Flow (perm)	0	1594	0	0	1533	0	0	1791	0	617	1917	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			60			34			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.67	0.67	0.67	0.91	0.91	0.91	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	7	7	88	10	157	2	471	215	173	513	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	255	0	0	688	0	173	531	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		22.7			22.7			74.6		89.3	89.3	
Actuated g/C Ratio		0.19			0.19			0.62		0.74	0.74	
v/c Ratio		0.05			0.75			0.61		0.31	0.37	
Control Delay (s/veh)		25.8			48.7			17.3		6.5	6.9	
Queue Delay		0.0			0.0			52.5		0.0	0.0	
Total Delay (s/veh)		25.8			48.7			69.8		6.5	6.9	
LOS		C			D			E		A	A	
Approach Delay (s/veh)		25.8			48.7			69.8			6.8	
Approach LOS		C			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 39.5		Intersection LOS: D	
Intersection Capacity Utilization 88.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	14	255	688	173	531
v/c Ratio	0.05	0.75	0.61	0.31	0.37
Control Delay (s/veh)	25.8	48.7	17.3	6.5	6.9
Queue Delay	0.0	0.0	52.5	0.0	0.0
Total Delay (s/veh)	25.8	48.7	69.8	6.5	6.9
Queue Length 50th (ft)	4	144	294	34	128
Queue Length 95th (ft)	15	227	485	61	193
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	345	373	1150	575	1453
Starvation Cap Reductn	0	0	535	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.68	1.12	0.30	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	80	9	143	2	429	196	144	426	15
Future Volume (vph)	0	5	5	80	9	143	2	429	196	144	426	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			0.92			0.96		1.00	0.99	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1595			1713			1792		1771	1917	
Flt Permitted		1.00			0.88			1.00		0.33	1.00	
Satd. Flow (perm)		1595			1533			1791		617	1917	
Peak-hour factor, PHF	0.67	0.67	0.67	0.91	0.91	0.91	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	0	7	7	88	10	157	2	471	215	173	513	18
RTOR Reduction (vph)	0	6	0	0	49	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	8	0	0	206	0	0	675	0	173	530	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.7			20.7			72.6		87.3	87.3	
Effective Green, g (s)		22.7			22.7			74.6		89.3	89.3	
Actuated g/C Ratio		0.19			0.19			0.62		0.74	0.74	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		301			289			1113		562	1426	
v/s Ratio Prot		0.01								0.03	c0.28	
v/s Ratio Perm					c0.13			c0.38		0.20		
v/c Ratio		0.03			0.71			0.61		0.31	0.37	
Uniform Delay, d1		39.7			45.6			13.8		6.3	5.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			8.1			2.5		0.3	0.7	
Delay (s)		39.7			53.7			16.2		6.6	6.2	
Level of Service		D			D			B		A	A	
Approach Delay (s/veh)		39.7			53.7			16.2			6.3	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year No-Build Weekday Morning Peak Hour

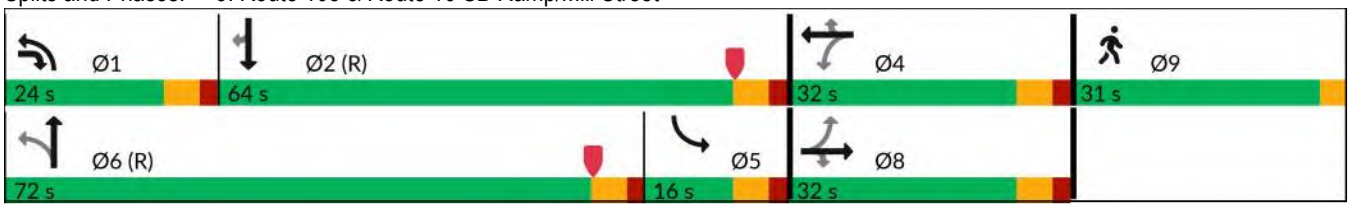
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	10	375	11	21	7	67	832	7	5	544	280
Future Volume (vph)	192	10	375	11	21	7	67	832	7	5	544	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98	1.00					0.98
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.955			0.983		0.950			0.950		
Satd. Flow (prot)	0	1754	1561	0	1727	1544	1752	1843	0	1736	3473	1554
Flt Permitted		0.706			0.868		0.349			0.950		
Satd. Flow (perm)	0	1294	1561	0	1525	1509	643	1843	0	1736	3473	1519
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			487			130						295
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1	2					2
Peak Hour Factor	0.70	0.70	0.70	0.77	0.77	0.77	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	274	14	536	14	27	9	78	967	8	5	573	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	536	0	41	9	78	975	0	5	573	295
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		41.4	56.0		41.4	41.4	92.8	92.8		8.2	80.0	80.0
Actuated g/C Ratio		0.27	0.37		0.27	0.27	0.61	0.61		0.05	0.53	0.53
v/c Ratio		0.81	0.61		0.10	0.02	0.16	0.86		0.05	0.31	0.31
Control Delay (s/veh)		69.6	6.5		44.0	0.0	15.3	33.9		68.6	22.1	3.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		69.6	6.5		44.0	0.0	15.3	33.9		68.6	22.1	3.5
LOS		E	A		D	A	B	C		E	C	A
Approach Delay (s/veh)		28.6			36.1			32.5			16.1	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 26.3		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	288	536	41	9	78	975	5	573	295
v/c Ratio	0.81	0.61	0.10	0.02	0.16	0.86	0.05	0.31	0.31
Control Delay (s/veh)	69.6	6.5	44.0	0.0	15.3	33.9	68.6	22.1	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.6	6.5	44.0	0.0	15.3	33.9	68.6	22.1	3.5
Queue Length 50th (ft)	260	30	30	0	26	663	5	153	0
Queue Length 95th (ft)	#337	8	59	0	74	#1305	20	267	60
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	354	946	417	507	542	1132	137	1839	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.57	0.10	0.02	0.14	0.86	0.04	0.31	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	10	375	11	21	7	67	832	7	5	544	280
Future Volume (vph)	192	10	375	11	21	7	67	832	7	5	544	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750	1561		1727	1511	1752	1842		1736	3473	1520
Flt Permitted		0.71	1.00		0.87	1.00	0.35	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1295	1561		1525	1511	644	1842		1736	3473	1520
Peak-hour factor, PHF	0.70	0.70	0.70	0.77	0.77	0.77	0.86	0.86	0.86	0.95	0.95	0.95
Adj. Flow (vph)	274	14	536	14	27	9	78	967	8	5	573	295
RTOR Reduction (vph)	0	0	316	0	0	7	0	0	0	0	0	144
Lane Group Flow (vph)	0	288	220	0	41	2	78	975	0	5	573	151
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		39.4	48.9		39.4	39.4	83.6	83.6		1.4	75.5	75.5
Effective Green, g (s)		41.4	52.9		41.4	41.4	85.6	85.6		3.4	77.5	77.5
Actuated g/C Ratio		0.27	0.35		0.27	0.27	0.57	0.57		0.02	0.51	0.51
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		355	546		418	414	449	1044		39	1782	780
v/s Ratio Prot			0.03				0.01	c0.53		0.00	c0.17	
v/s Ratio Perm		c0.22	0.11		0.03	0.00	0.09					0.10
v/c Ratio		0.81	0.40		0.10	0.01	0.17	0.93		0.13	0.32	0.19
Uniform Delay, d1		51.2	37.1		40.9	39.8	15.6	30.1		72.3	21.4	19.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		13.1	0.5		0.1	0.0	0.2	15.9		1.5	0.5	0.6
Delay (s)		64.3	37.6		41.0	39.8	15.8	46.0		73.8	21.9	20.4
Level of Service		E	D		D	D	B	D		E	C	C
Approach Delay (s/veh)		46.9			40.8			43.7			21.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

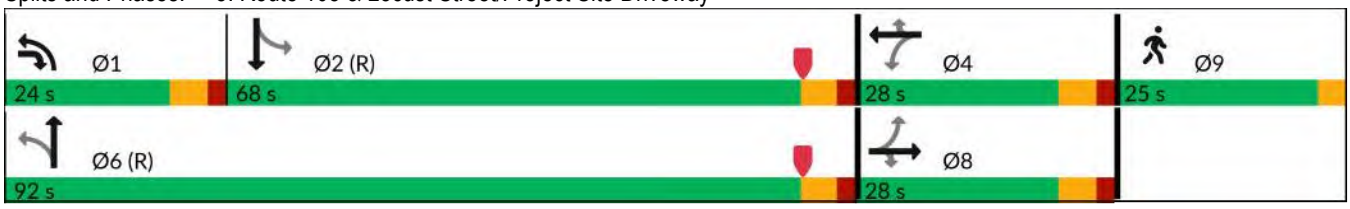
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	209	0	0	1	229	747	3	2	515	46
Future Volume (vph)	14	1	209	0	0	1	229	747	3	2	515	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850		0.999			0.988	
Flt Protected		0.955					0.950			0.950		
Satd. Flow (prot)	0	1644	1463	0	1910	1624	1660	1926	0	1719	1846	0
Flt Permitted		0.738					0.343			0.352		
Satd. Flow (perm)	0	1271	1463	0	1910	1624	599	1926	0	637	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232			377					4	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.90	0.90	0.90	0.25	0.25	0.25	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	16	1	232	0	0	4	254	830	3	2	548	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	232	0	0	4	254	833	0	2	597	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.5	25.8			9.0	129.9	132.3		105.4	105.4	
Actuated g/C Ratio		0.07	0.18			0.06	0.90	0.91		0.73	0.73	
v/c Ratio		0.20	0.52			0.01	0.37	0.47		0.00	0.44	
Control Delay (s/veh)		69.3	7.9			0.0	4.4	5.0		13.5	13.1	
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	26.4	
Total Delay (s/veh)		69.3	7.9			0.0	4.4	5.0		13.5	39.5	
LOS		E	A			A	A	A		B	D	
Approach Delay (s/veh)		12.1						4.9			39.4	
Approach LOS		B						A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay (s/veh): 16.5		Intersection LOS: B	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	232	4	254	833	2	597
v/c Ratio	0.20	0.52	0.01	0.37	0.47	0.00	0.44
Control Delay (s/veh)	69.3	7.9	0.0	4.4	5.0	13.5	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	26.4
Total Delay (s/veh)	69.3	7.9	0.0	4.4	5.0	13.5	39.5
Queue Length 50th (ft)	16	0	0	0	0	0	147
Queue Length 95th (ft)	42	49	0	118	521	6	537
Internal Link Dist (ft)	540				415		133
Turn Bay Length (ft)		275		170		85	
Base Capacity (vph)	210	462	583	696	1758	463	1343
Starvation Cap Reductn	0	0	0	0	88	0	760
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.50	0.01	0.36	0.50	0.00	1.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	209	0	0	1	229	747	3	2	515	46
Future Volume (vph)	14	1	209	0	0	1	229	747	3	2	515	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85			0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00			1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644	1463			1624	1660	1927		1719	1846	
Flt Permitted		0.74	1.00			1.00	0.34	1.00		0.35	1.00	
Satd. Flow (perm)		1271	1463			1624	599	1927		638	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.25	0.25	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	16	1	232	0	0	4	254	830	3	2	548	49
RTOR Reduction (vph)	0	0	190	0	0	4	0	0	0	0	1	0
Lane Group Flow (vph)	0	17	42	0	0	0	254	833	0	2	596	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		3.7	22.2			3.7	121.9	121.9		97.4	97.4	
Effective Green, g (s)		5.7	26.2			5.7	123.9	123.9		99.4	99.4	
Actuated g/C Ratio		0.04	0.18			0.04	0.85	0.85		0.69	0.69	
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		49	264			63	661	1646		437	1265	
v/s Ratio Prot			0.02				0.05	c0.43			0.32	
v/s Ratio Perm		c0.01	0.01			0.00	0.27			0.00		
v/c Ratio		0.35	0.16			0.00	0.38	0.51		0.00	0.47	
Uniform Delay, d1		67.8	50.1			66.9	4.5	2.7		7.2	10.6	
Progression Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.2	0.3			0.0	0.4	1.1		0.0	1.3	
Delay (s)		72.1	50.4			66.9	4.8	3.8		7.2	11.8	
Level of Service		E	D			E	A	A		A	B	
Approach Delay (s/veh)		51.9			66.9			4.1			11.8	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

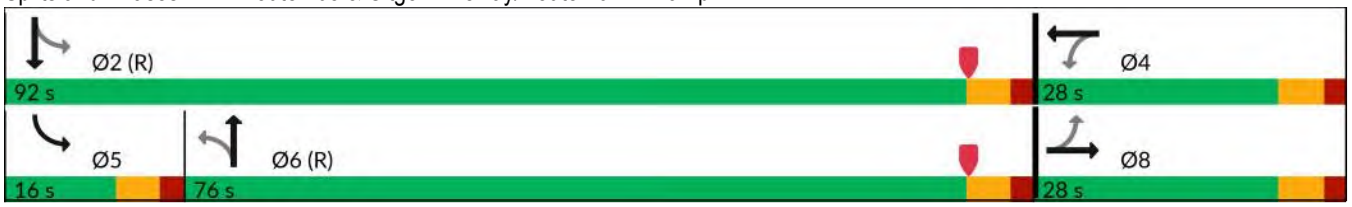


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	88	3	100	1	481	280	122	466	9
Future Volume (vph)	0	0	9	88	3	100	1	481	280	122	466	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.865			0.929			0.950			0.997	
Flt Protected					0.977					0.950		
Satd. Flow (prot)	0	1479	0	0	1742	0	0	1710	0	1719	1866	0
Flt Permitted					0.846					0.287		
Satd. Flow (perm)	0	1479	0	0	1508	0	0	1710	0	519	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		437			41			44			2	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.67	0.67	0.67	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	0	13	98	3	111	1	529	308	134	512	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	0	0	212	0	0	838	0	134	522	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		20.1			20.1			77.8		91.9	91.9	
Actuated g/C Ratio		0.17			0.17			0.65		0.77	0.77	
v/c Ratio		0.02			0.74			0.75		0.27	0.37	
Control Delay (s/veh)		0.1			53.2			20.1		5.5	5.9	
Queue Delay		0.0			0.0			51.0		0.0	0.0	
Total Delay (s/veh)		0.1			53.2			71.1		5.5	5.9	
LOS		A			D			E		A	A	
Approach Delay (s/veh)		0.1			53.2			71.1			5.8	
Approach LOS		A			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 43.4		Intersection LOS: D	
Intersection Capacity Utilization 95.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	13	212	838	134	522
v/c Ratio	0.02	0.74	0.75	0.27	0.37
Control Delay (s/veh)	0.1	53.2	20.1	5.5	5.9
Queue Delay	0.0	0.0	51.0	0.0	0.0
Total Delay (s/veh)	0.1	53.2	71.1	5.5	5.9
Queue Length 50th (ft)	0	126	399	23	116
Queue Length 95th (ft)	0	209	651	44	182
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	646	335	1123	517	1430
Starvation Cap Reductn	0	0	435	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.63	1.22	0.26	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	88	3	100	1	481	280	122	466	9
Future Volume (vph)	0	0	9	88	3	100	1	481	280	122	466	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.87			0.93			0.95		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1479			1743			1710		1719	1866	
Flt Permitted		1.00			0.85			1.00		0.29	1.00	
Satd. Flow (perm)		1479			1508			1710		519	1866	
Peak-hour factor, PHF	0.67	0.67	0.67	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	13	98	3	111	1	529	308	134	512	10
RTOR Reduction (vph)	0	11	0	0	34	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	178	0	0	823	0	134	522	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		18.1			18.1			75.8		89.9	89.9	
Effective Green, g (s)		20.1			20.1			77.8		91.9	91.9	
Actuated g/C Ratio		0.17			0.17			0.65		0.77	0.77	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		247			252			1108		498	1429	
v/s Ratio Prot		0.00								0.02	c0.28	
v/s Ratio Perm					c0.12			0.48		0.18		
v/c Ratio		0.01			0.71			0.74		0.27	0.36	
Uniform Delay, d1		41.6			47.2			14.3		5.8	4.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			8.7			4.5		0.3	0.7	
Delay (s)		41.7			55.8			18.8		6.1	5.3	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		41.7			55.8			18.8			5.4	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year No-Build Weekday Evening Peak Hour



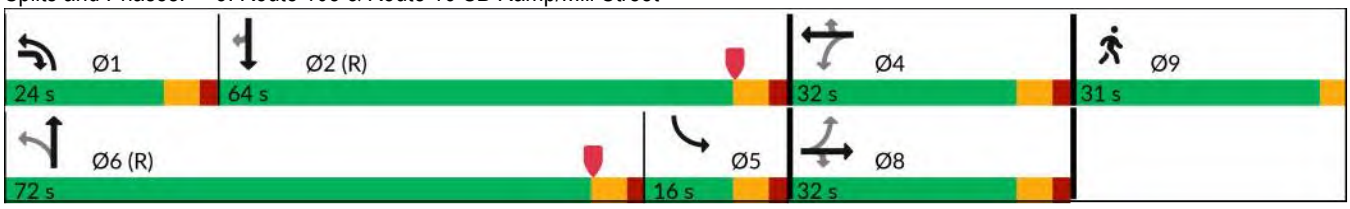
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	5	279	3	3	13	48	793	10	8	675	271
Future Volume (vph)	188	5	279	3	3	13	48	793	10	8	675	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98		1.00		1.00		
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.976		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1766	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.727			0.887		0.298			0.950		
Satd. Flow (perm)	0	1345	1577	0	1605	1555	561	1877	0	1768	3541	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			313			130		1				298
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.89	0.89	0.89	0.85	0.85	0.85	0.84	0.84	0.84	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	211	6	313	4	4	15	57	944	12	9	742	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	313	0	8	15	57	956	0	9	742	298
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.8	43.5		30.8	30.8	103.2	103.2		8.5	92.5	92.5
Actuated g/C Ratio		0.20	0.29		0.20	0.20	0.68	0.68		0.06	0.61	0.61
v/c Ratio		0.79	0.46		0.02	0.04	0.12	0.75		0.09	0.34	0.27
Control Delay (s/veh)		77.2	5.0		47.0	0.2	13.2	23.2		69.0	17.2	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		77.2	5.0		47.0	0.2	13.2	23.2		69.0	17.2	2.9
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		34.5			16.4			22.6			13.6	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 21.4		Intersection LOS: C	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	217	313	8	15	57	956	9	742	298
v/c Ratio	0.79	0.46	0.02	0.04	0.12	0.75	0.09	0.34	0.27
Control Delay (s/veh)	77.2	5.0	47.0	0.2	13.2	23.2	69.0	17.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.2	5.0	47.0	0.2	13.2	23.2	69.0	17.2	2.9
Queue Length 50th (ft)	200	0	6	0	15	483	9	166	0
Queue Length 95th (ft)	#335	46	21	0	56	#1205	29	334	56
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	282	765	336	429	545	1282	140	2169	1086
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.41	0.02	0.03	0.10	0.75	0.06	0.34	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	5	279	3	3	13	48	793	10	8	675	271
Future Volume (vph)	188	5	279	3	3	13	48	793	10	8	675	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765	1577		1765	1555	1787	1877		1771	3541	1584
Flt Permitted		0.73	1.00		0.89	1.00	0.30	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1345	1577		1605	1555	560	1877		1771	3541	1584
Peak-hour factor, PHF	0.89	0.89	0.89	0.85	0.85	0.85	0.84	0.84	0.84	0.91	0.91	0.91
Adj. Flow (vph)	211	6	313	4	4	15	57	944	12	9	742	298
RTOR Reduction (vph)	0	0	230	0	0	12	0	0	0	0	0	120
Lane Group Flow (vph)	0	217	83	0	8	3	57	956	0	9	742	178
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		28.8	36.2		28.8	28.8	94.0	94.0		1.6	88.2	88.2
Effective Green, g (s)		30.8	40.2		30.8	30.8	96.0	96.0		3.6	90.2	90.2
Actuated g/C Ratio		0.20	0.27		0.20	0.20	0.64	0.64		0.02	0.60	0.60
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		274	419		327	317	432	1193		42	2115	946
v/s Ratio Prot			0.01				0.01	c0.51		0.01	c0.21	
v/s Ratio Perm		c0.16	0.04		0.00	0.00	0.08					0.11
v/c Ratio		0.79	0.20		0.02	0.01	0.13	0.80		0.21	0.35	0.19
Uniform Delay, d1		57.1	42.9		48.1	47.9	11.4	20.4		72.3	15.5	13.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.4	0.2		0.0	0.0	0.1	5.7		2.6	0.5	0.4
Delay (s)		71.5	43.2		48.1	47.9	11.5	26.1		74.9	15.9	14.2
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		54.8			48.0			25.3			16.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



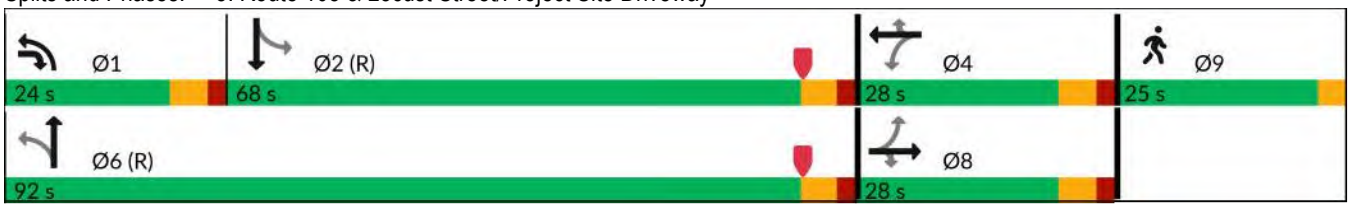
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	287	2	3	3	212	771	0	1	669	107
Future Volume (vph)	36	1	287	2	3	3	212	771	0	1	669	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00			1.00	1.00	
Frt			0.850			0.850					0.979	
Flt Protected		0.954			0.981		0.950			0.950		
Satd. Flow (prot)	0	1692	1507	0	1874	1624	1693	1966	0	1736	1846	0
Flt Permitted		0.722			0.888		0.178			0.365		
Satd. Flow (perm)	0	1280	1507	0	1696	1624	317	1966	0	666	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			305			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							1			3		1
Peak Hour Factor	0.94	0.94	0.94	0.40	0.40	0.40	0.97	0.97	0.97	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	38	1	305	5	8	8	219	795	0	1	743	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	305	0	13	8	219	795	0	1	862	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.7	33.7		11.7	11.7	122.6	123.4		97.5	97.5	
Actuated g/C Ratio		0.08	0.23		0.08	0.08	0.85	0.85		0.67	0.67	
v/c Ratio		0.38	0.52		0.10	0.04	0.47	0.48		0.00	0.69	
Control Delay (s/veh)		72.5	6.1		61.4	0.3	7.2	6.4		17.0	22.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.5		0.0	51.0	
Total Delay (s/veh)		72.5	6.1		61.4	0.3	7.2	6.9		17.0	73.6	
LOS		E	A		E	A	A	A		B	E	
Approach Delay (s/veh)		13.7			38.1			7.0			73.5	
Approach LOS		B			D			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 33.9		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	305	13	8	219	795	1	862
v/c Ratio	0.38	0.52	0.10	0.04	0.47	0.48	0.00	0.69
Control Delay (s/veh)	72.5	6.1	61.4	0.3	7.2	6.4	17.0	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	51.0
Total Delay (s/veh)	72.5	6.1	61.4	0.3	7.2	6.9	17.0	73.6
Queue Length 50th (ft)	36	0	12	0	24	127	0	432
Queue Length 95th (ft)	74	48	15	0	111	519	4	#1144
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	211	598	280	343	485	1672	447	1243
Starvation Cap Reductn	0	0	0	0	0	458	0	508
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.51	0.05	0.02	0.45	0.65	0.00	1.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	287	2	3	3	212	771	0	1	669	107
Future Volume (vph)	36	1	287	2	3	3	212	771	0	1	669	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1691	1507		1874	1624	1693	1966		1735	1846	
Flt Permitted		0.72	1.00		0.89	1.00	0.18	1.00		0.37	1.00	
Satd. Flow (perm)		1281	1507		1696	1624	318	1966		667	1846	
Peak-hour factor, PHF	0.94	0.94	0.94	0.40	0.40	0.40	0.97	0.97	0.97	0.90	0.90	0.90
Adj. Flow (vph)	38	1	305	5	8	8	219	795	0	1	743	119
RTOR Reduction (vph)	0	0	238	0	0	7	0	0	0	0	2	0
Lane Group Flow (vph)	0	39	67	0	13	1	219	795	0	1	860	0
Confl. Peds. (#/hr)							1			3		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		8.6	27.7		8.6	8.6	117.0	117.0		91.9	91.9	
Effective Green, g (s)		10.6	31.7		10.6	10.6	119.0	119.0		93.9	93.9	
Actuated g/C Ratio		0.07	0.22		0.07	0.07	0.82	0.82		0.65	0.65	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		93	329		123	118	461	1613		431	1195	
v/s Ratio Prot			0.03				0.07	c0.40			c0.47	
v/s Ratio Perm		c0.03	0.01		0.01	0.00	0.32			0.00		
v/c Ratio		0.42	0.20		0.11	0.00	0.48	0.49		0.00	0.72	
Uniform Delay, d1		64.3	46.3		62.8	62.3	14.5	3.9		9.0	16.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.3		0.4	0.0	0.8	1.1		0.0	3.7	
Delay (s)		67.3	46.6		63.2	62.3	15.3	5.0		9.0	20.6	
Level of Service		E	D		E	E	B	A		A	C	
Approach Delay (s/veh)		49.0			62.8			7.2			20.6	
Approach LOS		D			E			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

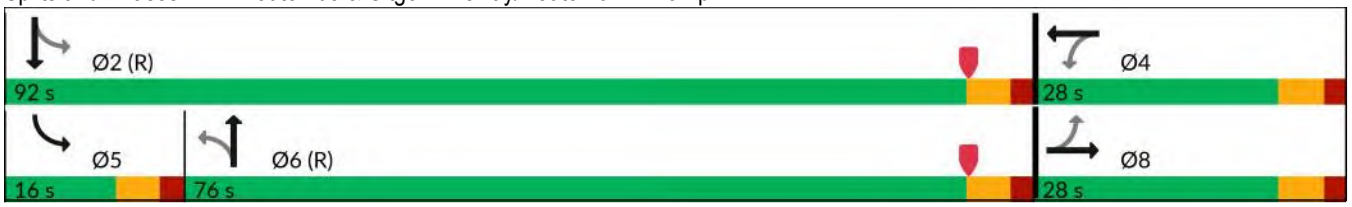


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	188	15	134	1	492	317	172	578	19
Future Volume (vph)	0	2	11	188	15	134	1	492	317	172	578	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.886			0.946			0.947			0.995	
Flt Protected					0.973					0.950		
Satd. Flow (prot)	0	1515	0	0	1749	0	0	1755	0	1771	1918	0
Flt Permitted					0.813					0.237		
Satd. Flow (perm)	0	1515	0	0	1461	0	0	1755	0	442	1918	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			25			48			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	4	22	238	19	170	1	547	352	191	642	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	427	0	0	900	0	191	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		27.8			27.8			68.9		84.2	84.2	
Actuated g/C Ratio		0.23			0.23			0.57		0.70	0.70	
v/c Ratio		0.07			1.19			0.88		0.44	0.49	
Control Delay (s/veh)		18.0			150.2			31.4		8.8	9.2	
Queue Delay		0.0			0.0			50.1		0.0	0.0	
Total Delay (s/veh)		18.0			150.2			81.4		8.8	9.2	
LOS		B			F			F		A	A	
Approach Delay (s/veh)		18.0			150.2			81.4			9.1	
Approach LOS		B			F			F			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay (s/veh): 66.0		Intersection LOS: E	
Intersection Capacity Utilization 112.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	26	427	900	191	663
v/c Ratio	0.07	1.19	0.88	0.44	0.49
Control Delay (s/veh)	18.0	150.2	31.4	8.8	9.2
Queue Delay	0.0	0.0	50.1	0.0	0.0
Total Delay (s/veh)	18.0	150.2	81.4	8.8	9.2
Queue Length 50th (ft)	3	~417	507	40	186
Queue Length 95th (ft)	9	#517	729	61	250
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	368	358	1072	443	1407
Starvation Cap Reductn	0	0	403	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	1.19	1.35	0.43	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	188	15	134	1	492	317	172	578	19
Future Volume (vph)	0	2	11	188	15	134	1	492	317	172	578	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.89			0.95			0.95		1.00	1.00	
Flt Protected		1.00			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1515			1749			1755		1771	1918	
Flt Permitted		1.00			0.81			1.00		0.24	1.00	
Satd. Flow (perm)		1515			1461			1755		443	1918	
Peak-hour factor, PHF	0.50	0.50	0.50	0.79	0.79	0.79	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	4	22	238	19	170	1	547	352	191	642	21
RTOR Reduction (vph)	0	17	0	0	19	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	408	0	0	880	0	191	662	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		25.8			25.8			66.9		82.2	82.2	
Effective Green, g (s)		27.8			27.8			68.9		84.2	84.2	
Actuated g/C Ratio		0.23			0.23			0.57		0.70	0.70	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		350			338			1007		435	1345	
v/s Ratio Prot		0.01								0.04	c0.35	
v/s Ratio Perm					c0.28			0.50		0.27		
v/c Ratio		0.03			1.21			0.87		0.44	0.49	
Uniform Delay, d1		35.6			46.1			21.8		10.1	8.2	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			117.5			10.4		0.7	1.3	
Delay (s)		35.7			163.6			32.3		10.8	9.4	
Level of Service		D			F			C		B	A	
Approach Delay (s/veh)		35.7			163.6			32.3			9.7	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year No-Build Saturday Midday Peak Hour



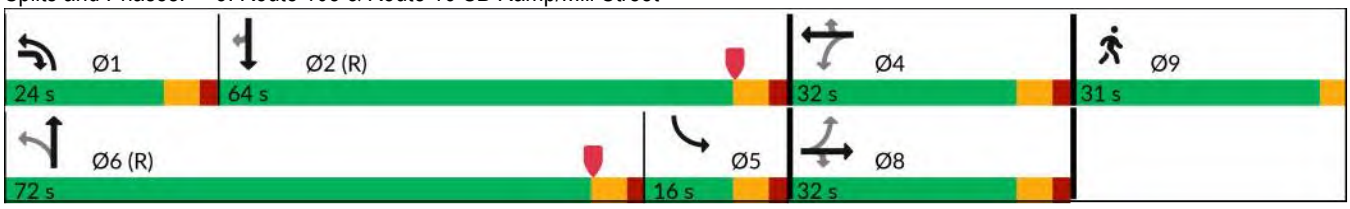
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	7	175	9	2	16	49	684	7	3	501	249
Future Volume (vph)	173	7	175	9	2	16	49	684	7	3	501	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99				0.97	1.00	1.00		1.00		0.97
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.962		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1740	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.724			0.783		0.371			0.950		
Satd. Flow (perm)	0	1333	1577	0	1417	1546	696	1877	0	1767	3541	1541
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192			130						293
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	3					3	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.75	0.75	0.75	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	190	8	192	12	3	21	56	777	8	4	589	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	192	0	15	21	56	785	0	4	589	293
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.7	41.2		28.7	28.7	105.5	105.5		8.1	94.8	94.8
Actuated g/C Ratio		0.19	0.27		0.19	0.19	0.70	0.70		0.05	0.63	0.63
v/c Ratio		0.78	0.34		0.06	0.05	0.10	0.60		0.04	0.27	0.27
Control Delay (s/veh)		79.1	5.0		48.5	0.3	12.6	18.6		68.3	15.5	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		79.1	5.0		48.5	0.3	12.6	18.6		68.3	15.5	2.9
LOS		E	A		D	A	B	B		E	B	A
Approach Delay (s/veh)		42.6			20.4			18.2			11.6	
Approach LOS		D			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 19.9		Intersection LOS: B	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	198	192	15	21	56	785	4	589	293
v/c Ratio	0.78	0.34	0.06	0.05	0.10	0.60	0.04	0.27	0.27
Control Delay (s/veh)	79.1	5.0	48.5	0.3	12.6	18.6	68.3	15.5	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.1	5.0	48.5	0.3	12.6	18.6	68.3	15.5	2.9
Queue Length 50th (ft)	185	0	12	0	13	304	4	116	0
Queue Length 95th (ft)	#292	39	28	0	58	#953	16	241	43
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	268	667	284	414	630	1311	140	2221	1076
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.29	0.05	0.05	0.09	0.60	0.03	0.27	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	7	175	9	2	16	49	684	7	3	501	249
Future Volume (vph)	173	7	175	9	2	16	49	684	7	3	501	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1757	1577		1740	1547	1786	1878		1771	3541	1545
Flt Permitted		0.72	1.00		0.78	1.00	0.37	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1333	1577		1417	1547	697	1878		1771	3541	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.75	0.75	0.75	0.88	0.88	0.88	0.85	0.85	0.85
Adj. Flow (vph)	190	8	192	12	3	21	56	777	8	4	589	293
RTOR Reduction (vph)	0	0	144	0	0	17	0	0	0	0	0	114
Lane Group Flow (vph)	0	198	48	0	15	4	56	785	0	4	589	179
Confl. Peds. (#/hr)	3					3	6		1	1		6
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		26.7	34.1		26.7	26.7	96.3	96.3		1.4	90.3	90.3
Effective Green, g (s)		28.7	38.1		28.7	28.7	98.3	98.3		3.4	92.3	92.3
Actuated g/C Ratio		0.19	0.25		0.19	0.19	0.65	0.65		0.02	0.61	0.61
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		253	397		269	294	521	1222		39	2164	944
v/s Ratio Prot			0.01				0.01	c0.42		0.00	c0.17	
v/s Ratio Perm		c0.15	0.02		0.01	0.00	0.06					0.12
v/c Ratio		0.78	0.12		0.06	0.01	0.11	0.64		0.10	0.27	0.19
Uniform Delay, d1		58.2	43.5		50.1	49.7	10.0	15.8		72.3	13.7	12.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.5	0.1		0.1	0.0	0.1	2.6		1.2	0.3	0.4
Delay (s)		72.7	43.7		50.1	49.7	10.1	18.4		73.5	14.0	13.4
Level of Service		E	D		D	D	B	B		E	B	B
Approach Delay (s/veh)		58.4			49.9			17.9			14.1	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

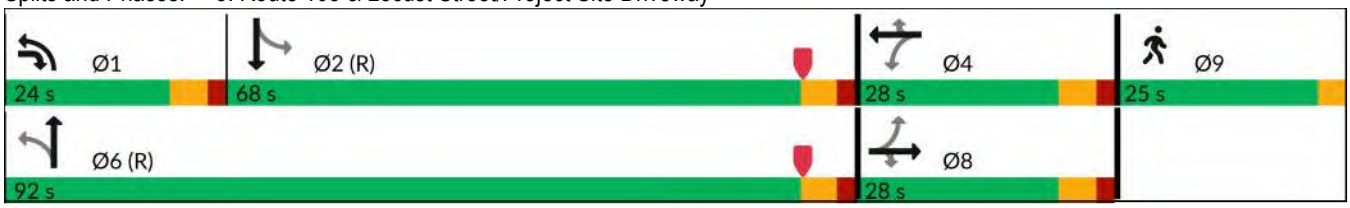
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	260	3	1	5	241	611	0	3	446	74
Future Volume (vph)	23	0	260	3	1	5	241	611	0	3	446	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98	1.00			1.00	1.00	
Frt			0.850			0.850					0.979	
Flt Protected		0.950			0.962		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1838	1624	1693	1966	0	1753	1863	0
Flt Permitted		0.754			0.769		0.355			0.423		
Satd. Flow (perm)	0	1333	1507	0	1469	1586	632	1966	0	780	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			292			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.89	0.89	0.89	0.67	0.67	0.67	0.96	0.96	0.96	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	26	0	292	4	1	7	251	636	0	3	490	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	292	0	5	7	251	636	0	3	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.5	27.9		10.2	10.2	126.4	128.0		103.3	103.3	
Actuated g/C Ratio		0.07	0.19		0.07	0.07	0.87	0.88		0.71	0.71	
v/c Ratio		0.27	0.56		0.05	0.04	0.36	0.37		0.01	0.43	
Control Delay (s/veh)		69.8	7.5		62.0	0.4	4.8	4.6		13.3	13.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.3		0.0	8.8	
Total Delay (s/veh)		69.8	7.5		62.0	0.4	4.8	4.9		13.3	22.2	
LOS		E	A		E	A	A	A		B	C	
Approach Delay (s/veh)		12.6			26.1			4.9			22.2	
Approach LOS		B			C			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 12.0		Intersection LOS: B	
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	292	5	7	251	636	3	571
v/c Ratio	0.27	0.56	0.05	0.04	0.36	0.37	0.01	0.43
Control Delay (s/veh)	69.8	7.5	62.0	0.4	4.8	4.6	13.3	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	8.8
Total Delay (s/veh)	69.8	7.5	62.0	0.4	4.8	4.9	13.3	22.2
Queue Length 50th (ft)	24	0	5	0	25	81	1	207
Queue Length 95th (ft)	56	51	13	0	122	351	7	497
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	220	541	243	337	704	1735	555	1329
Starvation Cap Reductn	0	0	0	0	0	538	0	715
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.54	0.02	0.02	0.36	0.53	0.01	0.93

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	260	3	1	5	241	611	0	3	446	74
Future Volume (vph)	23	0	260	3	1	5	241	611	0	3	446	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1670	1507		1837	1577	1693	1966		1753	1863	
Flt Permitted		0.75	1.00		0.77	1.00	0.35	1.00		0.42	1.00	
Satd. Flow (perm)		1326	1507		1469	1577	632	1966		781	1863	
Peak-hour factor, PHF	0.89	0.89	0.89	0.67	0.67	0.67	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	26	0	292	4	1	7	251	636	0	3	490	81
RTOR Reduction (vph)	0	0	237	0	0	7	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	55	0	5	0	251	636	0	3	569	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		6.0	23.1		6.0	6.0	119.6	119.6		96.5	96.5	
Effective Green, g (s)		8.0	27.1		8.0	8.0	121.6	121.6		98.5	98.5	
Actuated g/C Ratio		0.06	0.19		0.06	0.06	0.84	0.84		0.68	0.68	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		73	281		81	87	669	1648		530	1265	
v/s Ratio Prot			0.03				0.05	c0.32			c0.31	
v/s Ratio Perm		c0.02	0.01		0.00	0.00	0.26			0.00		
v/c Ratio		0.36	0.19		0.06	0.00	0.38	0.39		0.01	0.45	
Uniform Delay, d1		66.0	49.7		64.9	64.7	4.6	2.8		7.5	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.3		0.3	0.0	0.4	0.7		0.0	1.2	
Delay (s)		69.0	50.1		65.3	64.8	4.9	3.5		7.5	11.9	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		51.6			65.0			3.9			11.9	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

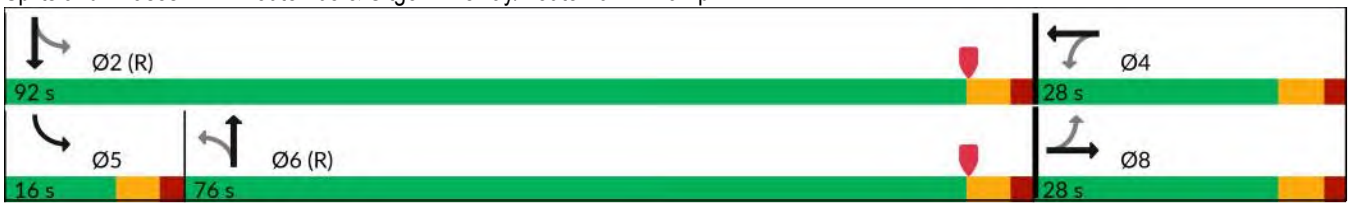


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	82	9	144	2	439	198	145	436	15
Future Volume (vph)	0	5	5	82	9	144	2	439	198	145	436	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.932			0.917			0.958			0.995	
Flt Protected					0.983					0.950		
Satd. Flow (prot)	0	1594	0	0	1713	0	0	1793	0	1771	1917	0
Flt Permitted					0.879			0.999		0.326		
Satd. Flow (perm)	0	1594	0	0	1531	0	0	1791	0	608	1917	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			59			34			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.67	0.67	0.67	0.91	0.91	0.91	0.91	0.91	0.91	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	7	7	90	10	158	2	482	218	175	525	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	258	0	0	702	0	175	543	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		22.3			22.3			74.9		89.7	89.7	
Actuated g/C Ratio		0.19			0.19			0.62		0.75	0.75	
v/c Ratio		0.05			0.78			0.62		0.31	0.38	
Control Delay (s/veh)		26.7			51.3			17.2		6.3	6.7	
Queue Delay		0.0			0.0			52.5		0.0	0.0	
Total Delay (s/veh)		26.7			51.3			69.7		6.3	6.7	
LOS		C			D			E		A	A	
Approach Delay (s/veh)		26.7			51.3			69.7			6.6	
Approach LOS		C			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 39.8		Intersection LOS: D	
Intersection Capacity Utilization 89.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	14	258	702	175	543
v/c Ratio	0.05	0.78	0.62	0.31	0.38
Control Delay (s/veh)	26.7	51.3	17.2	6.3	6.7
Queue Delay	0.0	0.0	52.5	0.0	0.0
Total Delay (s/veh)	26.7	51.3	69.7	6.3	6.7
Queue Length 50th (ft)	4	147	309	35	134
Queue Length 95th (ft)	16	241	467	55	178
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	337	365	1146	571	1449
Starvation Cap Reductn	0	0	533	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.71	1.15	0.31	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	82	9	144	2	439	198	145	436	15
Future Volume (vph)	0	5	5	82	9	144	2	439	198	145	436	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			0.92			0.96		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1595			1713			1793		1771	1917	
Flt Permitted		1.00			0.88			1.00		0.33	1.00	
Satd. Flow (perm)		1595			1531			1791		608	1917	
Peak-hour factor, PHF	0.67	0.67	0.67	0.91	0.91	0.91	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	0	7	7	90	10	158	2	482	218	175	525	18
RTOR Reduction (vph)	0	6	0	0	48	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	8	0	0	210	0	0	689	0	175	542	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.3			20.3			72.9		87.7	87.7	
Effective Green, g (s)		22.3			22.3			74.9		89.7	89.7	
Actuated g/C Ratio		0.19			0.19			0.62		0.75	0.75	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		296			284			1117		559	1432	
v/s Ratio Prot		0.01								0.03	c0.28	
v/s Ratio Perm					c0.14			c0.38		0.21		
v/c Ratio		0.03			0.74			0.62		0.31	0.38	
Uniform Delay, d1		40.0			46.1			13.8		6.2	5.3	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			9.7			2.6		0.3	0.8	
Delay (s)		40.0			55.8			16.3		6.6	6.1	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		40.0			55.8			16.3			6.2	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year Build Weekday Morning Peak Hour

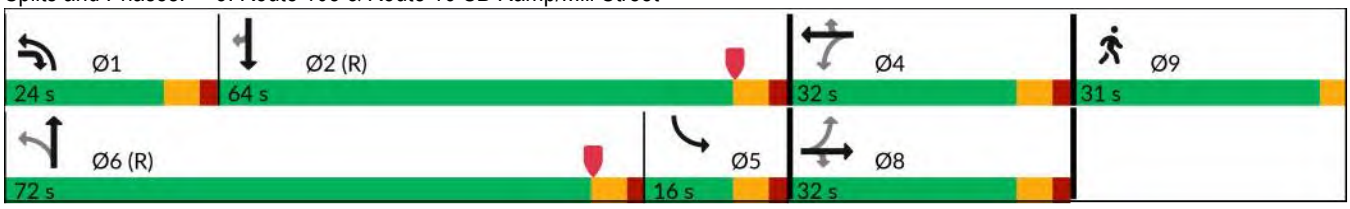
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	10	375	11	21	7	67	832	7	5	546	287
Future Volume (vph)	193	10	375	11	21	7	67	832	7	5	546	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98	1.00					0.98
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.955			0.983		0.950			0.950		
Satd. Flow (prot)	0	1754	1561	0	1727	1544	1752	1843	0	1736	3473	1554
Flt Permitted		0.711			0.882		0.367			0.950		
Satd. Flow (perm)	0	1303	1561	0	1549	1509	676	1843	0	1736	3473	1519
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			417			130						302
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	214	11	417	12	23	8	74	924	8	5	575	302
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	225	417	0	35	8	74	932	0	5	575	302
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.4	47.2		33.4	33.4	100.7	100.7		8.2	88.8	88.8
Actuated g/C Ratio		0.22	0.31		0.22	0.22	0.67	0.67		0.05	0.59	0.59
v/c Ratio		0.78	0.54		0.10	0.02	0.14	0.76		0.05	0.28	0.30
Control Delay (s/veh)		73.9	4.9		47.1	0.1	13.5	24.8		68.6	18.1	3.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		73.9	4.9		47.1	0.1	13.5	24.8		68.6	18.1	3.2
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		29.1			38.4			23.9			13.3	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 21.8		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	225	417	35	8	74	932	5	575	302
v/c Ratio	0.78	0.54	0.10	0.02	0.14	0.76	0.05	0.28	0.30
Control Delay (s/veh)	73.9	4.9	47.1	0.1	13.5	24.8	68.6	18.1	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.9	4.9	47.1	0.1	13.5	24.8	68.6	18.1	3.2
Queue Length 50th (ft)	205	0	27	0	21	506	5	131	0
Queue Length 95th (ft)	#364	51	63	0	74	#1315	20	261	59
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	289	845	344	436	593	1229	137	2043	1017
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.49	0.10	0.02	0.12	0.76	0.04	0.28	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	10	375	11	21	7	67	832	7	5	546	287
Future Volume (vph)	193	10	375	11	21	7	67	832	7	5	546	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750	1561		1727	1510	1752	1842		1736	3473	1520
Flt Permitted		0.71	1.00		0.88	1.00	0.37	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1303	1561		1549	1510	677	1842		1736	3473	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	214	11	417	12	23	8	74	924	8	5	575	302
RTOR Reduction (vph)	0	0	296	0	0	6	0	0	0	0	0	129
Lane Group Flow (vph)	0	225	121	0	35	2	74	932	0	5	575	173
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		31.4	39.9		31.4	31.4	91.6	91.6		1.4	84.5	84.5
Effective Green, g (s)		33.4	43.9		33.4	33.4	93.6	93.6		3.4	86.5	86.5
Actuated g/C Ratio		0.22	0.29		0.22	0.22	0.62	0.62		0.02	0.57	0.57
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		288	453		342	334	494	1141		39	1989	870
v/s Ratio Prot			0.02				0.01	c0.51		0.00	c0.17	
v/s Ratio Perm		c0.17	0.06		0.02	0.00	0.08					0.11
v/c Ratio		0.78	0.27		0.10	0.01	0.15	0.82		0.13	0.29	0.20
Uniform Delay, d1		55.4	41.2		46.9	45.8	12.0	22.1		72.3	16.5	15.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		12.9	0.3		0.1	0.0	0.1	6.5		1.5	0.4	0.5
Delay (s)		68.2	41.5		47.0	45.9	12.2	28.6		73.8	16.9	16.1
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		50.9			46.8			27.4			16.9	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

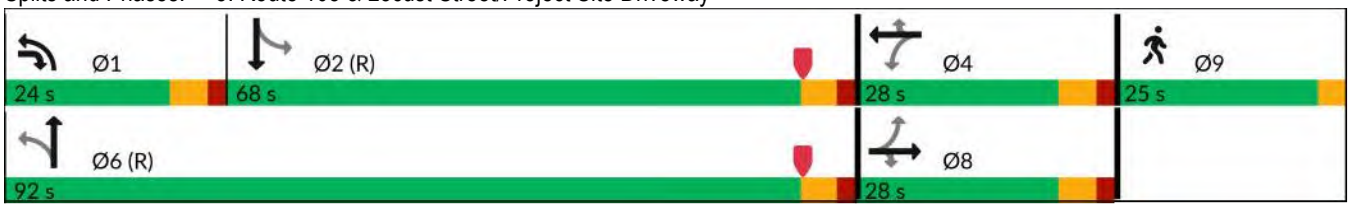
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	0	209	7	0	3	229	747	4	7	515	46
Future Volume (vph)	14	0	209	7	0	3	229	747	4	7	515	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850		0.999			0.988	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1636	1463	0	1815	1624	1660	1926	0	1719	1846	0
Flt Permitted		0.752			0.747		0.343			0.352		
Satd. Flow (perm)	0	1295	1463	0	1427	1624	599	1926	0	637	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232			90					4	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	16	0	232	8	0	3	254	830	4	7	548	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	232	0	8	3	254	834	0	7	597	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.5	25.8		9.2	9.2	129.9	132.3		105.4	105.4	
Actuated g/C Ratio		0.07	0.18		0.06	0.06	0.90	0.91		0.73	0.73	
v/c Ratio		0.19	0.51		0.09	0.02	0.37	0.47		0.02	0.44	
Control Delay (s/veh)		68.4	7.8		64.7	0.0	4.4	5.0		13.0	13.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	26.4	
Total Delay (s/veh)		68.4	7.8		64.7	0.0	4.4	5.1		13.0	39.6	
LOS		E	A		E	A	A	A		B	D	
Approach Delay (s/veh)		11.7			47.1			4.9			39.3	
Approach LOS		B			D			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay (s/veh): 16.7		Intersection LOS: B	
Intersection Capacity Utilization 65.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	232	8	3	254	834	7	597
v/c Ratio	0.19	0.51	0.09	0.02	0.37	0.47	0.02	0.44
Control Delay (s/veh)	68.4	7.8	64.7	0.0	4.4	5.0	13.0	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.4
Total Delay (s/veh)	68.4	7.8	64.7	0.0	4.4	5.1	13.0	39.6
Queue Length 50th (ft)	15	0	7	0	0	0	1	147
Queue Length 95th (ft)	40	49	25	0	119	526	13	540
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	214	463	236	343	696	1757	463	1342
Starvation Cap Reductn	0	0	0	0	0	87	0	759
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.50	0.03	0.01	0.36	0.50	0.02	1.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	0	209	7	0	3	229	747	4	7	515	46
Future Volume (vph)	14	0	209	7	0	3	229	747	4	7	515	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1636	1463		1815	1624	1660	1927		1719	1846	
Flt Permitted		0.75	1.00		0.75	1.00	0.34	1.00		0.35	1.00	
Satd. Flow (perm)		1295	1463		1427	1624	599	1927		637	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	16	0	232	8	0	3	254	830	4	7	548	49
RTOR Reduction (vph)	0	0	190	0	0	3	0	0	0	0	1	0
Lane Group Flow (vph)	0	16	42	0	8	0	254	834	0	7	596	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		3.7	22.2		3.7	3.7	121.9	121.9		97.4	97.4	
Effective Green, g (s)		5.7	26.2		5.7	5.7	123.9	123.9		99.4	99.4	
Actuated g/C Ratio		0.04	0.18		0.04	0.04	0.85	0.85		0.69	0.69	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		50	264		56	63	661	1646		436	1265	
v/s Ratio Prot			0.02				0.05	c0.43			0.32	
v/s Ratio Perm		c0.01	0.01		0.01	0.00	0.27			0.01		
v/c Ratio		0.32	0.16		0.14	0.00	0.38	0.51		0.02	0.47	
Uniform Delay, d1		67.8	50.1		67.3	66.9	4.5	2.7		7.3	10.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.7	0.3		1.2	0.0	0.4	1.1		0.1	1.3	
Delay (s)		71.4	50.4		68.5	66.9	4.8	3.8		7.3	11.8	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		51.7			68.0			4.1			11.8	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

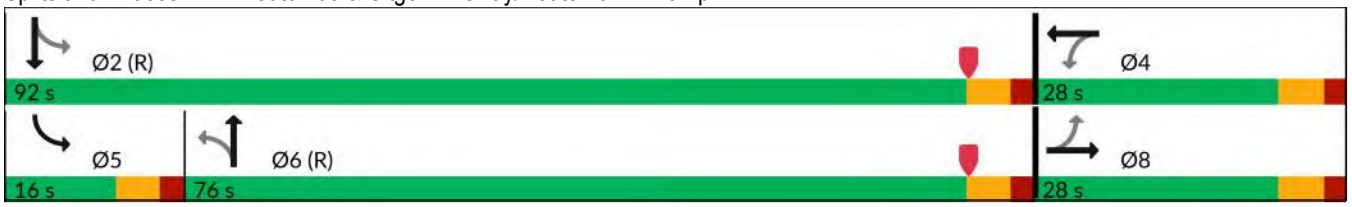


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	94	3	100	1	481	282	122	465	9
Future Volume (vph)	0	0	9	94	3	100	1	481	282	122	465	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.865			0.931			0.950			0.997	
Flt Protected					0.977					0.950		
Satd. Flow (prot)	0	1479	0	0	1745	0	0	1710	0	1719	1866	0
Flt Permitted					0.843					0.285		
Satd. Flow (perm)	0	1479	0	0	1506	0	0	1710	0	516	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		438			39			44			2	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	0	10	104	3	111	1	529	310	134	511	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	10	0	0	218	0	0	840	0	134	521	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		20.6			20.6			77.3		91.4	91.4	
Actuated g/C Ratio		0.17			0.17			0.64		0.76	0.76	
v/c Ratio		0.02			0.75			0.75		0.27	0.37	
Control Delay (s/veh)		0.0			54.4			20.6		5.6	6.0	
Queue Delay		0.0			0.0			51.0		0.0	0.0	
Total Delay (s/veh)		0.0			54.4			71.6		5.6	6.0	
LOS		A			D			E		A	A	
Approach Delay (s/veh)					54.4			71.6			5.9	
Approach LOS					D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 44.0		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	10	218	840	134	521
v/c Ratio	0.02	0.75	0.75	0.27	0.37
Control Delay (s/veh)	0.0	54.4	20.6	5.6	6.0
Queue Delay	0.0	0.0	51.0	0.0	0.0
Total Delay (s/veh)	0.0	54.4	71.6	5.6	6.0
Queue Length 50th (ft)	0	132	410	24	120
Queue Length 95th (ft)	0	217	653	44	181
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	648	335	1117	513	1424
Starvation Cap Reductn	0	0	430	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.65	1.22	0.26	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	94	3	100	1	481	282	122	465	9
Future Volume (vph)	0	0	9	94	3	100	1	481	282	122	465	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.87			0.93			0.95		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1479			1745			1710		1719	1866	
Flt Permitted		1.00			0.84			1.00		0.28	1.00	
Satd. Flow (perm)		1479			1507			1709		515	1866	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	10	104	3	111	1	529	310	134	511	10
RTOR Reduction (vph)	0	8	0	0	32	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	186	0	0	824	0	134	521	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		18.6			18.6			75.3		89.4	89.4	
Effective Green, g (s)		20.6			20.6			77.3		91.4	91.4	
Actuated g/C Ratio		0.17			0.17			0.64		0.76	0.76	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		253			258			1100		493	1421	
v/s Ratio Prot		0.00								0.02	c0.28	
v/s Ratio Perm					c0.12			c0.48		0.18		
v/c Ratio		0.01			0.72			0.75		0.27	0.37	
Uniform Delay, d1		41.2			47.0			14.7		6.0	4.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			9.2			4.7		0.3	0.7	
Delay (s)		41.2			56.2			19.4		6.3	5.5	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		41.2			56.2			19.4			5.6	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year Build Weekday Evening Peak Hour

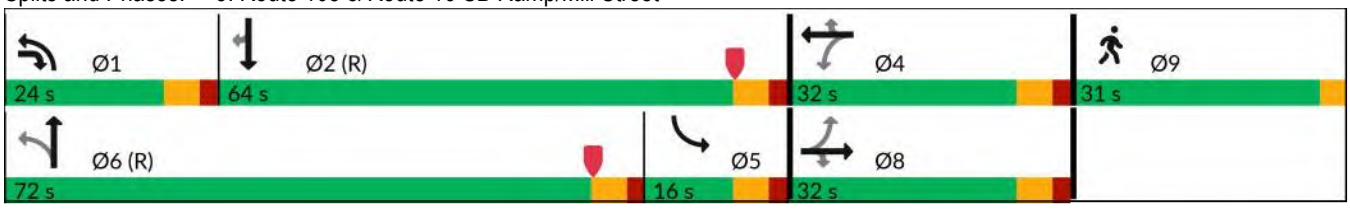
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	5	279	3	3	13	48	796	10	8	677	278
Future Volume (vph)	191	5	279	3	3	13	48	796	10	8	677	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98		1.00		1.00		
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.976		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1766	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.728			0.896		0.297			0.950		
Satd. Flow (perm)	0	1347	1577	0	1621	1555	559	1877	0	1768	3541	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			310			130		1				305
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	212	6	310	3	3	14	53	884	11	9	744	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	310	0	6	14	53	895	0	9	744	305
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.9	43.4		30.9	30.9	103.1	103.1		8.5	92.6	92.6
Actuated g/C Ratio		0.20	0.29		0.20	0.20	0.68	0.68		0.06	0.61	0.61
v/c Ratio		0.79	0.46		0.02	0.03	0.12	0.70		0.09	0.34	0.28
Control Delay (s/veh)		77.0	5.0		46.8	0.2	13.3	21.8		69.0	17.2	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		77.0	5.0		46.8	0.2	13.3	21.8		69.0	17.2	2.9
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		34.7			14.1			21.3			13.5	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 20.8		Intersection LOS: C	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	218	310	6	14	53	895	9	744	305
v/c Ratio	0.79	0.46	0.02	0.03	0.12	0.70	0.09	0.34	0.28
Control Delay (s/veh)	77.0	5.0	46.8	0.2	13.3	21.8	69.0	17.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	77.0	5.0	46.8	0.2	13.3	21.8	69.0	17.2	2.9
Queue Length 50th (ft)	201	0	5	0	14	425	9	167	0
Queue Length 95th (ft)	#345	48	19	0	57	#1228	29	333	56
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	282	763	340	429	544	1281	140	2170	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.41	0.02	0.03	0.10	0.70	0.06	0.34	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	5	279	3	3	13	48	796	10	8	677	278
Future Volume (vph)	191	5	279	3	3	13	48	796	10	8	677	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765	1577		1765	1555	1787	1877		1771	3541	1584
Flt Permitted		0.73	1.00		0.90	1.00	0.30	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1347	1577		1621	1555	559	1877		1771	3541	1584
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	212	6	310	3	3	14	53	884	11	9	744	305
RTOR Reduction (vph)	0	0	227	0	0	11	0	0	0	0	0	123
Lane Group Flow (vph)	0	218	83	0	6	3	53	895	0	9	744	182
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		28.9	36.2		28.9	28.9	93.9	93.9		1.6	88.2	88.2
Effective Green, g (s)		30.9	40.2		30.9	30.9	95.9	95.9		3.6	90.2	90.2
Actuated g/C Ratio		0.20	0.27		0.20	0.20	0.64	0.64		0.02	0.60	0.60
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		275	419		331	318	430	1192		42	2115	946
v/s Ratio Prot			0.01				0.01	c0.48		0.01	c0.21	
v/s Ratio Perm		c0.16	0.04		0.00	0.00	0.07					0.11
v/c Ratio		0.79	0.20		0.02	0.01	0.12	0.75		0.21	0.35	0.19
Uniform Delay, d1		57.0	42.9		47.9	47.8	11.4	19.2		72.3	15.5	13.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.4	0.2		0.0	0.0	0.1	4.4		2.6	0.5	0.5
Delay (s)		71.4	43.1		48.0	47.9	11.5	23.6		74.9	16.0	14.3
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		54.8			47.9			22.9			16.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

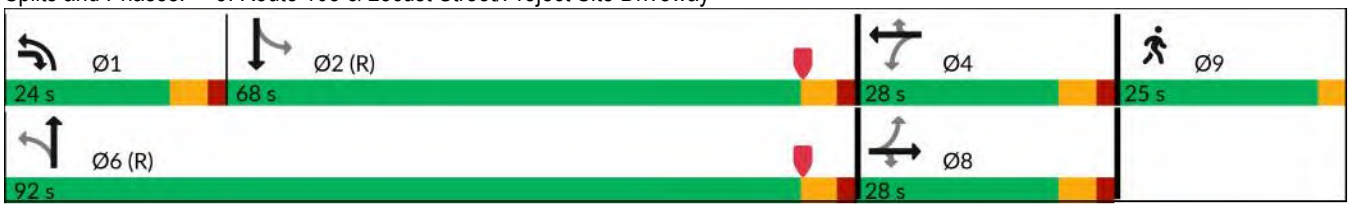
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	287	11	0	4	212	771	6	9	669	107
Future Volume (vph)	36	0	287	11	0	4	212	771	6	9	669	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00			1.00	1.00	
Frt			0.850			0.850		0.999			0.979	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1815	1624	1693	1965	0	1736	1846	0
Flt Permitted		0.750			0.732		0.179			0.363		
Satd. Flow (perm)	0	1330	1507	0	1398	1624	319	1965	0	663	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			305			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							1			3		1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	38	0	305	12	0	4	219	795	6	10	743	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	305	0	12	4	219	801	0	10	862	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		11.6	33.6		11.6	11.6	122.7	123.5		97.6	97.6	
Actuated g/C Ratio		0.08	0.23		0.08	0.08	0.85	0.85		0.67	0.67	
v/c Ratio		0.36	0.52		0.11	0.02	0.47	0.48		0.02	0.69	
Control Delay (s/veh)		71.4	6.1		62.1	0.3	7.2	6.4		16.0	22.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.6		0.0	51.0	
Total Delay (s/veh)		71.4	6.1		62.1	0.3	7.2	6.9		16.0	73.5	
LOS		E	A		E	A	A	A		B	E	
Approach Delay (s/veh)		13.4			46.6			7.0			72.9	
Approach LOS		B			D			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 33.8		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	305	12	4	219	801	10	862
v/c Ratio	0.36	0.52	0.11	0.02	0.47	0.48	0.02	0.69
Control Delay (s/veh)	71.4	6.1	62.1	0.3	7.2	6.4	16.0	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	51.0
Total Delay (s/veh)	71.4	6.1	62.1	0.3	7.2	6.9	16.0	73.5
Queue Length 50th (ft)	35	0	11	0	24	128	3	431
Queue Length 95th (ft)	73	48	32	0	111	525	18	#1144
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	220	598	231	343	486	1673	446	1244
Starvation Cap Reductn	0	0	0	0	0	456	0	508
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.51	0.05	0.01	0.45	0.66	0.02	1.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	287	11	0	4	212	771	6	9	669	107
Future Volume (vph)	36	0	287	11	0	4	212	771	6	9	669	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685	1507		1815	1624	1693	1964		1735	1846	
Flt Permitted		0.75	1.00		0.73	1.00	0.18	1.00		0.36	1.00	
Satd. Flow (perm)		1330	1507		1399	1624	319	1964		663	1846	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Adj. Flow (vph)	38	0	305	12	0	4	219	795	6	10	743	119
RTOR Reduction (vph)	0	0	239	0	0	4	0	0	0	0	2	0
Lane Group Flow (vph)	0	38	66	0	12	0	219	801	0	10	860	0
Confl. Peds. (#/hr)							1			3		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		8.5	27.6		8.5	8.5	117.1	117.1		92.0	92.0	
Effective Green, g (s)		10.5	31.6		10.5	10.5	119.1	119.1		94.0	94.0	
Actuated g/C Ratio		0.07	0.22		0.07	0.07	0.82	0.82		0.65	0.65	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		96	328		101	117	461	1613		429	1196	
v/s Ratio Prot			0.03				0.07	c0.41			c0.47	
v/s Ratio Perm		c0.03	0.01		0.01	0.00	0.32			0.02		
v/c Ratio		0.40	0.20		0.12	0.00	0.48	0.50		0.02	0.72	
Uniform Delay, d1		64.2	46.4		62.9	62.4	14.5	3.9		9.1	16.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7	0.3		0.5	0.0	0.8	1.1		0.1	3.7	
Delay (s)		66.9	46.7		63.4	62.4	15.2	5.0		9.2	20.5	
Level of Service		E	D		E	E	B	A		A	C	
Approach Delay (s/veh)		48.9			63.2			7.2			20.4	
Approach LOS		D			E			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

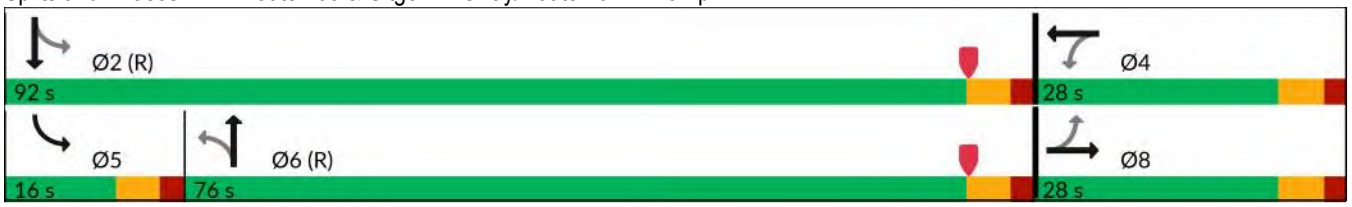


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	196	15	134	1	491	319	172	578	19
Future Volume (vph)	0	2	11	196	15	134	1	491	319	172	578	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.884			0.948			0.947			0.995	
Flt Protected					0.972					0.950		
Satd. Flow (prot)	0	1512	0	0	1751	0	0	1755	0	1771	1918	0
Flt Permitted					0.816					0.237		
Satd. Flow (perm)	0	1512	0	0	1470	0	0	1755	0	442	1918	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			24			49			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	2	12	218	17	149	1	546	354	191	642	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	384	0	0	901	0	191	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		27.8			27.8			68.9		84.2	84.2	
Actuated g/C Ratio		0.23			0.23			0.57		0.70	0.70	
v/c Ratio		0.04			1.07			0.88		0.44	0.49	
Control Delay (s/veh)		20.6			109.6			31.4		8.8	9.2	
Queue Delay		0.0			0.0			50.0		0.0	0.0	
Total Delay (s/veh)		20.6			109.6			81.4		8.8	9.2	
LOS		C			F			F		A	A	
Approach Delay (s/veh)		20.6			109.6			81.4			9.1	
Approach LOS		C			F			F			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay (s/veh): 57.3		Intersection LOS: E	
Intersection Capacity Utilization 113.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	14	384	901	191	663
v/c Ratio	0.04	1.07	0.88	0.44	0.49
Control Delay (s/veh)	20.6	109.6	31.4	8.8	9.2
Queue Delay	0.0	0.0	50.0	0.0	0.0
Total Delay (s/veh)	20.6	109.6	81.4	8.8	9.2
Queue Length 50th (ft)	1	~347	508	40	186
Queue Length 95th (ft)	20	#551	730	61	250
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	359	359	1072	443	1407
Starvation Cap Reductn	0	0	402	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	1.07	1.34	0.43	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	196	15	134	1	491	319	172	578	19
Future Volume (vph)	0	2	11	196	15	134	1	491	319	172	578	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.88			0.95			0.95		1.00	1.00	
Flt Protected		1.00			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1512			1751			1755		1771	1918	
Flt Permitted		1.00			0.82			1.00		0.24	1.00	
Satd. Flow (perm)		1512			1470			1754		442	1918	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	2	12	218	17	149	1	546	354	191	642	21
RTOR Reduction (vph)	0	9	0	0	18	0	0	21	0	0	1	0
Lane Group Flow (vph)	0	5	0	0	366	0	0	880	0	191	662	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		25.8			25.8			66.9		82.2	82.2	
Effective Green, g (s)		27.8			27.8			68.9		84.2	84.2	
Actuated g/C Ratio		0.23			0.23			0.57		0.70	0.70	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		350			340			1007		435	1345	
v/s Ratio Prot		0.00								0.04	c0.35	
v/s Ratio Perm					c0.25			c0.50		0.27		
v/c Ratio		0.01			1.08			0.87		0.44	0.49	
Uniform Delay, d1		35.5			46.1			21.8		10.1	8.2	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			70.3			10.5		0.7	1.3	
Delay (s)		35.5			116.4			32.3		10.8	9.4	
Level of Service		D			F			C		B	A	
Approach Delay (s/veh)		35.5			116.4			32.3			9.7	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2026 Opening Year Build Saturday Midday Peak Hour

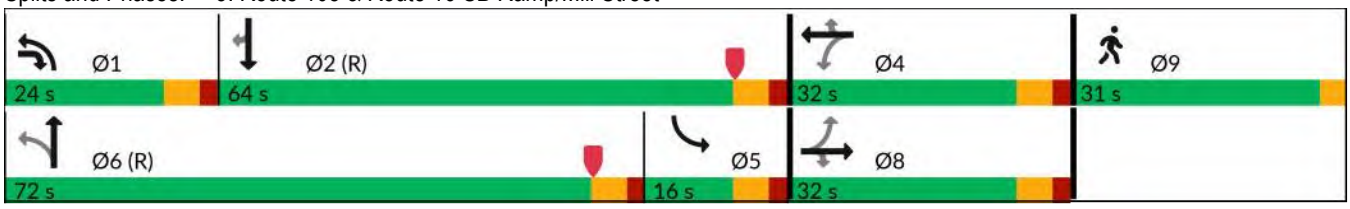
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	7	175	9	2	16	49	687	7	3	502	256
Future Volume (vph)	176	7	175	9	2	16	49	687	7	3	502	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99				0.97	1.00	1.00		1.00		0.97
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.960		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1737	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.726			0.789		0.385			0.950		
Satd. Flow (perm)	0	1336	1577	0	1427	1546	722	1877	0	1767	3541	1541
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192			130						284
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	3					3	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	193	8	192	10	2	18	54	763	8	3	558	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	192	0	12	18	54	771	0	3	558	284
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		29.1	41.6		29.1	29.1	105.2	105.2		8.0	94.4	94.4
Actuated g/C Ratio		0.19	0.28		0.19	0.19	0.70	0.70		0.05	0.63	0.63
v/c Ratio		0.78	0.34		0.04	0.04	0.10	0.59		0.03	0.25	0.27
Control Delay (s/veh)		78.4	5.0		48.0	0.2	12.7	18.5		68.3	15.5	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		78.4	5.0		48.0	0.2	12.7	18.5		68.3	15.5	2.9
LOS		E	A		D	A	B	B		E	B	A
Approach Delay (s/veh)		42.5			19.3			18.1			11.5	
Approach LOS		D			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 20.1		Intersection LOS: C	
Intersection Capacity Utilization 65.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	201	192	12	18	54	771	3	558	284
v/c Ratio	0.78	0.34	0.04	0.04	0.10	0.59	0.03	0.25	0.27
Control Delay (s/veh)	78.4	5.0	48.0	0.2	12.7	18.5	68.3	15.5	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.4	5.0	48.0	0.2	12.7	18.5	68.3	15.5	2.9
Queue Length 50th (ft)	187	0	10	0	13	300	3	111	0
Queue Length 95th (ft)	#297	39	29	0	58	#965	14	245	56
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	270	671	288	416	643	1307	140	2213	1069
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.29	0.04	0.04	0.08	0.59	0.02	0.25	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	7	175	9	2	16	49	687	7	3	502	256
Future Volume (vph)	176	7	175	9	2	16	49	687	7	3	502	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1757	1577		1737	1547	1786	1878		1771	3541	1545
Flt Permitted		0.73	1.00		0.79	1.00	0.39	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1337	1577		1428	1547	725	1878		1771	3541	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	193	8	192	10	2	18	54	763	8	3	558	284
RTOR Reduction (vph)	0	0	143	0	0	15	0	0	0	0	0	111
Lane Group Flow (vph)	0	201	49	0	12	3	54	771	0	3	558	173
Confl. Peds. (#/hr)	3					3	6		1	1		6
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		27.1	34.4		27.1	27.1	96.0	96.0		1.3	90.0	90.0
Effective Green, g (s)		29.1	38.4		29.1	29.1	98.0	98.0		3.3	92.0	92.0
Actuated g/C Ratio		0.19	0.25		0.19	0.19	0.65	0.65		0.02	0.61	0.61
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		257	401		275	298	535	1218		38	2157	941
v/s Ratio Prot			0.01				0.01	c0.41		0.00	c0.16	
v/s Ratio Perm		c0.15	0.02		0.01	0.00	0.06					0.11
v/c Ratio		0.78	0.12		0.04	0.01	0.10	0.63		0.08	0.26	0.18
Uniform Delay, d1		57.9	43.3		49.6	49.3	10.1	15.8		72.4	13.7	13.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.3	0.1		0.1	0.0	0.1	2.5		0.9	0.3	0.4
Delay (s)		72.2	43.5		49.7	49.3	10.1	18.3		73.3	14.0	13.4
Level of Service		E	D		D	D	B	B		E	B	B
Approach Delay (s/veh)		58.2			49.5			17.8			14.0	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

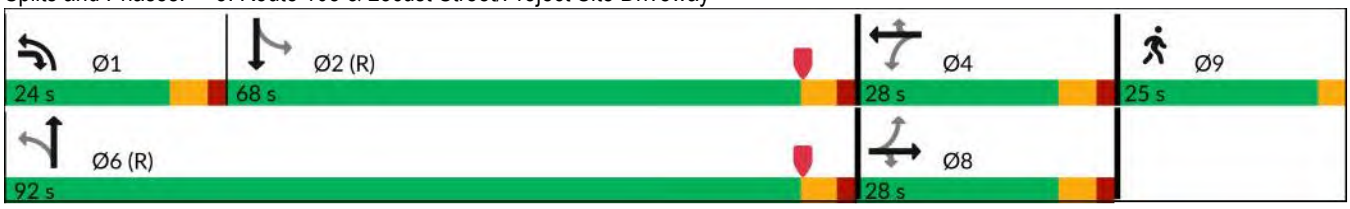
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	260	11	0	5	241	611	6	10	446	74
Future Volume (vph)	23	0	260	11	0	5	241	611	6	10	446	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.999			0.979	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1815	1624	1693	1964	0	1753	1863	0
Flt Permitted		0.750			0.740		0.355			0.421		
Satd. Flow (perm)	0	1326	1507	0	1413	1586	632	1964	0	777	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			289			90		1			7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	26	0	289	12	0	6	251	636	6	11	490	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	289	0	12	6	251	642	0	11	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.5	27.9		10.3	10.3	126.4	128.0		103.3	103.3	
Actuated g/C Ratio		0.07	0.19		0.07	0.07	0.87	0.88		0.71	0.71	
v/c Ratio		0.27	0.55		0.12	0.03	0.36	0.37		0.02	0.43	
Control Delay (s/veh)		69.8	7.5		64.2	0.2	4.8	4.6		12.8	13.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.3		0.0	8.8	
Total Delay (s/veh)		69.8	7.5		64.2	0.2	4.8	5.0		12.8	22.2	
LOS		E	A		E	A	A	A		B	C	
Approach Delay (s/veh)		12.7			42.9			4.9			22.0	
Approach LOS		B			D			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 12.2		Intersection LOS: B	
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	289	12	6	251	642	11	571
v/c Ratio	0.27	0.55	0.12	0.03	0.36	0.37	0.02	0.43
Control Delay (s/veh)	69.8	7.5	64.2	0.2	4.8	4.6	12.8	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	8.8
Total Delay (s/veh)	69.8	7.5	64.2	0.2	4.8	5.0	12.8	22.2
Queue Length 50th (ft)	24	0	11	0	25	81	3	207
Queue Length 95th (ft)	56	53	32	0	122	355	16	497
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	219	539	233	337	704	1734	554	1329
Starvation Cap Reductn	0	0	0	0	0	534	0	715
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.54	0.05	0.02	0.36	0.54	0.02	0.93

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	260	11	0	5	241	611	6	10	446	74
Future Volume (vph)	23	0	260	11	0	5	241	611	6	10	446	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1670	1507		1815	1577	1693	1963		1753	1863	
Flt Permitted		0.75	1.00		0.74	1.00	0.35	1.00		0.42	1.00	
Satd. Flow (perm)		1318	1507		1414	1577	632	1963		777	1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	26	0	289	12	0	6	251	636	6	11	490	81
RTOR Reduction (vph)	0	0	235	0	0	6	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	54	0	12	0	251	642	0	11	569	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		6.0	23.1		6.0	6.0	119.6	119.6		96.5	96.5	
Effective Green, g (s)		8.0	27.1		8.0	8.0	121.6	121.6		98.5	98.5	
Actuated g/C Ratio		0.06	0.19		0.06	0.06	0.84	0.84		0.68	0.68	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		72	281		78	87	669	1646		527	1265	
v/s Ratio Prot			0.03				0.05	c0.33			c0.31	
v/s Ratio Perm		c0.02	0.01		0.01	0.00	0.26			0.01		
v/c Ratio		0.36	0.19		0.15	0.00	0.38	0.39		0.02	0.45	
Uniform Delay, d1		66.0	49.7		65.3	64.7	4.6	2.8		7.6	10.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.3		0.9	0.0	0.4	0.7		0.1	1.2	
Delay (s)		69.1	50.1		66.2	64.8	4.9	3.5		7.6	11.9	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		51.6			65.7			3.9			11.8	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

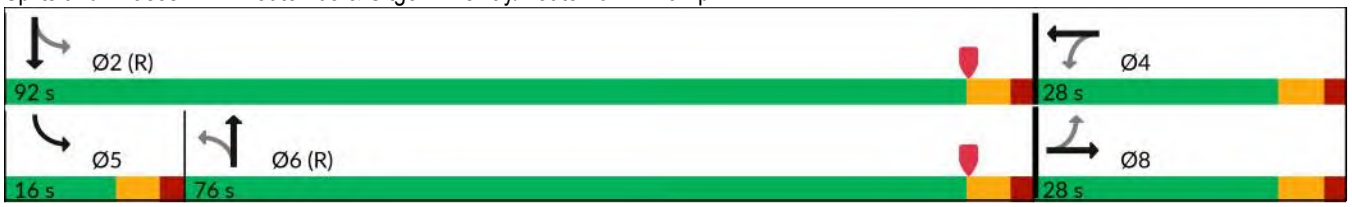


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	90	9	144	2	438	199	145	435	15
Future Volume (vph)	0	5	5	90	9	144	2	438	199	145	435	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.932			0.920			0.958			0.995	
Flt Protected					0.982					0.950		
Satd. Flow (prot)	0	1594	0	0	1717	0	0	1793	0	1771	1917	0
Flt Permitted					0.873			0.999		0.324		
Satd. Flow (perm)	0	1594	0	0	1526	0	0	1791	0	604	1917	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			54			34			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	6	6	99	10	158	2	481	219	161	483	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	267	0	0	702	0	161	500	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		23.2			23.2			74.1		88.8	88.8	
Actuated g/C Ratio		0.19			0.19			0.62		0.74	0.74	
v/c Ratio		0.04			0.79			0.63		0.29	0.35	
Control Delay (s/veh)		27.3			53.3			17.6		6.3	6.7	
Queue Delay		0.0			0.0			52.5		0.0	0.0	
Total Delay (s/veh)		27.3			53.3			70.1		6.3	6.7	
LOS		C			D			E		A	A	
Approach Delay (s/veh)		27.3			53.3			70.1			6.6	
Approach LOS		C			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 41.5		Intersection LOS: D	
Intersection Capacity Utilization 90.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	12	267	702	161	500
v/c Ratio	0.04	0.79	0.63	0.29	0.35
Control Delay (s/veh)	27.3	53.3	17.6	6.3	6.7
Queue Delay	0.0	0.0	52.5	0.0	0.0
Total Delay (s/veh)	27.3	53.3	70.1	6.3	6.7
Queue Length 50th (ft)	4	157	318	33	126
Queue Length 95th (ft)	21	#278	455	53	173
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	340	364	1135	563	1439
Starvation Cap Reductn	0	0	528	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.73	1.16	0.29	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	90	9	144	2	438	199	145	435	15
Future Volume (vph)	0	5	5	90	9	144	2	438	199	145	435	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			0.92			0.96		1.00	0.99	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1595			1716			1792		1771	1917	
Flt Permitted		1.00			0.87			1.00		0.32	1.00	
Satd. Flow (perm)		1595			1526			1791		603	1917	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	6	6	99	10	158	2	481	219	161	483	17
RTOR Reduction (vph)	0	5	0	0	44	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	223	0	0	689	0	161	499	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		21.2			21.2			72.1		86.8	86.8	
Effective Green, g (s)		23.2			23.2			74.1		88.8	88.8	
Actuated g/C Ratio		0.19			0.19			0.62		0.74	0.74	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		308			295			1105		550	1418	
v/s Ratio Prot		0.00								0.03	c0.26	
v/s Ratio Perm					c0.15			c0.38		0.19		
v/c Ratio		0.02			0.76			0.62		0.29	0.35	
Uniform Delay, d1		39.2			45.7			14.3		6.5	5.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			10.6			2.7		0.3	0.7	
Delay (s)		39.2			56.3			16.9		6.8	6.2	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		39.2			56.3			16.9			6.3	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year No-Build Weekday Morning Peak Hour

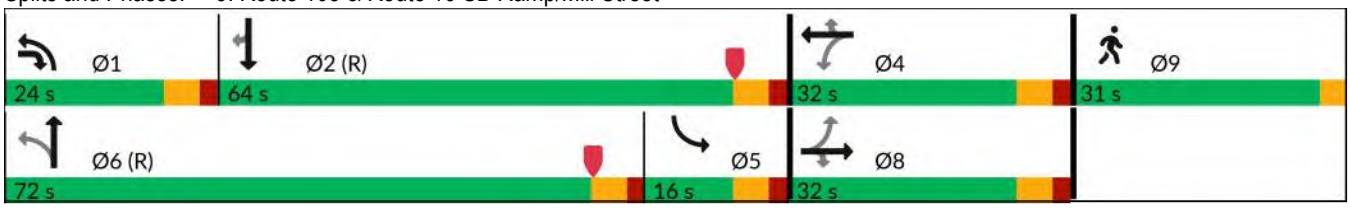
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	10	414	11	21	7	74	919	7	5	600	311
Future Volume (vph)	212	10	414	11	21	7	74	919	7	5	600	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98	1.00					0.98
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.954			0.983		0.950			0.950		
Satd. Flow (prot)	0	1752	1561	0	1727	1544	1752	1843	0	1736	3473	1554
Flt Permitted		0.710			0.881		0.327			0.950		
Satd. Flow (perm)	0	1301	1561	0	1547	1509	603	1843	0	1736	3473	1519
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			460			130						327
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	236	11	460	12	23	8	82	1021	8	5	632	327
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	247	460	0	35	8	82	1029	0	5	632	327
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		38.6	52.7		38.6	38.6	95.6	95.6		8.2	83.3	83.3
Actuated g/C Ratio		0.26	0.35		0.26	0.26	0.63	0.63		0.05	0.55	0.55
v/c Ratio		0.74	0.55		0.09	0.02	0.18	0.88		0.05	0.33	0.33
Control Delay (s/veh)		66.2	4.6		44.9	0.0	14.8	34.3		68.6	20.9	3.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		66.2	4.6		44.9	0.0	14.8	34.3		68.6	20.9	3.4
LOS		E	A		D	A	B	C		E	C	A
Approach Delay (s/veh)		26.1			36.6			32.9			15.2	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 25.2		Intersection LOS: C	
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	247	460	35	8	82	1029	5	632	327
v/c Ratio	0.74	0.55	0.09	0.02	0.18	0.88	0.05	0.33	0.33
Control Delay (s/veh)	66.2	4.6	44.9	0.0	14.8	34.3	68.6	20.9	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.2	4.6	44.9	0.0	14.8	34.3	68.6	20.9	3.4
Queue Length 50th (ft)	221	0	26	0	26	693	5	160	0
Queue Length 95th (ft)	#415	52	63	0	81	#1518	20	292	61
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	332	910	394	482	533	1166	137	1915	984
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.51	0.09	0.02	0.15	0.88	0.04	0.33	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	10	414	11	21	7	74	919	7	5	600	311
Future Volume (vph)	212	10	414	11	21	7	74	919	7	5	600	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750	1561		1727	1511	1752	1843		1736	3473	1520
Flt Permitted		0.71	1.00		0.88	1.00	0.33	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1302	1561		1548	1511	604	1843		1736	3473	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	236	11	460	12	23	8	82	1021	8	5	632	327
RTOR Reduction (vph)	0	0	309	0	0	6	0	0	0	0	0	152
Lane Group Flow (vph)	0	247	151	0	35	2	82	1029	0	5	632	175
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		36.6	45.6		36.6	36.6	86.4	86.4		1.4	78.8	78.8
Effective Green, g (s)		38.6	49.6		38.6	38.6	88.4	88.4		3.4	80.8	80.8
Actuated g/C Ratio		0.26	0.33		0.26	0.26	0.59	0.59		0.02	0.54	0.54
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		332	512		395	386	437	1078		39	1858	813
v/s Ratio Prot			0.02				0.01	c0.56		0.00	c0.18	
v/s Ratio Perm		c0.19	0.08		0.02	0.00	0.10					0.12
v/c Ratio		0.74	0.30		0.09	0.01	0.19	0.95		0.13	0.34	0.22
Uniform Delay, d1		51.7	37.7		42.8	41.9	14.6	29.4		72.3	19.9	18.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.7	0.3		0.1	0.0	0.2	18.4		1.5	0.5	0.6
Delay (s)		60.4	38.0		42.9	41.9	14.8	47.9		73.8	20.4	19.0
Level of Service		E	D		D	D	B	D		E	C	B
Approach Delay (s/veh)		45.8			42.7			45.4			20.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

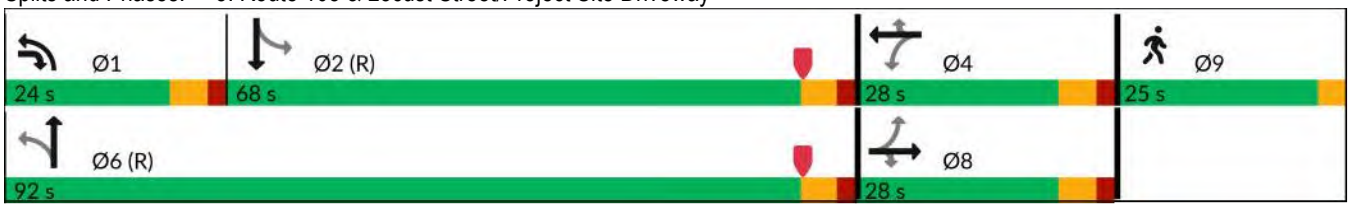
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1	231	0	0	1	253	823	3	2	567	51
Future Volume (vph)	16	1	231	0	0	1	253	823	3	2	567	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850					0.988	
Flt Protected		0.955					0.950			0.950		
Satd. Flow (prot)	0	1644	1463	0	1910	1624	1660	1928	0	1719	1846	0
Flt Permitted		0.737					0.286			0.326		
Satd. Flow (perm)	0	1269	1463	0	1910	1624	500	1928	0	590	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			257			353					4	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	18	1	257	0	0	1	281	914	3	2	603	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	257	0	0	1	281	917	0	2	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.7	33.8			9.5	127.1	128.7		97.4	97.4	
Actuated g/C Ratio		0.07	0.23			0.07	0.88	0.89		0.67	0.67	
v/c Ratio		0.23	0.48			0.00	0.44	0.54		0.01	0.53	
Control Delay (s/veh)		69.8	6.1			0.0	5.3	6.2		17.0	18.7	
Queue Delay		0.0	0.0			0.0	0.0	0.6		0.0	28.2	
Total Delay (s/veh)		69.8	6.1			0.0	5.3	6.8		17.0	46.9	
LOS		E	A			A	A	A		B	D	
Approach Delay (s/veh)		10.4						6.4			46.8	
Approach LOS		B						A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 19.4		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	257	1	281	917	2	657
v/c Ratio	0.23	0.48	0.00	0.44	0.54	0.01	0.53
Control Delay (s/veh)	69.8	6.1	0.0	5.3	6.2	17.0	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0	28.2
Total Delay (s/veh)	69.8	6.1	0.0	5.3	6.8	17.0	46.9
Queue Length 50th (ft)	17	0	0	27	140	1	296
Queue Length 95th (ft)	46	45	0	133	628	7	697
Internal Link Dist (ft)	540				415		133
Turn Bay Length (ft)		275		170		85	
Base Capacity (vph)	210	540	563	646	1711	396	1241
Starvation Cap Reductn	0	0	0	0	402	0	605
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.48	0.00	0.43	0.70	0.01	1.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1	231	0	0	1	253	823	3	2	567	51
Future Volume (vph)	16	1	231	0	0	1	253	823	3	2	567	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85			0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00			1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644	1463			1624	1660	1927		1719	1846	
Flt Permitted		0.74	1.00			1.00	0.29	1.00		0.33	1.00	
Satd. Flow (perm)		1269	1463			1624	499	1927		589	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	18	1	257	0	0	1	281	914	3	2	603	54
RTOR Reduction (vph)	0	0	199	0	0	1	0	0	0	0	1	0
Lane Group Flow (vph)	0	19	58	0	0	0	281	917	0	2	656	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov			Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		5.3	29.0			5.3	120.3	120.3		90.6	90.6	
Effective Green, g (s)		7.3	33.0			7.3	122.3	122.3		92.6	92.6	
Actuated g/C Ratio		0.05	0.23			0.05	0.84	0.84		0.64	0.64	
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		63	332			81	626	1625		376	1178	
v/s Ratio Prot			0.03				0.08	c0.48			0.36	
v/s Ratio Perm		c0.01	0.01			0.00	0.30			0.00		
v/c Ratio		0.30	0.18			0.00	0.45	0.56		0.01	0.56	
Uniform Delay, d1		66.4	45.1			65.4	7.2	3.4		9.5	14.7	
Progression Factor		1.00	1.00			1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7	0.3			0.0	0.5	1.4		0.0	1.9	
Delay (s)		69.1	45.3			65.4	7.8	4.8		9.5	16.6	
Level of Service		E	D			E	A	A		A	B	
Approach Delay (s/veh)		47.0			65.4			5.5			16.6	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

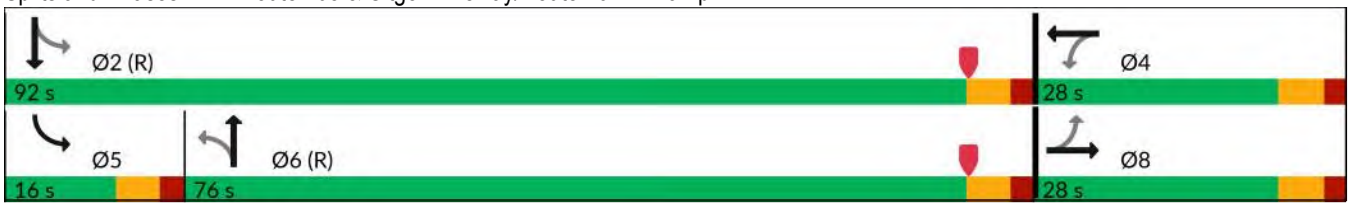


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	97	3	110	1	530	309	135	514	9
Future Volume (vph)	0	0	9	97	3	110	1	530	309	135	514	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.865			0.929			0.950			0.997	
Flt Protected					0.977					0.950		
Satd. Flow (prot)	0	1479	0	0	1742	0	0	1710	0	1719	1866	0
Flt Permitted					0.847					0.257		
Satd. Flow (perm)	0	1479	0	0	1510	0	0	1710	0	465	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		397			41			44			2	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	0	10	108	3	122	1	582	340	148	565	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	10	0	0	233	0	0	923	0	148	575	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		21.0			21.0			76.6		91.0	91.0	
Actuated g/C Ratio		0.18			0.18			0.64		0.76	0.76	
v/c Ratio		0.02			0.78			0.83		0.32	0.41	
Control Delay (s/veh)		0.0			57.0			25.5		6.2	6.4	
Queue Delay		0.0			0.0			49.7		0.0	0.0	
Total Delay (s/veh)		0.0			57.0			75.1		6.2	6.4	
LOS		A			E			E		A	A	
Approach Delay (s/veh)					57.0			75.1			6.4	
Approach LOS					E			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 46.2		Intersection LOS: D	
Intersection Capacity Utilization 103.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	10	233	923	148	575
v/c Ratio	0.02	0.78	0.83	0.32	0.41
Control Delay (s/veh)	0.0	57.0	25.5	6.2	6.4
Queue Delay	0.0	0.0	49.7	0.0	0.0
Total Delay (s/veh)	0.0	57.0	75.1	6.2	6.4
Queue Length 50th (ft)	0	141	520	28	144
Queue Length 95th (ft)	0	233	#881	48	208
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	613	334	1107	478	1415
Starvation Cap Reductn	0	0	378	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.70	1.27	0.31	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	97	3	110	1	530	309	135	514	9
Future Volume (vph)	0	0	9	97	3	110	1	530	309	135	514	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.87			0.93			0.95		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1479			1743			1710		1719	1867	
Flt Permitted		1.00			0.85			1.00		0.26	1.00	
Satd. Flow (perm)		1479			1510			1710		465	1867	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	10	108	3	122	1	582	340	148	565	10
RTOR Reduction (vph)	0	8	0	0	34	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	199	0	0	907	0	148	575	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		19.0			19.0			74.6		89.0	89.0	
Effective Green, g (s)		21.0			21.0			76.6		91.0	91.0	
Actuated g/C Ratio		0.18			0.18			0.64		0.76	0.76	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		258			264			1091		461	1415	
v/s Ratio Prot		0.00								0.03	c0.31	
v/s Ratio Perm					c0.13			0.53		0.22		
v/c Ratio		0.01			0.75			0.83		0.32	0.41	
Uniform Delay, d1		40.9			47.0			16.7		6.7	5.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			11.6			7.4		0.4	0.9	
Delay (s)		40.9			58.6			24.1		7.1	5.9	
Level of Service		D			E			C		A	A	
Approach Delay (s/veh)		40.9			58.6			24.1			6.2	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year No-Build Weekday Evening Peak Hour



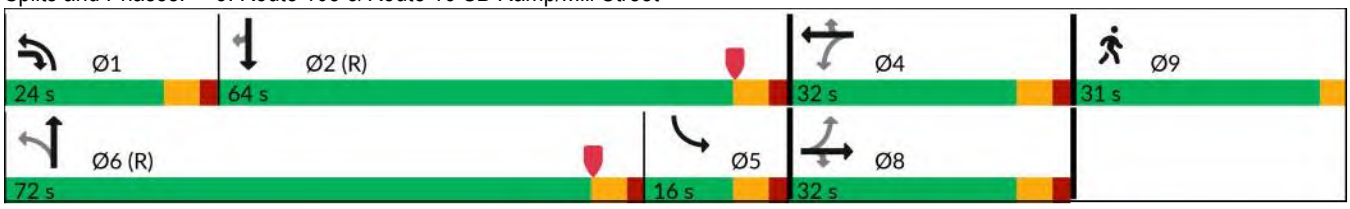
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	5	308	3	3	13	54	875	10	8	745	299
Future Volume (vph)	208	5	308	3	3	13	54	875	10	8	745	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98		1.00		1.00		
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.976		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1766	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.728			0.897		0.259			0.950		
Satd. Flow (perm)	0	1347	1577	0	1623	1555	487	1877	0	1768	3541	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			342			130						329
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	231	6	342	3	3	14	60	972	11	9	819	329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	237	342	0	6	14	60	983	0	9	819	329
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		34.0	47.0		34.0	34.0	100.0	100.0		8.5	89.0	89.0
Actuated g/C Ratio		0.23	0.31		0.23	0.23	0.66	0.66		0.06	0.59	0.59
v/c Ratio		0.78	0.47		0.02	0.03	0.15	0.79		0.09	0.39	0.31
Control Delay (s/veh)		72.9	4.7		45.8	0.2	14.0	26.3		69.0	19.4	3.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		72.9	4.7		45.8	0.2	14.0	26.3		69.0	19.4	3.0
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		32.6			13.8			25.6			15.1	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 22.6		Intersection LOS: C	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	237	342	6	14	60	983	9	819	329
v/c Ratio	0.78	0.47	0.02	0.03	0.15	0.79	0.09	0.39	0.31
Control Delay (s/veh)	72.9	4.7	45.8	0.2	14.0	26.3	69.0	19.4	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.9	4.7	45.8	0.2	14.0	26.3	69.0	19.4	3.0
Queue Length 50th (ft)	215	0	5	0	17	564	9	204	0
Queue Length 95th (ft)	#390	49	19	0	63	#1408	29	381	59
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	303	809	365	450	494	1243	140	2086	1068
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.42	0.02	0.03	0.12	0.79	0.06	0.39	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	5	308	3	3	13	54	875	10	8	745	299
Future Volume (vph)	208	5	308	3	3	13	54	875	10	8	745	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765	1577		1765	1555	1787	1878		1771	3541	1584
Flt Permitted		0.73	1.00		0.90	1.00	0.26	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1347	1577		1623	1555	487	1878		1771	3541	1584
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	231	6	342	3	3	14	60	972	11	9	819	329
RTOR Reduction (vph)	0	0	243	0	0	11	0	0	0	0	0	140
Lane Group Flow (vph)	0	237	99	0	6	3	60	983	0	9	819	189
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		32.0	39.8		32.0	32.0	90.8	90.8		1.6	84.6	84.6
Effective Green, g (s)		34.0	43.8		34.0	34.0	92.8	92.8		3.6	86.6	86.6
Actuated g/C Ratio		0.23	0.29		0.23	0.23	0.61	0.61		0.02	0.57	0.57
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		303	457		365	350	383	1154		42	2030	908
v/s Ratio Prot			0.01				0.01	c0.52		0.01	c0.23	
v/s Ratio Perm		c0.18	0.05		0.00	0.00	0.09					0.12
v/c Ratio		0.78	0.22		0.02	0.01	0.16	0.85		0.21	0.40	0.21
Uniform Delay, d1		55.0	40.6		45.5	45.4	13.1	23.5		72.3	17.9	15.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		12.4	0.2		0.0	0.0	0.2	8.0		2.6	0.6	0.5
Delay (s)		67.4	40.8		45.5	45.4	13.3	31.5		74.9	18.5	16.1
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		51.7			45.5			30.5			18.2	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

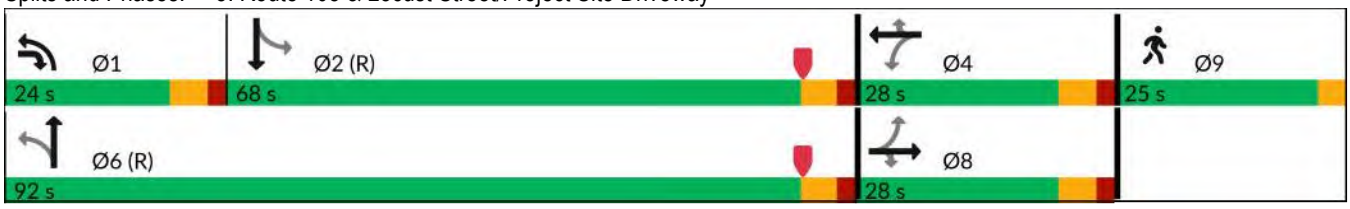
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	317	2	3	3	234	851	0	1	738	118
Future Volume (vph)	40	1	317	2	3	3	234	851	0	1	738	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00			1.00	1.00	
Frt			0.850			0.850					0.979	
Flt Protected		0.953			0.980		0.950			0.950		
Satd. Flow (prot)	0	1690	1507	0	1872	1624	1693	1966	0	1736	1846	0
Flt Permitted		0.728			0.899		0.117			0.338		
Satd. Flow (perm)	0	1291	1507	0	1717	1624	208	1966	0	617	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			337			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							1			3		1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	43	1	337	2	3	3	241	877	0	1	820	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	337	0	5	3	241	877	0	1	951	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.2	36.0		12.2	12.2	122.1	122.9		95.2	95.2	
Actuated g/C Ratio		0.08	0.25		0.08	0.08	0.84	0.85		0.66	0.66	
v/c Ratio		0.41	0.54		0.03	0.01	0.59	0.53		0.00	0.78	
Control Delay (s/veh)		72.9	5.9		59.0	0.0	19.7	7.3		17.0	26.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.7		0.0	50.1	
Total Delay (s/veh)		72.9	5.9		59.0	0.0	19.7	7.9		17.0	77.0	
LOS		E	A		E	A	B	A		B	E	
Approach Delay (s/veh)		13.6			36.9			10.5			77.0	
Approach LOS		B			D			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 36.8		Intersection LOS: D	
Intersection Capacity Utilization 79.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	337	5	3	241	877	1	951
v/c Ratio	0.41	0.54	0.03	0.01	0.59	0.53	0.00	0.78
Control Delay (s/veh)	72.9	5.9	59.0	0.0	19.7	7.3	17.0	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.7	0.0	50.1
Total Delay (s/veh)	72.9	5.9	59.0	0.0	19.7	7.9	17.0	77.0
Queue Length 50th (ft)	40	0	4	0	55	156	0	568
Queue Length 95th (ft)	80	50	18	0	197	628	4	#1325
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	213	634	284	343	419	1667	405	1214
Starvation Cap Reductn	0	0	0	0	0	419	0	445
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.53	0.02	0.01	0.58	0.70	0.00	1.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	317	2	3	3	234	851	0	1	738	118
Future Volume (vph)	40	1	317	2	3	3	234	851	0	1	738	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1691	1507		1873	1624	1693	1966		1735	1846	
Flt Permitted		0.73	1.00		0.90	1.00	0.12	1.00		0.34	1.00	
Satd. Flow (perm)		1291	1507		1717	1624	209	1966		618	1846	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Adj. Flow (vph)	43	1	337	2	3	3	241	877	0	1	820	131
RTOR Reduction (vph)	0	0	258	0	0	3	0	0	0	0	3	0
Lane Group Flow (vph)	0	44	79	0	5	0	241	877	0	1	948	0
Confl. Peds. (#/hr)							1			3		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		9.1	30.1		9.1	9.1	116.5	116.5		89.5	89.5	
Effective Green, g (s)		11.1	34.1		11.1	11.1	118.5	118.5		91.5	91.5	
Actuated g/C Ratio		0.08	0.24		0.08	0.08	0.82	0.82		0.63	0.63	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		98	354		131	124	406	1606		389	1164	
v/s Ratio Prot			0.04				c0.09	0.45			c0.51	
v/s Ratio Perm		c0.03	0.02		0.00	0.00	0.39			0.00		
v/c Ratio		0.45	0.22		0.04	0.00	0.59	0.55		0.00	0.81	
Uniform Delay, d1		64.0	44.8		62.0	61.8	26.9	4.4		9.9	20.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2	0.3		0.1	0.0	2.3	1.3		0.0	6.3	
Delay (s)		67.3	45.1		62.1	61.8	29.2	5.7		9.9	26.6	
Level of Service		E	D		E	E	C	A		A	C	
Approach Delay (s/veh)		47.7			62.0			10.8			26.6	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

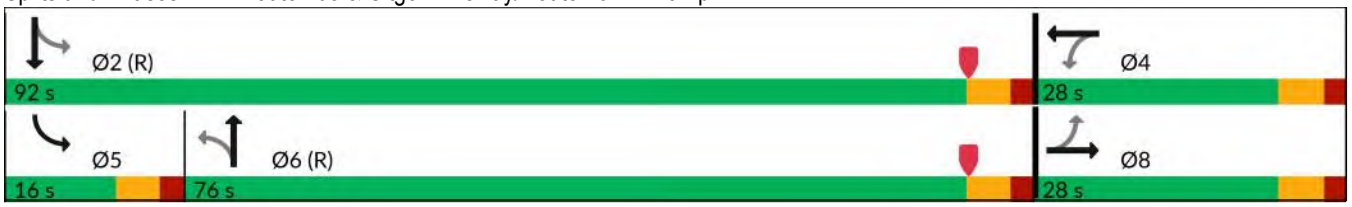
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	207	15	148	1	543	350	190	639	19
Future Volume (vph)	0	2	11	207	15	148	1	543	350	190	639	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.884			0.946			0.947			0.996	
Flt Protected					0.973					0.950		
Satd. Flow (prot)	0	1512	0	0	1749	0	0	1755	0	1771	1920	0
Flt Permitted					0.819					0.219		
Satd. Flow (perm)	0	1512	0	0	1472	0	0	1755	0	408	1920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			25			48			3	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	2	12	230	17	164	1	603	389	211	710	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	411	0	0	993	0	211	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		25.6			25.6			71.0		86.4	86.4	
Actuated g/C Ratio		0.21			0.21			0.59		0.72	0.72	
v/c Ratio		0.04			1.23			0.94		0.50	0.53	
Control Delay (s/veh)		20.7			167.1			38.4		9.3	9.0	
Queue Delay		0.0			0.0			46.7		0.0	0.0	
Total Delay (s/veh)		20.7			167.1			85.1		9.3	9.0	
LOS		C			F			F		A	A	
Approach Delay (s/veh)		20.7			167.1			85.1			9.1	
Approach LOS		C			F			F			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay (s/veh): 68.7		Intersection LOS: E	
Intersection Capacity Utilization 122.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	14	411	993	211	731
v/c Ratio	0.04	1.23	0.94	0.50	0.53
Control Delay (s/veh)	20.7	167.1	38.4	9.3	9.0
Queue Delay	0.0	0.0	46.7	0.0	0.0
Total Delay (s/veh)	20.7	167.1	85.1	9.3	9.0
Queue Length 50th (ft)	1	~395	630	43	212
Queue Length 95th (ft)	20	#598	#974	67	291
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	331	333	1072	430	1408
Starvation Cap Reductn	0	0	354	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	1.23	1.38	0.49	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	207	15	148	1	543	350	190	639	19
Future Volume (vph)	0	2	11	207	15	148	1	543	350	190	639	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.88			0.95			0.95		1.00	1.00	
Flt Protected		1.00			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1512			1749			1755		1771	1919	
Flt Permitted		1.00			0.82			1.00		0.22	1.00	
Satd. Flow (perm)		1512			1472			1754		408	1919	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	2	12	230	17	164	1	603	389	211	710	21
RTOR Reduction (vph)	0	9	0	0	20	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	5	0	0	391	0	0	973	0	211	730	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.6			23.6			69.0		84.4	84.4	
Effective Green, g (s)		25.6			25.6			71.0		86.4	86.4	
Actuated g/C Ratio		0.21			0.21			0.59		0.72	0.72	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		322			314			1037		423	1381	
v/s Ratio Prot		0.00								0.05	c0.38	
v/s Ratio Perm					c0.27			c0.55		0.31		
v/c Ratio		0.01			1.25			0.94		0.50	0.53	
Uniform Delay, d1		37.2			47.2			22.5		10.0	7.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			134.7			16.6		0.9	1.5	
Delay (s)		37.3			181.9			39.1		11.0	9.0	
Level of Service		D			F			D		B	A	
Approach Delay (s/veh)		37.3			181.9			39.1			9.5	
Approach LOS		D			F			D			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year No-Build Saturday Midday Peak Hour

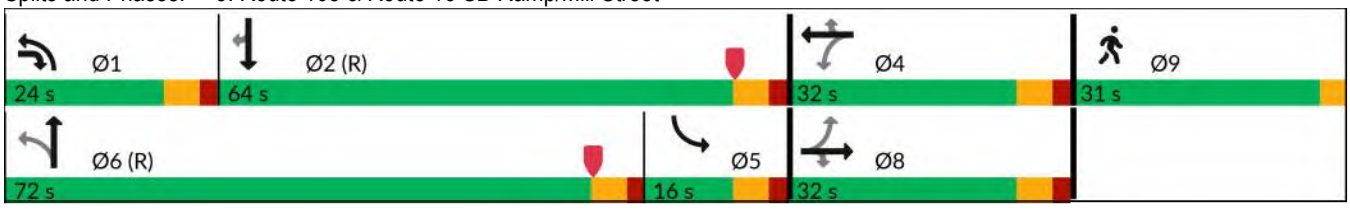
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	7	193	9	2	16	55	755	7	3	553	275
Future Volume (vph)	191	7	193	9	2	16	55	755	7	3	553	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99				0.97	1.00	1.00		1.00		0.97
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.954			0.960		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1737	1591	1787	1879	0	1771	3541	1584
Flt Permitted		0.725			0.789		0.354			0.950		
Satd. Flow (perm)	0	1334	1577	0	1427	1546	664	1879	0	1767	3541	1541
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			212			130						306
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	3					3	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	210	8	212	10	2	18	61	839	8	3	614	306
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	212	0	12	18	61	847	0	3	614	306
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		31.4	44.2		31.4	31.4	102.8	102.8		8.0	91.8	91.8
Actuated g/C Ratio		0.21	0.29		0.21	0.21	0.68	0.68		0.05	0.61	0.61
v/c Ratio		0.79	0.35		0.04	0.04	0.12	0.66		0.03	0.29	0.29
Control Delay (s/veh)		76.1	4.7		46.7	0.2	13.1	21.0		68.3	16.9	3.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		76.1	4.7		46.7	0.2	13.1	21.0		68.3	16.9	3.0
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		40.9			18.8			20.4			12.5	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 21.0		Intersection LOS: C	
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	218	212	12	18	61	847	3	614	306
v/c Ratio	0.79	0.35	0.04	0.04	0.12	0.66	0.03	0.29	0.29
Control Delay (s/veh)	76.1	4.7	46.7	0.2	13.1	21.0	68.3	16.9	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.1	4.7	46.7	0.2	13.1	21.0	68.3	16.9	3.0
Queue Length 50th (ft)	201	0	9	0	16	388	3	133	0
Queue Length 95th (ft)	#336	41	29	0	64	#1123	14	274	58
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	284	705	304	431	600	1279	140	2152	1056
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.30	0.04	0.04	0.10	0.66	0.02	0.29	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	7	193	9	2	16	55	755	7	3	553	275
Future Volume (vph)	191	7	193	9	2	16	55	755	7	3	553	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1758	1577		1737	1548	1786	1878		1771	3541	1545
Flt Permitted		0.73	1.00		0.79	1.00	0.35	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1336	1577		1427	1548	665	1878		1771	3541	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	210	8	212	10	2	18	61	839	8	3	614	306
RTOR Reduction (vph)	0	0	154	0	0	14	0	0	0	0	0	125
Lane Group Flow (vph)	0	218	58	0	12	4	61	847	0	3	614	181
Confl. Peds. (#/hr)	3					3	6		1	1		6
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		29.4	37.0		29.4	29.4	93.7	93.7		1.3	87.4	87.4
Effective Green, g (s)		31.4	41.0		31.4	31.4	95.7	95.7		3.3	89.4	89.4
Actuated g/C Ratio		0.21	0.27		0.21	0.21	0.63	0.63		0.02	0.59	0.59
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		277	428		296	321	492	1190		38	2096	914
v/s Ratio Prot			0.01				0.01	c0.45		0.00	c0.17	
v/s Ratio Perm		c0.16	0.03		0.01	0.00	0.07					0.12
v/c Ratio		0.79	0.13		0.04	0.01	0.12	0.71		0.08	0.29	0.20
Uniform Delay, d1		56.6	41.6		47.8	47.5	11.1	18.4		72.4	15.2	14.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		13.7	0.1		0.1	0.0	0.1	3.6		0.9	0.4	0.5
Delay (s)		70.3	41.7		47.8	47.5	11.3	22.1		73.3	15.6	14.7
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		56.2			47.6			21.4			15.5	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

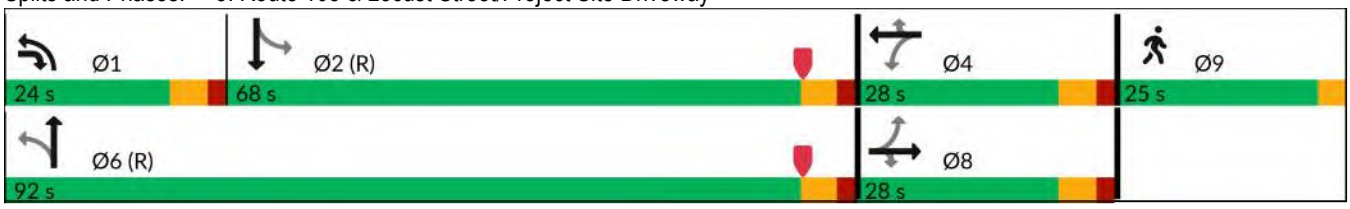
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	287	3	1	5	267	675	0	3	492	81
Future Volume (vph)	26	0	287	3	1	5	267	675	0	3	492	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98	1.00			1.00	1.00	
Frt			0.850			0.850					0.979	
Flt Protected		0.950			0.964		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1841	1624	1693	1966	0	1753	1863	0
Flt Permitted		0.755			0.788		0.305			0.398		
Satd. Flow (perm)	0	1335	1507	0	1505	1586	543	1966	0	734	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			319			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	29	0	319	3	1	6	278	703	0	3	541	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	319	0	4	6	278	703	0	3	630	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.7	32.8		10.4	10.4	126.2	127.8		98.4	98.4	
Actuated g/C Ratio		0.07	0.23		0.07	0.07	0.87	0.88		0.68	0.68	
v/c Ratio		0.30	0.54		0.04	0.03	0.42	0.41		0.01	0.50	
Control Delay (s/veh)		70.2	6.3		61.0	0.2	5.4	5.0		16.7	17.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.4		0.0	18.5	
Total Delay (s/veh)		70.2	6.3		61.0	0.2	5.4	5.4		16.7	36.1	
LOS		E	A		E	A	A	A		B	D	
Approach Delay (s/veh)		11.7			24.5			5.4			36.0	
Approach LOS		B			C			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 16.4		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	319	4	6	278	703	3	630
v/c Ratio	0.30	0.54	0.04	0.03	0.42	0.41	0.01	0.50
Control Delay (s/veh)	70.2	6.3	61.0	0.2	5.4	5.0	16.7	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	18.5
Total Delay (s/veh)	70.2	6.3	61.0	0.2	5.4	5.4	16.7	36.1
Queue Length 50th (ft)	26	0	4	0	29	96	1	268
Queue Length 95th (ft)	60	49	16	0	138	411	8	650
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	220	593	249	337	666	1732	497	1266
Starvation Cap Reductn	0	0	0	0	0	507	0	634
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.02	0.02	0.42	0.57	0.01	1.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	287	3	1	5	267	675	0	3	492	81
Future Volume (vph)	26	0	287	3	1	5	267	675	0	3	492	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1670	1507		1841	1577	1693	1966		1753	1863	
Flt Permitted		0.76	1.00		0.79	1.00	0.31	1.00		0.40	1.00	
Satd. Flow (perm)		1327	1507		1506	1577	544	1966		734	1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	29	0	319	3	1	6	278	703	0	3	541	89
RTOR Reduction (vph)	0	0	249	0	0	6	0	0	0	0	2	0
Lane Group Flow (vph)	0	29	70	0	4	0	278	703	0	3	628	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		6.2	28.0		6.2	6.2	119.4	119.4		91.6	91.6	
Effective Green, g (s)		8.2	32.0		8.2	8.2	121.4	121.4		93.6	93.6	
Actuated g/C Ratio		0.06	0.22		0.06	0.06	0.84	0.84		0.65	0.65	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		75	332		85	89	644	1646		473	1202	
v/s Ratio Prot			0.03				0.07	c0.36			c0.34	
v/s Ratio Perm		c0.02	0.01		0.00	0.00	0.29			0.00		
v/c Ratio		0.39	0.21		0.05	0.00	0.43	0.43		0.01	0.52	
Uniform Delay, d1		66.0	46.2		64.7	64.5	6.5	3.0		9.1	13.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.3	0.3		0.2	0.0	0.5	0.8		0.0	1.6	
Delay (s)		69.3	46.5		64.9	64.6	6.9	3.8		9.2	15.4	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		48.4			64.7			4.7			15.3	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

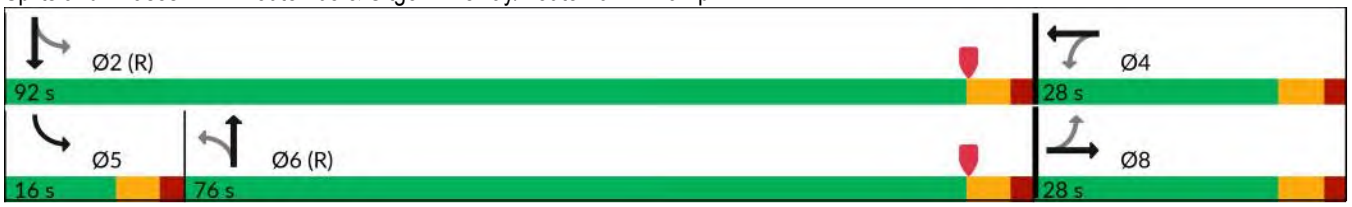
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	90	9	160	2	485	219	161	481	15
Future Volume (vph)	0	5	5	90	9	160	2	485	219	161	481	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.932			0.917			0.958			0.995	
Flt Protected					0.983					0.950		
Satd. Flow (prot)	0	1594	0	0	1713	0	0	1793	0	1771	1918	0
Flt Permitted					0.880			0.999		0.293		
Satd. Flow (perm)	0	1594	0	0	1533	0	0	1791	0	546	1918	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			61			34			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	6	6	99	10	176	2	533	241	179	534	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	285	0	0	776	0	179	551	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		23.9			23.9			73.0		88.1	88.1	
Actuated g/C Ratio		0.20			0.20			0.61		0.73	0.73	
v/c Ratio		0.04			0.81			0.70		0.35	0.39	
Control Delay (s/veh)		27.2			53.2			20.6		7.1	7.2	
Queue Delay		0.0			0.0			51.8		0.0	0.0	
Total Delay (s/veh)		27.2			53.2			72.4		7.1	7.2	
LOS		C			D			E		A	A	
Approach Delay (s/veh)		27.2			53.2			72.4			7.2	
Approach LOS		C			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 42.7		Intersection LOS: D	
Intersection Capacity Utilization 97.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	12	285	776	179	551
v/c Ratio	0.04	0.81	0.70	0.35	0.39
Control Delay (s/veh)	27.2	53.2	20.6	7.1	7.2
Queue Delay	0.0	0.0	51.8	0.0	0.0
Total Delay (s/veh)	27.2	53.2	72.4	7.1	7.2
Queue Length 50th (ft)	4	165	395	39	151
Queue Length 95th (ft)	21	#307	533	57	192
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	345	375	1128	524	1434
Starvation Cap Reductn	0	0	480	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.76	1.20	0.34	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	90	9	160	2	485	219	161	481	15
Future Volume (vph)	0	5	5	90	9	160	2	485	219	161	481	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			0.92			0.96		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1595			1712			1793		1771	1918	
Flt Permitted		1.00			0.88			1.00		0.29	1.00	
Satd. Flow (perm)		1595			1532			1792		546	1918	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	6	6	99	10	176	2	533	241	179	534	17
RTOR Reduction (vph)	0	5	0	0	49	0	0	13	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	236	0	0	763	0	179	550	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		21.9			21.9			71.1		86.1	86.1	
Effective Green, g (s)		23.9			23.9			73.1		88.1	88.1	
Actuated g/C Ratio		0.20			0.20			0.61		0.73	0.73	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		317			305			1091		513	1408	
v/s Ratio Prot		0.00								0.03	c0.29	
v/s Ratio Perm					c0.15			c0.43		0.22		
v/c Ratio		0.02			0.77			0.70		0.35	0.39	
Uniform Delay, d1		38.7			45.5			16.0		7.3	5.9	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			11.6			3.7		0.4	0.8	
Delay (s)		38.7			57.1			19.7		7.7	6.8	
Level of Service		D			E			B		A	A	
Approach Delay (s/veh)		38.7			57.1			19.7			7.0	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year Build Weekday Morning Peak Hour

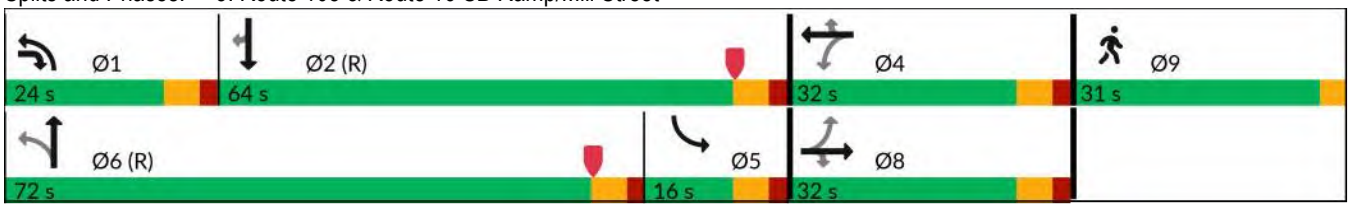
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	10	414	11	21	7	74	919	7	5	602	316
Future Volume (vph)	213	10	414	11	21	7	74	919	7	5	602	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98	1.00					0.98
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.954			0.983		0.950			0.950		
Satd. Flow (prot)	0	1752	1561	0	1727	1544	1752	1843	0	1736	3473	1554
Flt Permitted		0.710			0.881		0.326			0.950		
Satd. Flow (perm)	0	1301	1561	0	1547	1509	601	1843	0	1736	3473	1519
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			460			130						333
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	237	11	460	12	23	8	82	1021	8	5	634	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	248	460	0	35	8	82	1029	0	5	634	333
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		38.8	53.0		38.8	38.8	95.3	95.3		8.2	83.0	83.0
Actuated g/C Ratio		0.26	0.35		0.26	0.26	0.63	0.63		0.05	0.55	0.55
v/c Ratio		0.74	0.54		0.09	0.02	0.18	0.88		0.05	0.33	0.34
Control Delay (s/veh)		65.8	4.5		44.8	0.0	14.9	34.7		68.6	21.0	3.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		65.8	4.5		44.8	0.0	14.9	34.7		68.6	21.0	3.4
LOS		E	A		D	A	B	C		E	C	A
Approach Delay (s/veh)		26.0			36.5			33.2			15.2	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 25.3		Intersection LOS: C	
Intersection Capacity Utilization 82.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	248	460	35	8	82	1029	5	634	333
v/c Ratio	0.74	0.54	0.09	0.02	0.18	0.88	0.05	0.33	0.34
Control Delay (s/veh)	65.8	4.5	44.8	0.0	14.9	34.7	68.6	21.0	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.8	4.5	44.8	0.0	14.9	34.7	68.6	21.0	3.4
Queue Length 50th (ft)	221	0	26	0	26	698	5	162	0
Queue Length 95th (ft)	#417	52	63	0	81	#1518	20	293	61
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	334	912	397	484	532	1163	137	1909	985
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.50	0.09	0.02	0.15	0.88	0.04	0.33	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	10	414	11	21	7	74	919	7	5	602	316
Future Volume (vph)	213	10	414	11	21	7	74	919	7	5	602	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1750	1561		1727	1511	1752	1843		1736	3473	1520
Flt Permitted		0.71	1.00		0.88	1.00	0.33	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1301	1561		1548	1511	601	1843		1736	3473	1520
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	237	11	460	12	23	8	82	1021	8	5	634	333
RTOR Reduction (vph)	0	0	308	0	0	6	0	0	0	0	0	155
Lane Group Flow (vph)	0	248	152	0	35	2	82	1029	0	5	634	178
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		36.8	45.8		36.8	36.8	86.2	86.2		1.4	78.6	78.6
Effective Green, g (s)		38.8	49.8		38.8	38.8	88.2	88.2		3.4	80.6	80.6
Actuated g/C Ratio		0.26	0.33		0.26	0.26	0.58	0.58		0.02	0.53	0.53
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		334	514		397	388	434	1076		39	1853	811
v/s Ratio Prot			0.02				0.01	c0.56		0.00	c0.18	
v/s Ratio Perm		c0.19	0.08		0.02	0.00	0.10					0.12
v/c Ratio		0.74	0.30		0.09	0.01	0.19	0.96		0.13	0.34	0.22
Uniform Delay, d1		51.5	37.6		42.7	41.7	14.7	29.6		72.3	20.1	18.6
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.6	0.3		0.1	0.0	0.2	18.7		1.5	0.5	0.6
Delay (s)		60.1	37.9		42.7	41.7	14.9	48.3		73.8	20.6	19.2
Level of Service		E	D		D	D	B	D		E	C	B
Approach Delay (s/veh)		45.7			42.6			45.9			20.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

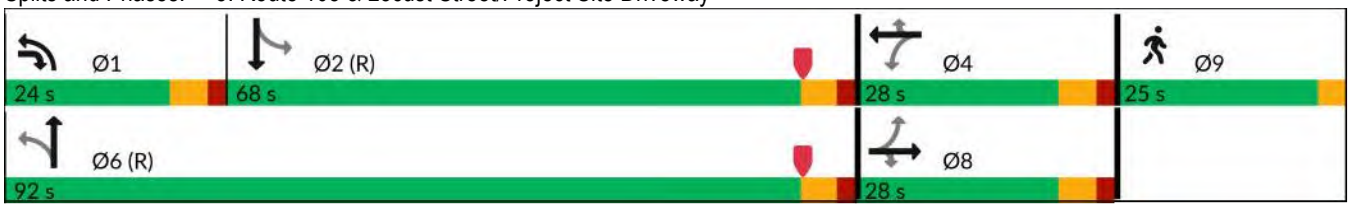
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	231	7	0	3	253	823	4	7	567	51
Future Volume (vph)	16	0	231	7	0	3	253	823	4	7	567	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt			0.850			0.850		0.999			0.988	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1636	1463	0	1815	1624	1660	1926	0	1719	1846	0
Flt Permitted		0.752			0.746		0.286			0.325		
Satd. Flow (perm)	0	1295	1463	0	1425	1624	500	1926	0	588	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			257			90					4	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	18	0	257	8	0	3	281	914	4	7	603	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	257	0	8	3	281	918	0	7	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		9.7	33.8		9.6	9.6	127.1	128.7		97.4	97.4	
Actuated g/C Ratio		0.07	0.23		0.07	0.07	0.88	0.89		0.67	0.67	
v/c Ratio		0.21	0.48		0.09	0.02	0.44	0.54		0.02	0.53	
Control Delay (s/veh)		68.8	6.0		64.1	0.0	5.3	6.3		16.7	18.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.6		0.0	28.2	
Total Delay (s/veh)		68.8	6.0		64.1	0.0	5.3	6.8		16.7	46.9	
LOS		E	A		E	A	A	A		B	D	
Approach Delay (s/veh)		10.1			46.6			6.5			46.6	
Approach LOS		B			D			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 19.6		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	257	8	3	281	918	7	657
v/c Ratio	0.21	0.48	0.09	0.02	0.44	0.54	0.02	0.53
Control Delay (s/veh)	68.8	6.0	64.1	0.0	5.3	6.3	16.7	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	28.2
Total Delay (s/veh)	68.8	6.0	64.1	0.0	5.3	6.8	16.7	46.9
Queue Length 50th (ft)	16	0	7	0	27	141	2	296
Queue Length 95th (ft)	44	45	25	0	134	633	14	699
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	214	540	235	343	646	1709	394	1240
Starvation Cap Reductn	0	0	0	0	0	400	0	604
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.48	0.03	0.01	0.43	0.70	0.02	1.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	231	7	0	3	253	823	4	7	567	51
Future Volume (vph)	16	0	231	7	0	3	253	823	4	7	567	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1636	1463		1815	1624	1660	1927		1719	1846	
Flt Permitted		0.75	1.00		0.75	1.00	0.29	1.00		0.33	1.00	
Satd. Flow (perm)		1295	1463		1424	1624	499	1927		589	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	18	0	257	8	0	3	281	914	4	7	603	54
RTOR Reduction (vph)	0	0	199	0	0	3	0	0	0	0	1	0
Lane Group Flow (vph)	0	18	58	0	8	0	281	918	0	7	656	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		5.3	29.0		5.3	5.3	120.3	120.3		90.6	90.6	
Effective Green, g (s)		7.3	33.0		7.3	7.3	122.3	122.3		92.6	92.6	
Actuated g/C Ratio		0.05	0.23		0.05	0.05	0.84	0.84		0.64	0.64	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		65	332		71	81	626	1625		376	1178	
v/s Ratio Prot			0.03				0.08	c0.48			0.36	
v/s Ratio Perm		c0.01	0.01		0.01	0.00	0.30			0.01		
v/c Ratio		0.28	0.18		0.11	0.00	0.45	0.56		0.02	0.56	
Uniform Delay, d1		66.3	45.1		65.8	65.4	7.2	3.4		9.6	14.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3	0.3		0.7	0.0	0.5	1.4		0.1	1.9	
Delay (s)		68.6	45.3		66.5	65.4	7.8	4.8		9.7	16.6	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		46.8			66.2			5.5			16.5	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

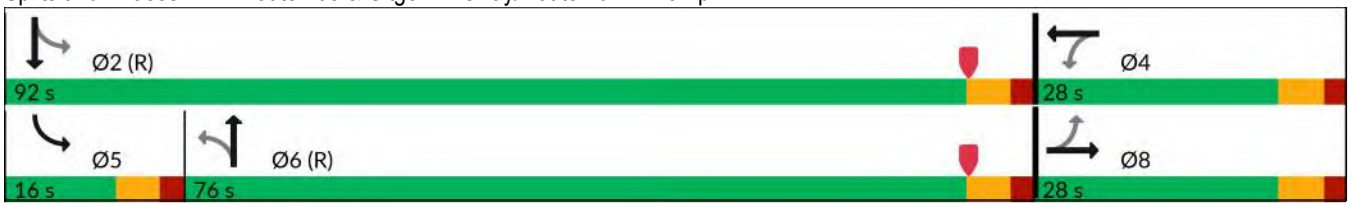


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	103	3	110	1	530	311	135	513	9
Future Volume (vph)	0	0	9	103	3	110	1	530	311	135	513	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.865			0.931			0.950			0.997	
Flt Protected					0.977					0.950		
Satd. Flow (prot)	0	1479	0	0	1745	0	0	1710	0	1719	1866	0
Flt Permitted					0.843					0.255		
Satd. Flow (perm)	0	1479	0	0	1506	0	0	1710	0	462	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		398			39			44			2	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	0	0	10	114	3	122	1	582	342	148	564	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	10	0	0	239	0	0	925	0	148	574	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		21.5			21.5			76.2		90.5	90.5	
Actuated g/C Ratio		0.18			0.18			0.64		0.75	0.75	
v/c Ratio		0.02			0.79			0.84		0.32	0.41	
Control Delay (s/veh)		0.0			58.3			26.1		6.3	6.6	
Queue Delay		0.0			0.0			49.6		0.0	0.0	
Total Delay (s/veh)		0.0			58.3			75.7		6.3	6.6	
LOS		A			E			E		A	A	
Approach Delay (s/veh)					58.3			75.7			6.5	
Approach LOS					E			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 46.8		Intersection LOS: D	
Intersection Capacity Utilization 103.7%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	10	239	925	148	574
v/c Ratio	0.02	0.79	0.84	0.32	0.41
Control Delay (s/veh)	0.0	58.3	26.1	6.3	6.6
Queue Delay	0.0	0.0	49.6	0.0	0.0
Total Delay (s/veh)	0.0	58.3	75.7	6.3	6.6
Queue Length 50th (ft)	0	147	534	29	148
Queue Length 95th (ft)	0	#254	#884	48	207
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	614	332	1101	474	1407
Starvation Cap Reductn	0	0	372	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.72	1.27	0.31	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	9	103	3	110	1	530	311	135	513	9
Future Volume (vph)	0	0	9	103	3	110	1	530	311	135	513	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.87			0.93			0.95		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1479			1745			1710		1719	1867	
Flt Permitted		1.00			0.84			1.00		0.25	1.00	
Satd. Flow (perm)		1479			1506			1709		461	1867	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	10	114	3	122	1	582	342	148	564	10
RTOR Reduction (vph)	0	8	0	0	32	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	207	0	0	909	0	148	574	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	4%	4%	4%	3%	3%	3%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		19.5			19.5			74.1		88.5	88.5	
Effective Green, g (s)		21.5			21.5			76.1		90.5	90.5	
Actuated g/C Ratio		0.18			0.18			0.63		0.75	0.75	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		264			269			1083		456	1408	
v/s Ratio Prot		0.00								0.03	c0.31	
v/s Ratio Perm					c0.14			c0.53		0.22		
v/c Ratio		0.01			0.77			0.84		0.32	0.41	
Uniform Delay, d1		40.5			46.9			17.2		6.9	5.2	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			12.4			7.8		0.4	0.9	
Delay (s)		40.5			59.3			25.0		7.3	6.1	
Level of Service		D			E			C		A	A	
Approach Delay (s/veh)		40.5			59.3			25.0			6.4	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year Build Weekday Evening Peak Hour

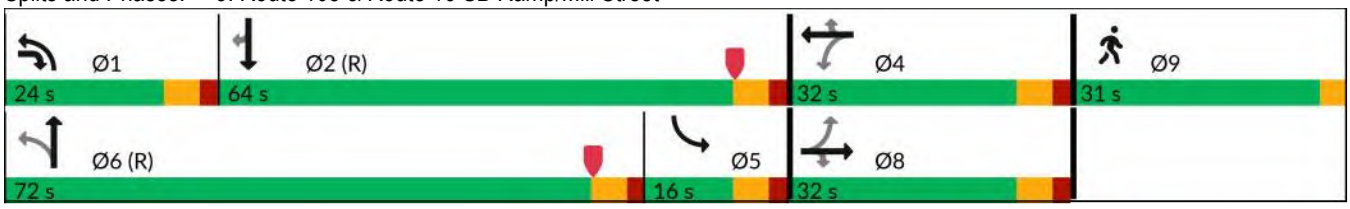
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	5	308	3	3	13	54	878	10	8	747	306
Future Volume (vph)	211	5	308	3	3	13	54	878	10	8	747	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00				0.98		1.00		1.00		
Frt			0.850			0.850		0.998				0.850
Flt Protected		0.954			0.976		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1766	1591	1787	1877	0	1771	3541	1584
Flt Permitted		0.728			0.897		0.257			0.950		
Satd. Flow (perm)	0	1347	1577	0	1623	1555	483	1877	0	1768	3541	1584
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			342			130						336
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	234	6	342	3	3	14	60	976	11	9	821	336
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	240	342	0	6	14	60	987	0	9	821	336
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		34.7	47.7		34.7	34.7	99.3	99.3		8.5	88.3	88.3
Actuated g/C Ratio		0.23	0.32		0.23	0.23	0.66	0.66		0.06	0.58	0.58
v/c Ratio		0.78	0.47		0.02	0.03	0.15	0.80		0.09	0.40	0.32
Control Delay (s/veh)		71.7	4.6		45.6	0.2	14.1	27.0		69.0	19.7	3.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		71.7	4.6		45.6	0.2	14.1	27.0		69.0	19.7	3.0
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		32.3			13.8			26.3			15.3	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	240	342	6	14	60	987	9	821	336
v/c Ratio	0.78	0.47	0.02	0.03	0.15	0.80	0.09	0.40	0.32
Control Delay (s/veh)	71.7	4.6	45.6	0.2	14.1	27.0	69.0	19.7	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.7	4.6	45.6	0.2	14.1	27.0	69.0	19.7	3.0
Queue Length 50th (ft)	217	0	5	0	17	578	9	207	0
Queue Length 95th (ft)	#396	49	19	0	63	#1414	29	382	59
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	309	815	372	457	490	1234	140	2070	1065
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.42	0.02	0.03	0.12	0.80	0.06	0.40	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	5	308	3	3	13	54	878	10	8	747	306
Future Volume (vph)	211	5	308	3	3	13	54	878	10	8	747	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1765	1577		1765	1556	1787	1878		1771	3541	1584
Flt Permitted		0.73	1.00		0.90	1.00	0.26	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1347	1577		1624	1556	483	1878		1771	3541	1584
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	234	6	342	3	3	14	60	976	11	9	821	336
RTOR Reduction (vph)	0	0	241	0	0	11	0	0	0	0	0	145
Lane Group Flow (vph)	0	240	101	0	6	3	60	987	0	9	821	191
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		32.7	40.5		32.7	32.7	90.1	90.1		1.6	83.9	83.9
Effective Green, g (s)		34.7	44.5		34.7	34.7	92.1	92.1		3.6	85.9	85.9
Actuated g/C Ratio		0.23	0.29		0.23	0.23	0.61	0.61		0.02	0.57	0.57
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		309	464		373	357	379	1145		42	2014	901
v/s Ratio Prot			0.01				0.01	c0.53		0.01	c0.23	
v/s Ratio Perm		c0.18	0.05		0.00	0.00	0.09					0.12
v/c Ratio		0.78	0.22		0.02	0.01	0.16	0.86		0.21	0.41	0.21
Uniform Delay, d1		54.5	40.1		45.0	44.9	13.4	24.2		72.3	18.3	16.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		11.6	0.2		0.0	0.0	0.2	8.6		2.6	0.6	0.5
Delay (s)		66.1	40.4		45.0	44.9	13.6	32.8		74.9	18.9	16.5
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		51.0			44.9			31.7			18.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



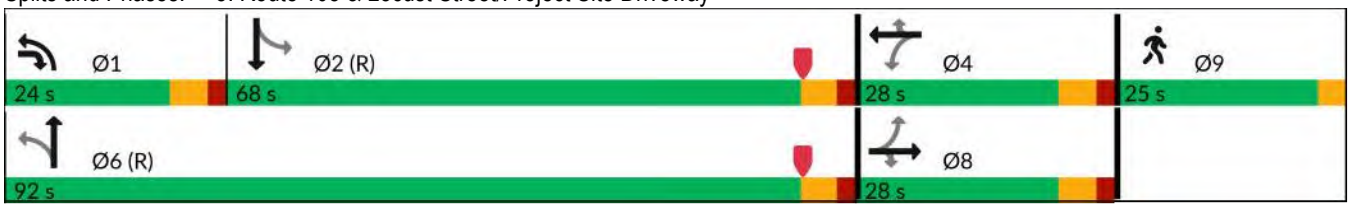
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	317	11	0	4	234	851	6	9	738	118
Future Volume (vph)	40	0	317	11	0	4	234	851	6	9	738	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00			1.00	1.00	
Frt			0.850			0.850		0.999			0.979	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1815	1624	1693	1965	0	1736	1846	0
Flt Permitted		0.750			0.729		0.118			0.336		
Satd. Flow (perm)	0	1330	1507	0	1392	1624	210	1965	0	614	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			337			90					7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)							1			3		1
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	43	0	337	12	0	4	241	877	6	10	820	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	337	0	12	4	241	883	0	10	951	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.2	36.0		12.2	12.2	122.2	123.0		95.2	95.2	
Actuated g/C Ratio		0.08	0.25		0.08	0.08	0.84	0.85		0.66	0.66	
v/c Ratio		0.39	0.54		0.10	0.02	0.59	0.53		0.02	0.78	
Control Delay (s/veh)		71.7	5.9		61.3	0.3	19.4	7.3		16.7	26.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.7		0.0	50.1	
Total Delay (s/veh)		71.7	5.9		61.3	0.3	19.4	8.0		16.7	77.0	
LOS		E	A		E	A	B	A		B	E	
Approach Delay (s/veh)		13.3			46.0			10.5			76.4	
Approach LOS		B			D			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 36.7		Intersection LOS: D	
Intersection Capacity Utilization 79.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	337	12	4	241	883	10	951
v/c Ratio	0.39	0.54	0.10	0.02	0.59	0.53	0.02	0.78
Control Delay (s/veh)	71.7	5.9	61.3	0.3	19.4	7.3	16.7	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.7	0.0	50.1
Total Delay (s/veh)	71.7	5.9	61.3	0.3	19.4	8.0	16.7	77.0
Queue Length 50th (ft)	39	0	11	0	53	159	3	568
Queue Length 95th (ft)	79	50	31	0	196	636	18	#1325
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	220	634	230	343	420	1666	403	1214
Starvation Cap Reductn	0	0	0	0	0	417	0	445
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.53	0.05	0.01	0.57	0.71	0.02	1.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	317	11	0	4	234	851	6	9	738	118
Future Volume (vph)	40	0	317	11	0	4	234	851	6	9	738	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685	1507		1815	1624	1693	1964		1735	1846	
Flt Permitted		0.75	1.00		0.73	1.00	0.12	1.00		0.34	1.00	
Satd. Flow (perm)		1330	1507		1393	1624	210	1964		614	1846	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.97	0.97	0.97	0.90	0.90	0.90
Adj. Flow (vph)	43	0	337	12	0	4	241	877	6	10	820	131
RTOR Reduction (vph)	0	0	258	0	0	4	0	0	0	0	3	0
Lane Group Flow (vph)	0	43	79	0	12	0	241	883	0	10	948	0
Confl. Peds. (#/hr)							1			3		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		9.0	30.0		9.0	9.0	116.6	116.6		89.6	89.6	
Effective Green, g (s)		11.0	34.0		11.0	11.0	118.6	118.6		91.6	91.6	
Actuated g/C Ratio		0.08	0.23		0.08	0.08	0.82	0.82		0.63	0.63	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		100	353		105	123	407	1606		387	1166	
v/s Ratio Prot			0.04				c0.09	0.45			c0.51	
v/s Ratio Perm		c0.03	0.02		0.01	0.00	0.39			0.02		
v/c Ratio		0.43	0.22		0.11	0.00	0.59	0.55		0.03	0.81	
Uniform Delay, d1		64.0	44.8		62.5	61.9	26.7	4.4		10.0	20.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.0	0.3		0.5	0.0	2.3	1.4		0.1	6.3	
Delay (s)		67.0	45.2		62.9	61.9	29.0	5.7		10.1	26.5	
Level of Service		E	D		E	E	C	A		B	C	
Approach Delay (s/veh)		47.6			62.7			10.7			26.3	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

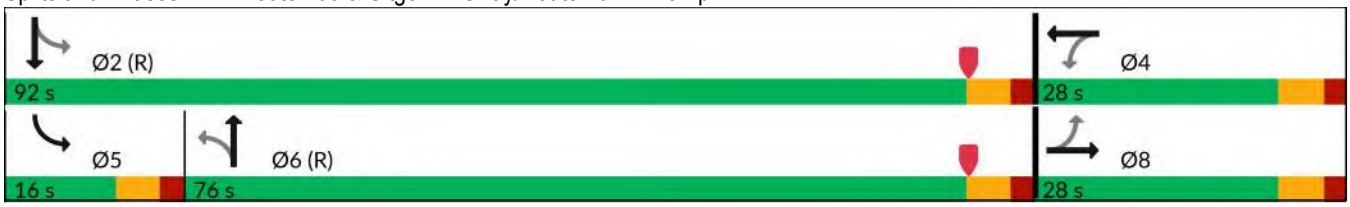


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	215	15	148	1	542	352	190	639	19
Future Volume (vph)	0	2	11	215	15	148	1	542	352	190	639	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.884			0.947			0.947			0.996	
Flt Protected					0.972					0.950		
Satd. Flow (prot)	0	1512	0	0	1749	0	0	1755	0	1771	1920	0
Flt Permitted					0.816					0.219		
Satd. Flow (perm)	0	1512	0	0	1468	0	0	1755	0	408	1920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			24			49			3	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	2	12	239	17	164	1	602	391	211	710	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	420	0	0	994	0	211	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		25.5			25.5			71.1		86.5	86.5	
Actuated g/C Ratio		0.21			0.21			0.59		0.72	0.72	
v/c Ratio		0.04			1.27			0.94		0.50	0.53	
Control Delay (s/veh)		20.7			180.4			38.4		9.3	9.0	
Queue Delay		0.0			0.0			46.6		0.0	0.0	
Total Delay (s/veh)		20.7			180.4			85.1		9.3	9.0	
LOS		C			F			F		A	A	
Approach Delay (s/veh)		20.7			180.4			85.1			9.1	
Approach LOS		C			F			F			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay (s/veh): 71.4		Intersection LOS: E	
Intersection Capacity Utilization 123.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	14	420	994	211	731
v/c Ratio	0.04	1.27	0.94	0.50	0.53
Control Delay (s/veh)	20.7	180.4	38.4	9.3	9.0
Queue Delay	0.0	0.0	46.6	0.0	0.0
Total Delay (s/veh)	20.7	180.4	85.1	9.3	9.0
Queue Length 50th (ft)	1	~412	630	43	212
Queue Length 95th (ft)	20	#617	#975	67	291
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	331	331	1072	430	1408
Starvation Cap Reductn	0	0	353	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	1.27	1.38	0.49	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	11	215	15	148	1	542	352	190	639	19
Future Volume (vph)	0	2	11	215	15	148	1	542	352	190	639	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.88			0.95			0.95		1.00	1.00	
Flt Protected		1.00			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1512			1750			1754		1771	1919	
Flt Permitted		1.00			0.82			1.00		0.22	1.00	
Satd. Flow (perm)		1512			1469			1754		408	1919	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	2	12	239	17	164	1	602	391	211	710	21
RTOR Reduction (vph)	0	9	0	0	19	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	5	0	0	401	0	0	974	0	211	730	0
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.5			23.5			69.1		84.5	84.5	
Effective Green, g (s)		25.5			25.5			71.1		86.5	86.5	
Actuated g/C Ratio		0.21			0.21			0.59		0.72	0.72	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		321			312			1039		423	1383	
v/s Ratio Prot		0.00								0.05	c0.38	
v/s Ratio Perm					c0.27			0.56		0.31		
v/c Ratio		0.01			1.29			0.94		0.50	0.53	
Uniform Delay, d1		37.3			47.3			22.4		10.0	7.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			150.7			16.4		0.9	1.4	
Delay (s)		37.3			197.9			38.8		10.9	9.0	
Level of Service		D			F			D		B	A	
Approach Delay (s/veh)		37.3			197.9			38.8			9.4	
Approach LOS		D			F			D			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2036 Design Year Build Saturday Midday Peak Hour

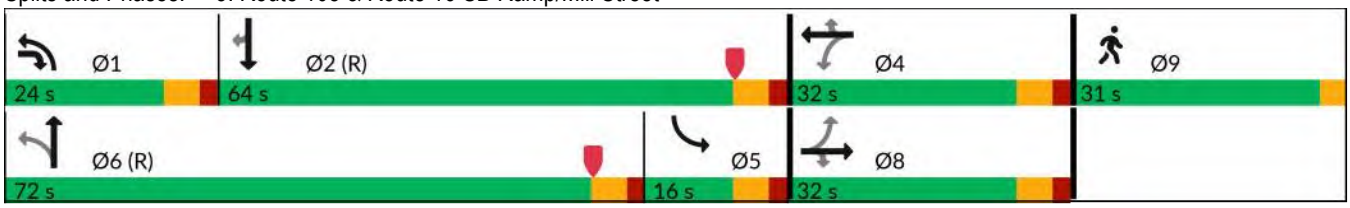
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	7	193	9	2	16	55	758	7	3	554	282
Future Volume (vph)	194	7	193	9	2	16	55	758	7	3	554	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Storage Length (ft)	0		280	0		150	200		0	90		170
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99				0.97	1.00	1.00		1.00		0.97
Frt			0.850			0.850		0.999				0.850
Flt Protected		0.954			0.960		0.950			0.950		
Satd. Flow (prot)	0	1770	1577	0	1737	1591	1787	1879	0	1771	3541	1584
Flt Permitted		0.725			0.789		0.352			0.950		
Satd. Flow (perm)	0	1334	1577	0	1427	1546	661	1879	0	1767	3541	1541
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			212			130						313
Link Speed (mph)		25			30			29			30	
Link Distance (ft)		453			425			446			360	
Travel Time (s)		12.4			9.7			10.5			8.2	
Confl. Peds. (#/hr)	3					3	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	213	8	212	10	2	18	61	842	8	3	616	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	212	0	12	18	61	850	0	3	616	313
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.02	1.02	1.02	1.07	1.02	1.00	1.00	1.00	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	1
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)		46	46		46	46	46	46		46	46	46
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	-4
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	50
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	16.0	16.0	11.0	16.0	16.0	16.0	11.0	16.0		11.0	16.0	16.0
Total Split (s)	32.0	32.0	24.0	32.0	32.0	32.0	24.0	72.0		16.0	64.0	64.0
Total Split (%)	21.2%	21.2%	15.9%	21.2%	21.2%	21.2%	15.9%	47.7%		10.6%	42.4%	42.4%
Maximum Green (s)	26.0	26.0	18.0	26.0	26.0	26.0	18.0	66.0		10.0	58.0	58.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		31.9	44.7		31.9	31.9	102.4	102.4		8.0	91.3	91.3
Actuated g/C Ratio		0.21	0.30		0.21	0.21	0.68	0.68		0.05	0.60	0.60
v/c Ratio		0.79	0.34		0.04	0.04	0.12	0.67		0.03	0.29	0.30
Control Delay (s/veh)		75.6	4.6		46.6	0.2	13.2	21.2		68.3	17.1	3.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		75.6	4.6		46.6	0.2	13.2	21.2		68.3	17.1	3.0
LOS		E	A		D	A	B	C		E	B	A
Approach Delay (s/veh)		40.8			18.8			20.7			12.5	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 151			
Actuated Cycle Length: 151			
Offset: 66 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 21.2		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Route 108 & Route 16 SB Ramp/Mill Street



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	21%
Maximum Green (s)	28.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	23.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	212	12	18	61	850	3	616	313
v/c Ratio	0.79	0.34	0.04	0.04	0.12	0.67	0.03	0.29	0.30
Control Delay (s/veh)	75.6	4.6	46.6	0.2	13.2	21.2	68.3	17.1	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.6	4.6	46.6	0.2	13.2	21.2	68.3	17.1	3.0
Queue Length 50th (ft)	203	0	9	0	16	397	3	135	0
Queue Length 95th (ft)	#343	41	29	0	64	#1129	14	275	58
Internal Link Dist (ft)	373		345			366		280	
Turn Bay Length (ft)		280		150	200		90		170
Base Capacity (vph)	287	709	307	434	597	1274	140	2141	1055
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.30	0.04	0.04	0.10	0.67	0.02	0.29	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	7	193	9	2	16	55	758	7	3	554	282
Future Volume (vph)	194	7	193	9	2	16	55	758	7	3	554	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	11	11	12	11	12	12	12	12	11	11	11
Grade (%)		-4%			3%			0%			-5%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1758	1577		1737	1548	1786	1878		1771	3541	1545
Flt Permitted		0.73	1.00		0.79	1.00	0.35	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1336	1577		1427	1548	661	1878		1771	3541	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	213	8	212	10	2	18	61	842	8	3	616	313
RTOR Reduction (vph)	0	0	154	0	0	14	0	0	0	0	0	129
Lane Group Flow (vph)	0	221	58	0	12	4	61	850	0	3	616	184
Confl. Peds. (#/hr)	3					3	6		1	1		6
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		4	6					2
Actuated Green, G (s)		29.9	37.5		29.9	29.9	93.2	93.2		1.3	86.9	86.9
Effective Green, g (s)		31.9	41.5		31.9	31.9	95.2	95.2		3.3	88.9	88.9
Actuated g/C Ratio		0.21	0.27		0.21	0.21	0.63	0.63		0.02	0.59	0.59
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		282	433		301	327	488	1184		38	2084	909
v/s Ratio Prot			0.01				0.01	c0.45		0.00	c0.17	
v/s Ratio Perm		c0.17	0.03		0.01	0.00	0.07					0.12
v/c Ratio		0.78	0.13		0.04	0.01	0.13	0.72		0.08	0.30	0.20
Uniform Delay, d1		56.3	41.2		47.4	47.1	11.3	18.8		72.4	15.5	14.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		13.3	0.1		0.1	0.0	0.1	3.8		0.9	0.4	0.5
Delay (s)		69.6	41.4		47.4	47.1	11.5	22.6		73.3	15.8	15.0
Level of Service		E	D		D	D	B	C		E	B	B
Approach Delay (s/veh)		55.8			47.2			21.8			15.7	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	151.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

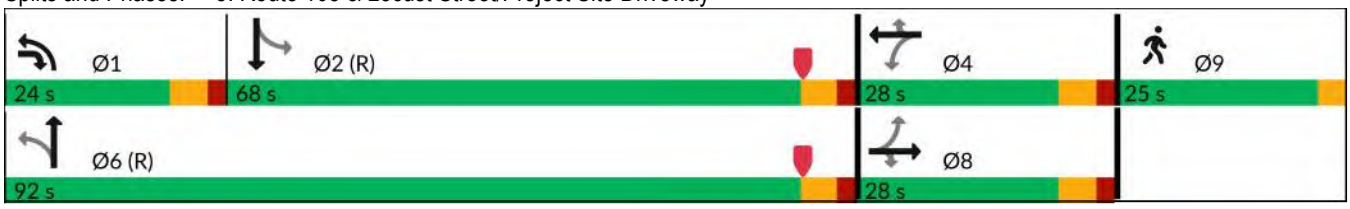
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	287	11	0	5	267	675	6	10	492	81
Future Volume (vph)	26	0	287	11	0	5	267	675	6	10	492	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Storage Length (ft)	0		275	0		0	170		0	85		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.999			0.979	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1685	1507	0	1815	1624	1693	1964	0	1753	1863	0
Flt Permitted		0.750			0.738		0.305			0.396		
Satd. Flow (perm)	0	1326	1507	0	1410	1586	543	1964	0	731	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			319			90		1			7	
Link Speed (mph)		30			25			29			30	
Link Distance (ft)		620			242			495			213	
Travel Time (s)		14.1			6.6			11.6			4.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	29	0	319	12	0	6	278	703	6	11	541	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	319	0	12	6	278	709	0	11	630	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.09	1.09	0.95	0.99	0.99	1.07	0.94	1.23	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	1		1	1	1	1		1	1	
Detector Template		Thru	Right		Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)		46	46		46	46	46	46		46	46	
Trailing Detector (ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Position(ft)		-4	-4		-4	-4	-4	-4		-4	-4	
Detector 1 Size(ft)		50	50		50	50	50	50		50	50	
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8	1	4	4	4	1	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	16.0		16.0	16.0	
Total Split (s)	28.0	28.0	24.0	28.0	28.0	28.0	24.0	92.0		68.0	68.0	
Total Split (%)	19.3%	19.3%	16.6%	19.3%	19.3%	19.3%	16.6%	63.4%		46.9%	46.9%	
Maximum Green (s)	22.0	22.0	18.0	22.0	22.0	22.0	18.0	86.0		62.0	62.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.8	32.9		10.5	10.5	126.2	127.8		98.3	98.3	
Actuated g/C Ratio		0.07	0.23		0.07	0.07	0.87	0.88		0.68	0.68	
v/c Ratio		0.30	0.54		0.12	0.03	0.42	0.41		0.02	0.50	
Control Delay (s/veh)		70.2	6.3		63.7	0.2	5.4	5.1		15.9	17.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.4		0.0	18.5	
Total Delay (s/veh)		70.2	6.3		63.7	0.2	5.4	5.4		15.9	36.1	
LOS		E	A		E	A	A	A		B	D	
Approach Delay (s/veh)		11.6			42.6			5.4			35.8	
Approach LOS		B			D			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 86 (59%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 16.6		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Route 108 & Locust Street/Project Site Driveway



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	17%
Maximum Green (s)	22.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	319	12	6	278	709	11	630
v/c Ratio	0.30	0.54	0.12	0.03	0.42	0.41	0.02	0.50
Control Delay (s/veh)	70.2	6.3	63.7	0.2	5.4	5.1	15.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	18.5
Total Delay (s/veh)	70.2	6.3	63.7	0.2	5.4	5.4	15.9	36.1
Queue Length 50th (ft)	26	0	11	0	30	98	3	269
Queue Length 95th (ft)	60	49	32	0	138	415	19	650
Internal Link Dist (ft)	540		162			415		133
Turn Bay Length (ft)		275			170		85	
Base Capacity (vph)	219	593	233	337	666	1730	495	1265
Starvation Cap Reductn	0	0	0	0	0	503	0	633
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.05	0.02	0.42	0.58	0.02	1.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	287	11	0	5	267	675	6	10	492	81
Future Volume (vph)	26	0	287	11	0	5	267	675	6	10	492	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	11	11	11	14	8	11	12	12
Grade (%)		0%			-8%			4%			-3%	
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	1.00		1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1670	1507		1815	1577	1693	1964		1753	1863	
Flt Permitted		0.75	1.00		0.74	1.00	0.31	1.00		0.40	1.00	
Satd. Flow (perm)		1318	1507		1410	1577	544	1964		730	1863	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.91	0.91	0.91
Adj. Flow (vph)	29	0	319	12	0	6	278	703	6	11	541	89
RTOR Reduction (vph)	0	0	249	0	0	6	0	0	0	0	2	0
Lane Group Flow (vph)	0	29	70	0	12	0	278	709	0	11	628	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		8	1		4		1	6			2	
Permitted Phases	8		8	4		4	6			2		
Actuated Green, G (s)		6.2	28.0		6.2	6.2	119.4	119.4		91.6	91.6	
Effective Green, g (s)		8.2	32.0		8.2	8.2	121.4	121.4		93.6	93.6	
Actuated g/C Ratio		0.06	0.22		0.06	0.06	0.84	0.84		0.65	0.65	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		74	332		79	89	644	1644		471	1202	
v/s Ratio Prot			0.03				0.07	c0.36			c0.34	
v/s Ratio Perm		c0.02	0.01		0.01	0.00	0.29			0.02		
v/c Ratio		0.39	0.21		0.15	0.00	0.43	0.43		0.02	0.52	
Uniform Delay, d1		66.0	46.2		65.1	64.5	6.5	3.0		9.2	13.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.4	0.3		0.9	0.0	0.5	0.8		0.1	1.6	
Delay (s)		69.4	46.5		66.0	64.6	6.9	3.8		9.3	15.4	
Level of Service		E	D		E	E	A	A		A	B	
Approach Delay (s/veh)		48.4			65.5			4.7			15.3	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

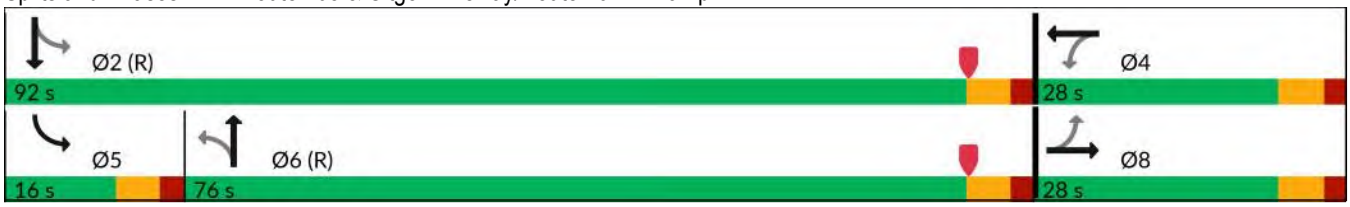


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	98	9	160	2	484	220	161	480	15
Future Volume (vph)	0	5	5	98	9	160	2	484	220	161	480	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.932			0.919			0.958			0.995	
Flt Protected					0.982					0.950		
Satd. Flow (prot)	0	1594	0	0	1715	0	0	1793	0	1771	1918	0
Flt Permitted					0.874			0.999		0.288		
Satd. Flow (perm)	0	1594	0	0	1526	0	0	1791	0	537	1918	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			56			34			4	
Link Speed (mph)		25			25			29			29	
Link Distance (ft)		152			511			213			446	
Travel Time (s)		4.1			13.9			5.0			10.5	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	6	6	108	10	176	2	532	242	179	533	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	294	0	0	776	0	179	550	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.20	1.14	1.20	0.97	0.97	0.97	1.22	1.02	1.02	1.02	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1			1			1		1	1	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (ft)		46			46			46		46	46	
Trailing Detector (ft)		-4			-4			-4		-4	-4	
Detector 1 Position(ft)		-4			-4			-4		-4	-4	
Detector 1 Size(ft)		50			50			50		50	50	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		16.0	16.0		11.0	16.0	
Total Split (s)	28.0	28.0		28.0	28.0		76.0	76.0		16.0	92.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		63.3%	63.3%		13.3%	76.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		70.0	70.0		10.0	86.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		None	C-Min	
Act Effct Green (s)		25.1			25.1			71.7		86.9	86.9	
Actuated g/C Ratio		0.21			0.21			0.60		0.72	0.72	
v/c Ratio		0.04			0.81			0.72		0.36	0.40	
Control Delay (s/veh)		26.8			53.8			21.7		7.5	7.7	
Queue Delay		0.0			0.0			51.7		0.0	0.0	
Total Delay (s/veh)		26.8			53.8			73.4		7.5	7.7	
LOS		C			D			E		A	A	
Approach Delay (s/veh)		26.8			53.8			73.4			7.6	
Approach LOS		C			D			E			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 43.5		Intersection LOS: D	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: Route 108 & Citgo Driveway/Route 16 NB Ramp





Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	12	294	776	179	550
v/c Ratio	0.04	0.81	0.72	0.36	0.40
Control Delay (s/veh)	26.8	53.8	21.7	7.5	7.7
Queue Delay	0.0	0.0	51.7	0.0	0.0
Total Delay (s/veh)	26.8	53.8	73.4	7.5	7.7
Queue Length 50th (ft)	4	173	412	41	159
Queue Length 95th (ft)	21	#332	533	57	191
Internal Link Dist (ft)	72	431	133		366
Turn Bay Length (ft)				150	
Base Capacity (vph)	353	377	1118	514	1425
Starvation Cap Reductn	0	0	470	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.78	1.20	0.35	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	5	98	9	160	2	484	220	161	480	15
Future Volume (vph)	0	5	5	98	9	160	2	484	220	161	480	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	9	8	12	12	12	8	12	12	11	12	12
Grade (%)		0%			-4%			3%			-3%	
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			0.92			0.96		1.00	1.00	
Flt Protected		1.00			0.98			1.00		0.95	1.00	
Satd. Flow (prot)		1595			1715			1792		1771	1918	
Flt Permitted		1.00			0.87			1.00		0.29	1.00	
Satd. Flow (perm)		1595			1526			1791		537	1918	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	6	6	108	10	176	2	532	242	179	533	17
RTOR Reduction (vph)	0	5	0	0	44	0	0	14	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	250	0	0	762	0	179	549	0
Confl. Peds. (#/hr)							4					4
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		23.1			23.1			69.7		84.9	84.9	
Effective Green, g (s)		25.1			25.1			71.7		86.9	86.9	
Actuated g/C Ratio		0.21			0.21			0.60		0.72	0.72	
Clearance Time (s)		6.0			6.0			6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		333			319			1070		504	1388	
v/s Ratio Prot		0.00								0.03	c0.29	
v/s Ratio Perm					c0.16			c0.43		0.22		
v/c Ratio		0.02			0.78			0.71		0.36	0.40	
Uniform Delay, d1		37.7			44.9			16.9		7.8	6.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.0			11.8			4.0		0.4	0.8	
Delay (s)		37.7			56.7			21.0		8.3	7.2	
Level of Service		D			E			C		A	A	
Approach Delay (s/veh)		37.7			56.7			21.0			7.5	
Approach LOS		D			E			C			A	

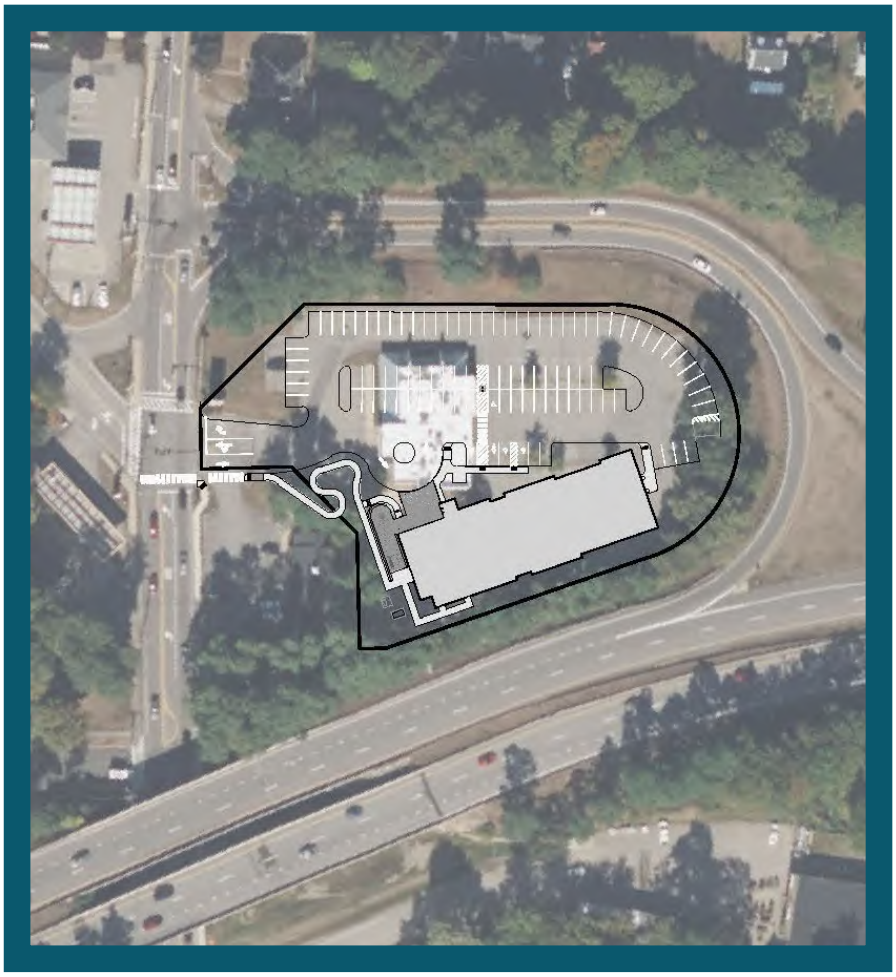
Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

ALLEN & MAJOR
ASSOCIATES, INC.

DRAINAGE REPORT

Townplace Suites by Marriott
Dover, New Hampshire

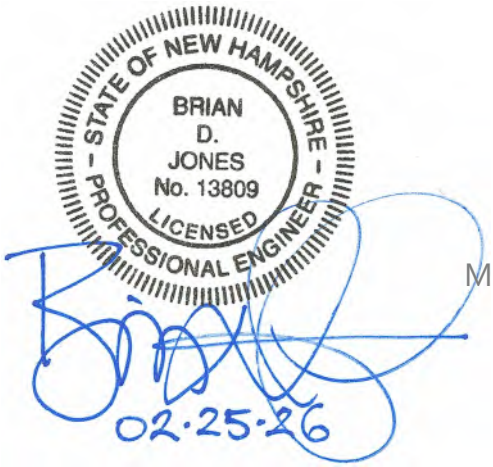


APPLICANT:
Lafrance Bowden Hospitality II, LLC
41 Old Bedford Road
Westport, MA 02790

PREPARED BY:
Allen & Major Associates, Inc.
400 Harvey Road, Suite D
Manchester, New Hampshire 03103

DRAINAGE REPORT

Townplace Suites by Marriott
Dover, NH



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PREPARED BY:
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ISSUED:
January 30, 2026

REVISED:
February 25, 2026

A&M PROJECT NO.:
1173-31

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SECTION 1.0 -
OVERVIEW

Executive Summary

The purpose of this drainage report is to provide a detailed review of the stormwater runoff, both quality and quantity, as it pertains to the existing and proposed developed conditions. This report will show by means of narrative, calculations and exhibits that appropriate best management practices have been implemented into the design to mitigate the impacts from the proposed redevelopment. This report and the following tables demonstrate that there is no increase in the peak rate of runoff and discharge volume from the site for all design storm events.

Study Point 1 - Central Ave				
	2-Year	10-Year	25-Year	50-Year
Existing Flow (CFS)	4.08	7.17	9.61	11.88
Proposed Flow (CFS)	3.94	6.99	9.42	11.69
Change (CFS)	**-0.14**	**-0.18**	**-0.19**	**-0.19**
Existing Volume (CF)	12,653	22,540	30,618	38,305
Proposed Volume (CF)	10,721	20,429	28,453	36,141
Change (CF)	**-1,932**	**-2,111**	**-2,165**	**-2,164**

Study Point 2 - Spaulding Turnpike				
	2-Year	10-Year	25-Year	50-Year
Existing Flow (CFS)	0.03	0.12	0.21	0.31
Proposed Flow (CFS)	0.01	0.06	0.10	0.15
Change (CFS)	**-0.02**	**-0.06**	**-0.11**	**-0.16**
Existing Volume (CF)	144	416	686	968
Proposed Volume (CF)	71	205	338	477
Change (CF)	**-73**	**-211**	**-348**	**-491**

Study Point 3 - #45 Central Ave				
	2-Year	10-Year	25-Year	50-Year
Existing Flow (CFS)	0.02	0.07	0.12	0.17
Proposed Flow (CFS)	0.01	0.06	0.11	0.16
Change (CFS)	**-0.01**	**-0.01**	**-0.01**	**-0.01**
Existing Volume (CF)	79	228	376	531
Proposed Volume (CF)	75	215	354	500
Change (CF)	**-4**	**-13**	**-22**	**-31**

Site Location and Description

The overall project site is comprised of a single parcel totaling approximately 2.1± acres. The parcel is listed on the City of Dover Assessors Map 17 as Lot 76 and is situated between Route 16 and the Exit 7 northbound on-ramp. The project proposes to redevelop the site into a 94± guestroom hotel with associated utilities and drainage infrastructure.

Historically, the site has been home to a Burger King restaurant. Most of the parcel is developed by the building and surface parking, with some areas of landscaping around the perimeter and interior to the parking lot. Elevations on site range from a high point of 110± on the easterly side of the site, to a low point of 94± on the westerly side of the site where it meets Central Ave.

The underlying soils were identified using the USDA Natural Resources Conservation Service (NRCS) soil survey for Strafford County, which shows that the predominant soil on site is Windsor loamy sand, with a small amount of Windsor loamy fine sand in the northeast corner. Both soils have a Hydrologic Soil Group "A" classification. A copy of the NRCS Soil Report is included in the Appendix of this report.

Symbol	Map Unit Name	Hydrologic Soil Group
WdB	Windsor loamy sand	A
WfB	Windsor loamy fine sand	A

Additional investigation into the underlying soils was carried out on January 20, 2026, by Allen & Major Associates, Inc. Four test pits were performed at various locations on the site determine the composition of the underlying soils and depth to seasonal high groundwater. The infiltration system proposed as part of the project is located within Test Pit #4, the soils of which were a fine sandy loam. This soil profile is more representative of a Newfields soil series, which is Hydrologic Soil Group "B", with a Ksat rating of 0.6 inches per hour, as specified by the SSSNNE Special Publication No. 5. A 2X safety factor was applied and a design infiltration rate of 0.3 inches per hour was used. Seasonal high ground water was not encountered in TP-4. Copies of the test pit logs are included on the Grading & Drainage Plan, sheet C-103 in the Site Development Plan Set.

A stormwater analysis has been performed for two situations. The first analysis consists of the existing site conditions and the second consists of the proposed site conditions. There are three (3) study points where the stormwater flows were analyzed. The study points and contributing watersheds are further outlined in the accompanying text and calculations.

Site Data for Stormwater Modeling

The proposed project will disturb approximately 1.75 acres. This disturbance includes the demolition of the existing building and construction of the proposed hotel, parking lot, installation of utilities, and drainage infrastructure.

The proposed watershed includes approximately **55,642 square feet** of impervious, which is a decrease of approximately **533 square feet** from the existing conditions. Rainfall data used for modeling the stormwater runoff was derived from the "Extreme Precipitation Tables" from the Northeast Regional Climate Center at Cornell University. The storm events were broken down for the 2, 10, 25, and 50-year storms.

Existing Site Conditions

Stormwater runoff was analyzed at three (3) different study point locations to demonstrate that the project does not result in an increase in runoff. The included Existing Watershed Plan (WS-1) outlines the boundaries contributing to the Study Points.

Study Point 1: This study point is the existing drainage infrastructure in Central Avenue. The existing development includes a closed drainage system that connects to the existing Central Avenue infrastructure. Most of the existing site runoff flows to one of the onsite catch basins and discharges to the Central Avenue infrastructure.

Study Point 2: This study point is the Spaulding Turnpike right-of-way. There is a depression adjacent to the southeasterly side of the site that receives runoff from the shoulder of the Spaulding Turnpike. Runoff from the grassy area east of the existing parking lot sheet flows to this depression.

Study Point 3: This study point is the #45 Central Avenue property. Runoff from a small grassy portion of the westerly side of the site sheet flows to the rear of this property.

Proposed Site Conditions

The project proposes to redevelop the site into a 94± guestroom hotel with associated utilities and drainage infrastructure. The stormwater runoff will be controlled using a combination of structural and nonstructural best management practices (BMPs). The BMPs utilized in the proposed condition include deep sump catch basins, area drains, an underground infiltration system, and an outlet control structure. The proposed BMPs have been designed to meet the applicable requirements outlined in Section 153-14 of the Dover Site Review Regulations.

Study Point 1: Runoff from the developed portion of the site will continue to flow to the Central Avenue drainage infrastructure. Runoff from the northeasterly side of the site (subcatchments P-6, P-7, and P-8) will sheet flow to one of three low point catch basins which discharge to the underground infiltration system. Runoff from a portion of the roof will also flow to the infiltration system. Overflow from the infiltration system, and other portions of the development, will flow to the Central Avenue drainage system using the existing drain line that leaves the site.

Study Point 2: Runoff from a small grassy portion of the southeasterly side of the site will continue to sheet flow to the depression in the Spaulding Turnpike right-of-way.

Study Point 3: Runoff from a small grassy portion on the westerly side of the site will continue to sheet flow to the rear of #45 Central Avenue property.

A hydrologic study of the site was conducted to determine the impact of the proposed redevelopment on the stormwater runoff. The study determined the peak rates and volumes of runoff at the study points will during all design storm events. The Proposed Watershed Plan (WS-2), which is included in Section 5 of this report, outlines the boundaries contributing to the Study Points.

SECTION 2.0 - DISCUSSION

Methodology

The peak discharge rates were determined using techniques and data found in the following:

1. Urban Hydrology for Small Watersheds – Technical Release 55 by the United States Department of Agriculture Soils Conservation Service, June 1986. Runoff curve numbers and 24-hour precipitation values were obtained from this reference.
2. HydroCAD© Stormwater Modeling System by HydroCAD Software Solutions, LLC, version 10.20-8a. The HydroCAD program was used to generate the runoff hydrographs for the watershed areas, to perform drainage routing, and to combine the results of the runoff hydrographs.

Peak Discharge Rates

The stormwater runoff analysis of the existing and proposed conditions includes an estimation of the peak discharge rate for various rainfall events. Peak discharge rates were developed using TR-55 Urban Hydrology for Small Watersheds, developed by the United States Department of Commerce, Engineering Division and the HydroCAD 10.20-8a computer program. Further, the analysis has been prepared in accordance with the New Hampshire Stormwater Management Manual, City of Dover Site Plan Review Regulations, and standard engineering practices. The peak discharge rate has been estimated for each watershed during the 2, 10, 25, and 50-year storm events.

The stormwater runoff model shows that the proposed site design results in no increase to the peak rate of runoff during all design storm events. This is accomplished through the reduction in overall impervious area on site and installation of an underground infiltration system. The table in *Section 1: Overview* provides a summary of the estimated peak discharge rates for each study point during each of the design storm events. The HydroCAD worksheets for the existing and proposed drainage conditions are included within Sections 4 and 5 of this report.

Performance Standards

Stormwater performance standards have been implemented as part of the overall stormwater management plan for the proposed redevelopment. The goal of these standards is to improve water quality and protect the waters of New Hampshire from adverse impacts due to redevelopment. The performance standards are met by implementing appropriate Best Management Practices (BMPs). BMPs were designed in accordance with the NH Stormwater Management Manual and Env.Wq. 1500.

BMPs implemented in the design include:

- Deep sump catch basins
- Proprietary separators
- Underground infiltration system

- Outlet control structure
- Specific maintenance schedule

City of Dover Design Standards

The project meets the Minimum Protections and Management Standards of Section 153-14 of the City of Dover Site Review Regulations. The following is a detailed breakdown of how the design meets the standards of Section 153-14. Sections have been consolidated where appropriate and broken out in more detail where it was deemed necessary.

- Section A.(1): As described throughout the text of this report, the drainage design meets the purpose and objectives of the City of Dover Design Criteria. The proposed design manages the stormwater runoff and protects water quality and quantity through an infiltration system that meets the prescribed redevelopment design standards. This infiltration minimizes the contribution of pollutants downstream to the maximum extent practicable. Peak runoff rates to adjacent properties are shown to be reduced in the proposed condition and as described further below, LID strategies have been employed to the maximum extent practicable.
- Section A.(2): This section establishes the standards that apply to a given project, based on the amount of proposed disturbance and creation of impervious area. As described above, this project will disturb more than 20,000 square feet and reduces the amount of impervious area. Therefore, the stormwater standards for redevelopment apply to this project. The project will disturb more than 1 acre of land therefore, a NPDES Stormwater Pollution Prevention Plan (SWPPP) will be required. This will be completed prior to construction.
- Section A(3)(a)
    - [1]: This section outlines the minimum protection and management standards for all projects. The project will meet the EPA Phase II Stormwater Rules, as mentioned above a SWPPP will be submitted prior to construction. The requirements of the City's MS4 permit are met through the implementation of a long-term inspection and maintenance plan (see Section 3 below). The project meets the City's requirement for nitrogen reduction, contributing to the compliance with the Great Bay Total Nitrogen General Permit.
    - [2]: There are no surface waters or wetlands on or adjacent to the site.
    - [3]: Low-impact development (LID) strategies, which are intended to replicate existing hydrology, have been employed. This includes the use of a previously developed site and reduction of impervious cover. The proposed infiltration system is located as close to the runoff source as possible. Opportunities for additional LID strategies were investigated but found to be infeasible due to the significant grade change across the site and seasonal high groundwater encountered towards the rear of the site.

- [4]: BMPs were designed in accordance with the NH Stormwater Management Manual and Env.Wq. 1500 and a site-specific Operation & Maintenance (O&M) Plan was prepared to ensure the site and BMPs are properly maintained.
- [5]: The project does not propose the storage of fuel, chemicals, industrial waste, or biodegradable raw materials.
- [6&7]: The O&M Plan, Section 3 of this report includes language pertaining to the storage of deicing products and recommends the use of deicing products to only the extent needed to maintain safe travel throughout the site. Snow storage is shown in appropriate locations on the Layout & Materials Plan in the site development plan set.
- [8]: Impervious surfaces have been minimized to the extent possible; parking areas and drive aisles are limited to what is necessary to service the site.
- [9]: As mentioned above, the peak rate of runoff is shown to be reduced at each Study Point for all design storm events. Runoff from paved surfaces is captured to the extent practicable by deep-sump hooded catch basins, providing pretreatment, and infiltration has been provided, meeting the City's treatment requirement.

- Section A(3)(b): This section describes the stormwater management standards for new development and does not apply to the project.
- Section A(3)(c): The stormwater management standards for a redevelopment project apply for the following reasons:
  - It will disturb more than 20,000 square feet
  - It reduces the amount of impervious ground cover
  - The existing property exceeds 40% impervious ground cover

$$\frac{\text{55,086 SF onsite impervious}}{\text{77,053 SF property}} = 72\% \text{ existing impervious cover}$$

Based on the criteria outlined above, the project must provide treatment for at least 30% of the existing impervious area and 50% of any newly proposed impervious surfaces. Because the project will reduce the total impervious cover onsite, the project has been designed to provide treatment for the 1" Water Quality Volume (WQV) over an area that exceeds 30% of the existing impervious ground cover. Treatment is provided through the proposed underground infiltration system by storing a volume greater than the 1" WQV below the overflow weir.

- Existing onsite impervious area = 55,086 SF
- Impervious area that requires treatment = 55,086 x 30% = 16,526 SF
- Impervious area directed to the infiltration system = 32,267 SF = 58% (>30%)
- Required 1" Water Quality Volume = 16,526 SF x $(\frac{1\ foot}{12\ inc})$ = 1,377 cubic feet
- Recharge provided by infiltration system = 1,482 cubic feet > 1,377 cubic feet

- Section A(3)(d)
    - [1]: Erosion control measures have been designed to meet the best management practices set forth in the New Hampshire Stormwater Manual.
    - [2]: As mentioned above, a SWPPP will be completed prior to construction and will be provided to the Community Services Department upon request.
    - [3]: Existing onsite vegetation is minimal but will be preserved wherever possible.
    - [4]: The project has been designed with the intent of minimizing disturbance. Disturbed areas will be stabilized as soon as practicable.
    - [5]: The site design includes appropriate erosion control measures, such as tubular sediment barriers and silt sacks, that will prevent sedimentation of downstream drainage systems.
    - [6]: As directed in the following O&M Plan, and as shown Site Preparation Plan included in the site development plan set, erosion control measures will be installed prior to any land disturbance.
    - [7]: No wetlands, streams, or wetland buffers exist on site.
    - [8]: Notes meeting stabilization requirements are included on the Site Preparation Plan, see Erosion Control and Sediment Control Notes #7, 8, 9, and 13.
    - [9]: Erosion controls will be maintained throughout construction, see Erosion Control and Sediment Control Note #10. A CMP inspection schedule is included with the O&M Plan below.
    - [10]: Winter stabilization notes are included, see Erosion Control and Sediment Control Note #8 on the Site Preparation Plan.
    - [11]: Details for erosion controls are included on sheet C-501 on the site development plan set. Detail 3 on sheet C-501 shows stabilization methods for slopes greater than 3:1.
    - [12]: A note addressing this section is included on the Site Preparation Plan.
    - [13: The project proposes less than 10 acres of disturbance, so this section does not apply.
    - [14]: Use of temporary sediment basins is not anticipated for this project.
- Section A(3)(e): Notes addressing this section are included on the Site Preparation Plan.
- Section A(3)(f): The preceding text meets the requirements of this section.
- Section A(3)(g): The O&M Plan in Section 3 of this report meets the requirements of this section.

Explanation of Drainage System

References:

1. **New Hampshire Stormwater Management Manual, Volumes 2 & 3, December 2008 and Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas In New Hampshire**
2. **SCS - TR55** *(Second Ed., 1986) - for runoff curve numbers.*

Runoff is collected from the roadway by the various deep sump catch basins and routed through the closed pipe network to the infiltration system and eventually to the Central Avenue drainage system. The 2, 10, 25, & 50-year storm events were analyzed for existing versus proposed conditions (see Drainage Summary).

Deep sump catch basin:
Stormwater structure designed to capture and trap sediment, debris, and pollutants from roadway runoff before discharging to downstream BMPs.

Roof Drain:
Roof drains are connected to the building's internal drainage components and tied into the proposed drainage network.

Infiltration Chambers:
An infiltration chamber system is proposed on site to infiltrate collected runoff. Runoff will be pretreated by the Isolator Row prior to infiltration.

Outlet Control Structure:
Stormwater structure designed to control the flow of stormwater discharging from the infiltration chambers through the installation of a weir which is set at a specific elevation to provide the recharge required to meet the treatment criteria.

SECTION 3.0 -
OPERATION AND MAINTENANCE PLAN

General Information

Allen & Major Associates, Inc. has prepared the following Operation and Maintenance Plan for the redevelopment of 47 Central Avenue in Dover, NH. The plan is broken down into the following major sections. The first section gives general information about ownership and responsibility (General Information). The second section describes the erosion and sediment control measures used during construction (Construction Period). The third section describes the long-term pollution prevention measures (Long Term Pollution Prevention Plan). The final section describes the maintenance requirements for the stormwater management practices (Maintenance Plan).

Contact Information

Stormwater Management System Owner:

Lafrance Bowden Hospitality II, LLC
41 Old Bedford Road
Westport, MA 02790
(508) 676-7888

Notification Procedures for Change of Responsibility for O&M

The Stormwater Management System (SMS) for this project is owned by Lafrance Bowden Hospitality II, LLC. The owner shall be legally responsible for the long-term operation and maintenance of this SMS as outlined in this Operation and Maintenance (O&M) Plan. Should ownership of the SMS change, the owner will continue to be responsible until the succeeding owner notifies the municipality that the succeeding owner has assumed such responsibility. Upon subsequent transfers, the responsibility shall continue to be that of transferring owner until the transferee owner notifies the municipality of its assumption of responsibility.

In the event the SMS will serve multiple lots/owners, such as the subdivision of the existing parcel, the owner(s) shall establish an association or other legally enforceable arrangements under which the association or a single party shall have legal responsibility for the operation and maintenance of the entire SMS.

Construction Period

1. Contact the Public Works Department at least two (2) weeks prior to start of construction.

2. Install the catch basin filters and other erosion control measures as shown on the Site Preparation Plan.

3. Site access shall be achieved only from the designated construction entrances to prevent sediment from entering adjacent roadways.

4. All erosion control measures shall be inspected weekly and after all rainfall events, and shall be maintained, repaired or replaced as required or at the direction of the owner's engineer, or the municipality's engineer.

5. Sediment accumulation up-gradient of erosion control products greater than 6" in depth shall be removed and disposed of in accordance with all applicable regulations.

6. If it appears that sediment is exiting the site, catch basin filters shall be installed in all catch basins adjacent to the site. Sediment accumulation on all adjacent catch basin inlets shall be removed, and the filter shall be replaced if torn or damaged.

7. The contractor shall comply with the General and Erosion Notes listed on the Site Plans.

Post-Development Activities

1. Upon completion of all terrain alteration activities that direct stormwater to a particular practice, the responsible party(ies) shall initiate the O&M activities.

2. Paved Areas – Paved areas should be swept as part of the routine site maintenance. Pavement sweeping is an excellent source of control for sedimentation to the drainage system and is typically performed in the spring of each year following the snow melt.

3. Paved Areas – Salt for de-icing on the paved areas during the winter months shall be limited to the minimum amount practicable. Sand containing the minimum amount of calcium chloride (or approved equivalent) needed for handling may be applied as part of the routine winter maintenance activities.

4. All sediments removed from site drainage facilities shall be disposed of properly, and in accordance with applicable local and state regulations.

5. All vegetated areas on the site shall be stabilized and maintained to control erosion. Any disturbed areas shall be re-seeded as soon as practicable.

6. Work within any drainage structures shall be performed in accordance with the latest OSHA regulations, and only by individuals with appropriate OSHA certification.

7. Maintenance Responsibilities **-** All post-construction maintenance activities shall be documented and kept on file and made available to the proper local and state authorities upon request.

8. If ownership of the property is transferred, the new owner(s) shall become the responsible party(ies).

Long Term Pollution Prevention Plan

The Long Term Pollution Prevention Plan (LTPPP) has been prepared and incorporated as part of the Operation and Maintenance of the Stormwater Management System. The purpose of the LTPPP is to identify potential sources of pollution that may affect the quality of stormwater discharges, and to describe the implementation of practices to reduce the pollutants in stormwater discharges. The following items describe the source control and proper procedures for the LTPPP.

Housekeeping

The proposed site redevelopment has been designed to maintain a high level of water quality treatment for all stormwater discharge and groundwater. An Operation and Maintenance (O&M) plan has been prepared and is included in this section of the report. The Owner (or its designee) is responsible for adherence to the O&M plan in a strict and complete manner.

Storage of Materials and Waste Products

There are no proposed exterior (un-covered) storage areas. The trash and waste program for the site includes a dedicated space adjacent to the building for waste & recyclables.

Vehicle Washing

Outdoor vehicle washing has the potential to result in high loads of nutrients, metals, and hydrocarbons during dry weather conditions, as the detergent-rich water used to wash

the grime off the vehicle enters the stormwater drainage system. The proposed redevelopment does not have accommodations for outdoor car washing.

Maintenance of Lawns, Gardens and other Landscaped Areas

It should be recognized that this is a general guideline towards achieving high quality and well-groomed landscaped areas. The grounds staff / landscape contractor must recognize the shortcomings of a general maintenance plan such as this and modify and/or augment it based on weekly, monthly, and yearly observations. To ensure the highest quality conditions, the staff must also recognize and appreciate the need to be aware of the constantly changing conditions of the landscaping and be able to respond to them on a proactive basis. No trash or landscape debris (including lawn clippings) shall be stored or dumped within the landscaped or naturalized areas. Information regarding the removal of invasive species can be found in the appendix of this report.

Fertilizer

Maintenance practices should be aimed at reducing environmental, mechanical and pest stresses to promote healthy and vigorous growth. When necessary, pest outbreaks should be treated with the most sensitive control measures available. Synthetic chemical controls should be used only as a last resort to organic and biological control methods. Fertilizer, synthetic chemical controls and pest management applications (when necessary) shall be performed only by licensed applicators in accordance with the manufacturer's label instructions when environmental conditions are conducive to controlled product application.

Only slow-release organic fertilizers should be used in the landscaped areas to limit the amount of nutrients that could enter downstream resource areas. Fertilization of developed areas on site will be performed within manufacturers labeling instructions and shall not exceed an NPK ratio of 1:1:1 (i.e. Triple 10 fertilizer mix), considered a low nitrogen mixture. Additionally, the fertilizer will include a slow-release element.

Suggested Aeration program

In-season aeration of lawn areas is good cultural practice and is recommended whenever feasible. It should be accomplished with a solid thin tine aeration method to reduce disruption to the use of the area. The depth of solid tine aeration is similar to core type but should be performed when the soil is somewhat drier for a greater overall effect.

Depending on the intensity of use, it can be expected that all landscaped lawn areas will need aeration to reduce compaction at least once per year. The first operation should occur in late May following the spring season. Methods of reducing

compaction vary based on the nature of the compaction. Compaction on newly established landscaped areas is generally limited to the top 2-3" and can be alleviated using hollow core or thin tine aeration methods.

Landscape Maintenance Program Practices:

- **Lawn**
  1. Mow a minimum of once per week in spring, to a height of 2" to 2 1/2" high. Mowing should be frequent enough so that no more than 1/3 of grass blade is removed at each mowing. The top growth supports the roots; the shorter the grass is cut, the less the roots will grow. Short cutting also dries out the soil and encourages weeds to germinate.
  2. Mow approximately once every two weeks from July 1st to August 15th depending on lawn growth.
  3. Mow on a ten-day cycle in fall, when growth is stimulated by cooler nights and increased moisture.
  4. Do not remove grass clippings after mowing.
  5. Keep mower blades sharp to prevent ragged cuts on grass leaves, which cause a brownish appearance and increase the chance for disease to enter a leaf.
- **Shrubs**
  1. Mulch not more than 3" depth with shredded pine or fir bark.
  2. Hand prune annually, immediately after blooming, to remove 1/3 of the above-ground biomass (older stems). Stem removals are to occur within 6" of the ground to open up shrub and maintain two-year wood (the blooming wood).
  3. Hand-prune evergreen shrubs only as needed to remove dead and damaged wood and to maintain the naturalistic form of the shrub. Never mechanically shear evergreen shrubs.
  4. Fertilize with ½ lb. slow-release fertilizer (see above section on Fertilizer) every second year.
- **Trees**
  1. Provide aftercare of new tree plantings for the first three years.
  2. Do not fertilize trees, it artificially stimulates them (unless tree health warrants).
  3. Water once per week for the first year; twice a month for the second; once a month for the third year.
  4. Prune trees on a four-year cycle.

Management of Deicing Chemicals and Snow

Snow shall only be stockpiled on site within the snow storage areas depicted on the Layout & Materials Plan. If the stockpiles of snow do not fit within the designated areas,

then snow will be disposed off-site. It will be the responsibility of the snow removal contractor to properly dispose of transported snow according NHDES. It will be the responsibility of the snow removal contractor to follow these guidelines and all applicable laws and regulations.

The owner (or its designee) will be responsible for the clearing of the sidewalk and building entrances. The Owner may be required to use a de-icing agent such as potassium chloride to maintain a safe walking surface; however, these are to be used at the minimum amount practicable. The de-icing agent for the walkways and building entrances will be kept within the storage rooms located within the buildings. De-icing agents will not be stored outside.

To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends the development of a Road Salt and Deicing Minimization Plan when a development will create one acre or more of pavement, including parking lots and roadways. A component of the plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. It is recommended that snow and ice management operators be Green SnowPro certified, trained and certified as a New Hampshire salt applicator, in accordance with Env-Wq 2203, and the UNH Technology Transfer Center online tool (http://www.roadsalt.unh.edu/Salt/).

Maintenance Plan

Documentation
Maintenance documents shall include a completed maintenance checklist (attached) that will include any applicable notes or other documents as described in this section.

Pretreatment Practices

Deep sump catch basin:
Deep sump catch basins on site are to be inspected and cleaned to ensure proper function. Inspect for damage to frame and grate, and hoods. Remove sediment and trash when depth exceeds 50% of the sump, typically two feet.

Street sweeping:
Street sweeping should be completed by an authorized vehicle to remove sediment, metals, oil, trash, etc. that may be within the roadway and potentially flow to the drainage infrastructure.

Treatment Practices

Chamber Infiltration System:

Stormtech SC-310 Chamber System:
Inspect the catch basins and drain maholes that inlet to the subsurface infiltration system as recommended to ensure no trash or debris enters the system. JetVac maintenance is recommended if sediment within the isolator row has been collected to an average depth of 3".

Operation and Maintenance Schedule Summary

The following is a summary of the maintenance schedule for each of the stormwater BMPs. Note all anomalies, signs of degradation, or corrective actions on the annual Maintenance Checklist.

BMP	MAINTENANCE ITEM	FREQUENCY
Pavement Sweeping	Perform sweeping. No Sand. Distribute de-icing agents and inspect according to narrative.	Inspect/sweep twice per year (early spring & late fall).
Catch Basins	Inspect for damage to frame and grate, and hoods. Remove sediment and trash when depth exceeds 50% of the sump.	Inspect twice per year (early spring & late fall).
Infiltration System	Inspect for sediment accumulation. Remove sediment using a jet-vac and in accordance with the manufacturers' recommendations.	Inspect twice annually, remove sediment as needed.

The Owner or its designee shall keep records of the maintenance of the Stormwater BMPs on a yearly basis. Maintenance documents shall include a complete maintenance checklist.

Supplemental Information

- Operation and Maintenance Plan Schedule
- Operation and Maintenance Log Forms
- Operation and Maintenance Plan Figure
- Anti-Icing Log Form
- Control of Invasive Plants Guide
- Isolator Row Plus O&M Manual

OPERATION AND MAINTENANCE PLAN SCHEDULE

ALLEN & MAJOR ASSOCIATES, INC.

Project: Townplace Suites
Project Address: 47 Central Ave, Dover, NH

Responsible for O&M Plan: Lafrance Bowden Hospitality II, LLC
Address: 41 Old Bedford Road, Westport, MA 02790
Phone: (508) 676-7888

All information within table is derived from New Hampshire Stormwater Manual: Chapter 4, Sections 3 and 4

BMP CATEGORY	BMP OR MAINTENANCE ACTIVITY	SCHEDULE/ FREQUENCY	NOTES	INSPECTION PERFORMED	
				DATE:	BY:
PRETREATMENT PRACTICES	DEEP SUMP CATCH BASIN	May require frequent maintenance. It is recommended that catch basins be inspected at least twice annually.	Sediment should be removed when it approaches half the sump depth. If floating hydrocarbons are observed the material should be removed immediately. Damaged hoods should be replaced when noted by inspection.		
TREATMENT PRACTICES	UNDERGROUND INFILTRATION SYSTEMS	Inspect at least twice annually and with any rainfall event exceeding 2.5 inches in a 24-hour period.	Removal of debris from inlet and outlet structures. Removal of accumulated sediment. Inspection and repair of outlet structures and appurtenances. If system does not drain within a 72-hour period following a rainfall event, a professional should assess the facility's condition.		

OPERATION AND MAINTENANCE PLAN SCHEDULE

ALLEN & MAJOR ASSOCIATES, INC.

Project: Townplace Suites
Project Address: 47 Central Ave, Dover, NH

Responsible for O&M Plan: Lafrance Bowden Hospitality II, LLC
Address: 41 Old Bedford Road, Westport, MA 02790
Phone: (508) 676-7888

OTHER MAINTENANCE	**SNOW STORAGE**	Clear and remove snow to approved storage locations as necessary to ensure systems are working properly and are protected from meltwater pollutants.	Carefully select snow disposal sites before winter. Avoid dumping removed snow over catch basins, or in detention ponds, sediment forebays, rivers, wetlands, and flood plains. It is also prohibited to dump snow in the bioretention basins or gravel swales.		
	STREET SWEEPING	Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.	Sweep, power broom or vacuum paved areas. Submit information that confirms that all street sweepings have been completed in accordance with state and local requirements		

TOWNPLACE SUITES
47 CENTRAL AVENUE
DOVER, NH
MAINTENANCE LOG FORM

INSPECTOR:_____

DATE MAINTENANCE PERFORMED:_____

INSPECTOR'S QUALIFICATIONS:_____

_____

_____

MAINTENANCE LOG

TYPE OF MAINTENANCE PERFORMED	DATE SINCE LAST MAINTENANCE	STAFF MEMBER OR CONTRACTOR WHO PERFORMED MAINTENANCE	CONDITION	ISSUE RESOLVED (YES/NO)

FOLLOW-UP REQUIRED:

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

NOTES:

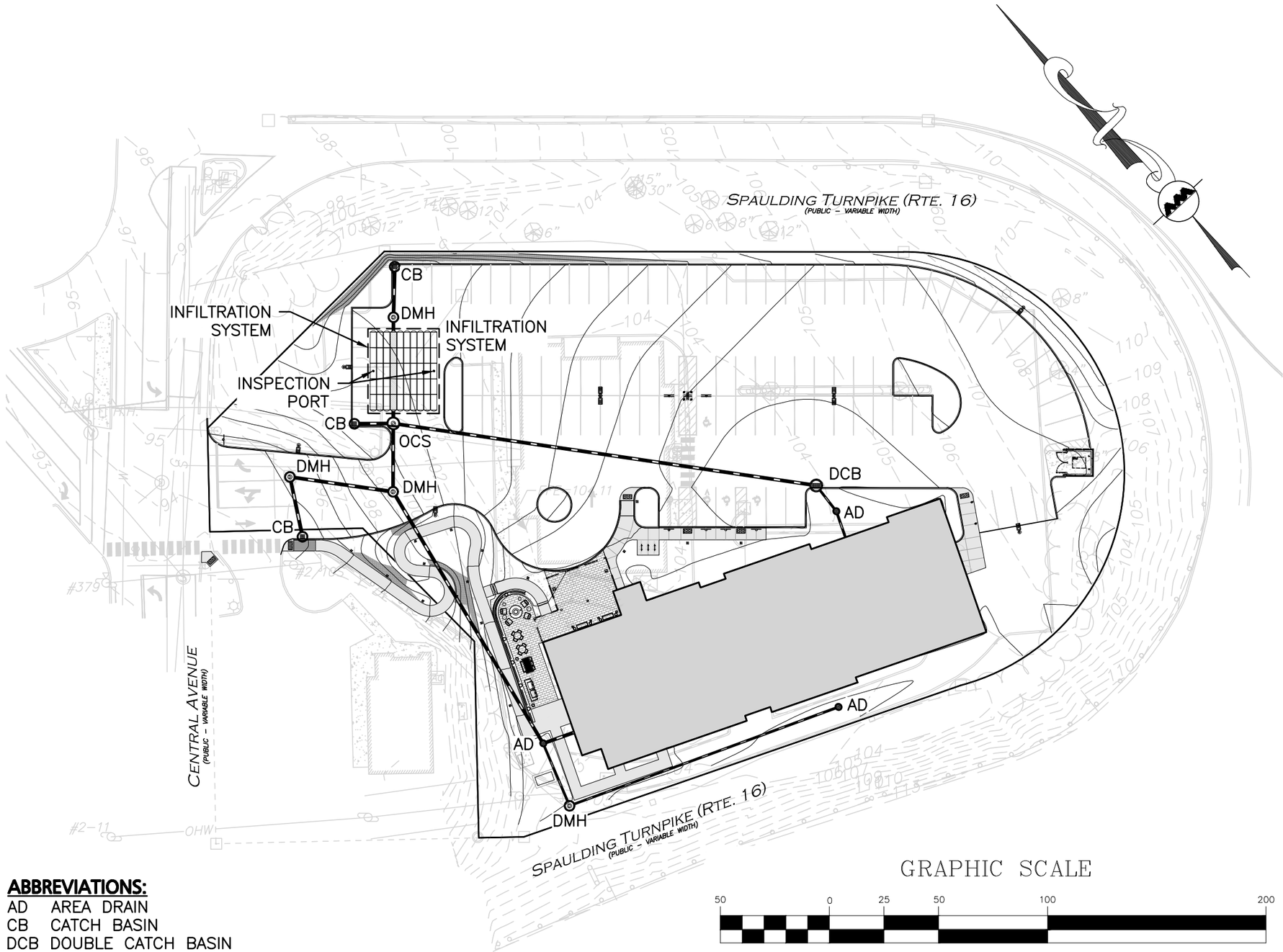
1. Attach copies of maintenance work orders.
2. Owner must keep a minimum of the past 7 years of inspections / operations and maintenance records onsite.

DATE:

MAINTENANCE PERFORMED:

POTENTIAL FUTURE MAINTENANCE REQUIRED:

ADDITIONAL NOTES:



ABBREVIATIONS:

AD AREA DRAIN
CB CATCH BASIN
DCB DOUBLE CATCH BASIN
DMH DRAIN MANHOLE
OCS OUTLET CONTROL STUCTURE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_GRADING & DRAINAGE.DWG

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 COMMENTS

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 50'	DWG. NAME:	C1173-31-FIGURES
DESIGNED BY:	SM	CHECKED BY:	BDJ

PREPARED BY:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE:

OPERATION & MAINTENANCE FIGURE

SHEET No.

1

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Anti-icing Route Data Form				
Truck Station:				
Date:				
Air Temperature	Pavement Temperature	Relative Humidity	Dew Point	Sky
Reason for applying:				
Route:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				
Name:				

Figure 4-2. Example Documentation Form for Anti-Icing

CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

Background:

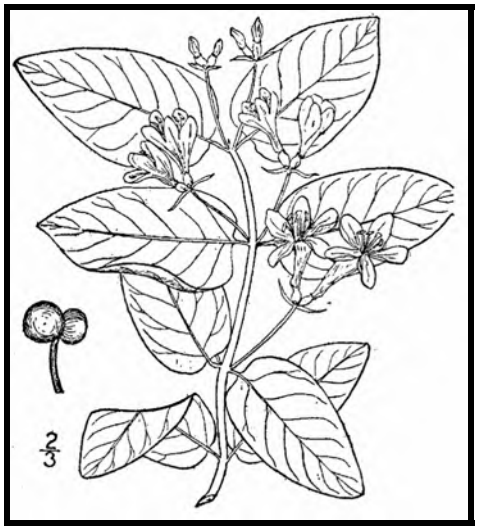
Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

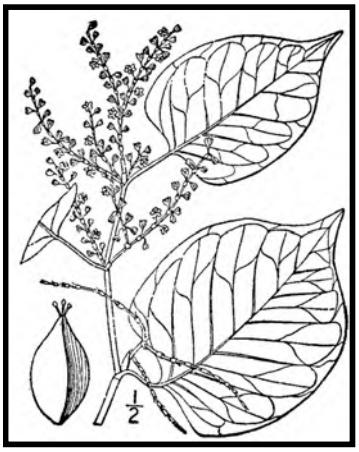
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

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Isolator® Row Plus
O&M Manual



ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

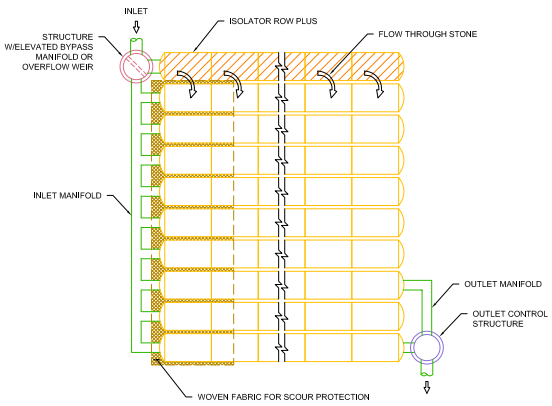
Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*



Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

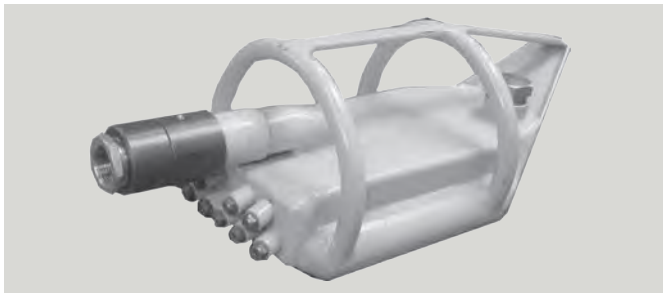
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

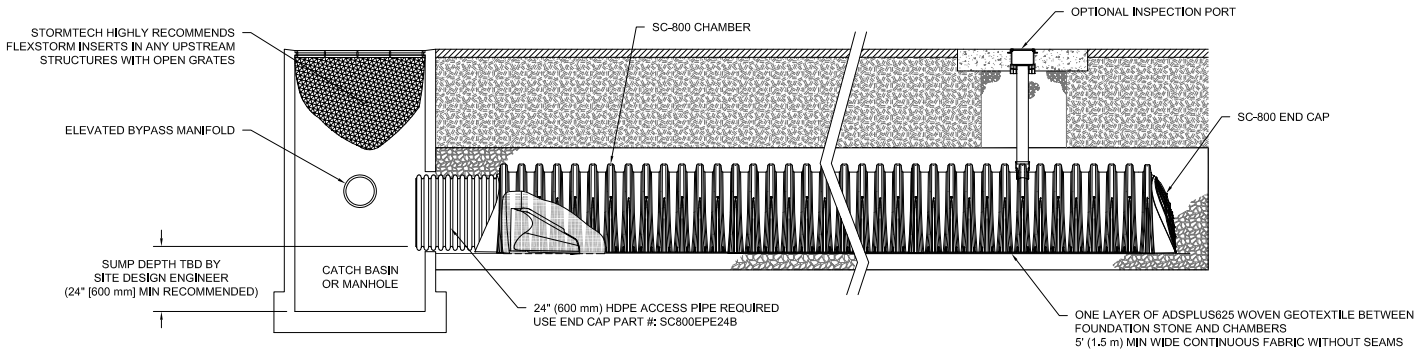
Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**







StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

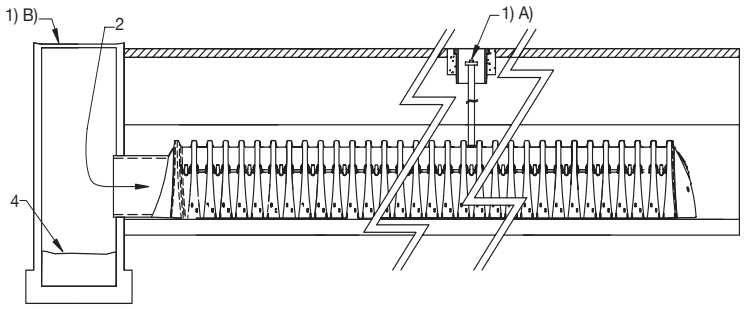
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

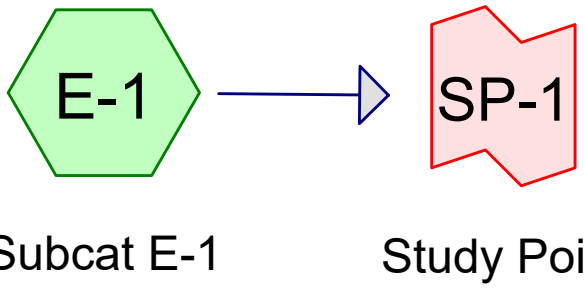
Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

adspipe.com
800-821-6710

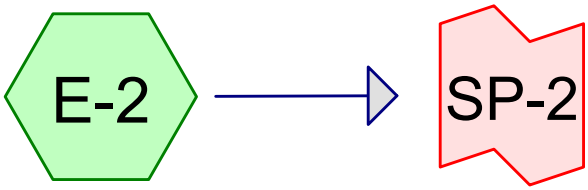
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SECTION 4.0 -
EXISTING DRAINAGE ANALYSIS

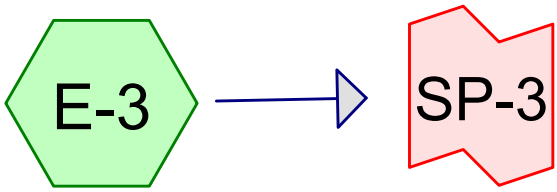
Existing HydroCAD



Subcat E-1 Study Point



Subcat E-2 Study Point



Subcat E-3 Study Point

Subcat Reach Pond Link

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.15	2
2	10-year	Type III 24-hr		Default	24.00	1	4.75	2
3	25-year	Type III 24-hr		Default	24.00	1	6.01	2
4	50-year	Type III 24-hr		Default	24.00	1	7.19	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
31,324	61	>75% Grass cover, Good, HSG B (E-1, E-2, E-3)
49,273	98	Paved parking, HSG B (E-1)
6,902	98	Roofs, HSG B (E-1)
87,499	**85**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
87,499	HSG B	E-1, E-2, E-3
0	HSG C	
0	HSG D	
0	Other	
87,499		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	31,324	0	0	0	31,324	>75% Grass cover, Good	
0	49,273	0	0	0	49,273	Paved parking	
0	6,902	0	0	0	6,902	Roofs	
0	**87,499**	**0**	**0**	**0**	**87,499**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=81,166 sf 69.21% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=87 Runoff=4.08 cfs 12,653 cf

Subcatchment E-2: Subcat E-2 Runoff Area=4,090 sf 0.00% Impervious Runoff Depth=0.42"
Tc=6.0 min CN=61 Runoff=0.03 cfs 144 cf

Subcatchment E-3: Subcat E-3 Runoff Area=2,242 sf 0.00% Impervious Runoff Depth=0.42"
Tc=6.0 min CN=61 Runoff=0.02 cfs 79 cf

Link SP-1: Study Point Inflow=4.08 cfs 12,653 cf
Primary=4.08 cfs 12,653 cf

Link SP-2: Study Point Inflow=0.03 cfs 144 cf
Primary=0.03 cfs 144 cf

Link SP-3: Study Point Inflow=0.02 cfs 79 cf
Primary=0.02 cfs 79 cf

Total Runoff Area = 87,499 sf Runoff Volume = 12,877 cf Average Runoff Depth = 1.77"
35.80% Pervious = 31,324 sf 64.20% Impervious = 56,175 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 4.08 cfs @ 12.09 hrs, Volume= 12,653 cf, Depth= 1.87"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
24,992	61	>75% Grass cover, Good, HSG B
49,273	98	Paved parking, HSG B
6,902	98	Roofs, HSG B
81,166	87	Weighted Average
24,992		30.79% Pervious Area
56,175		69.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-2: Subcat E-2

Runoff = 0.03 cfs @ 12.12 hrs, Volume= 144 cf, Depth= 0.42"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
4,090	61	>75% Grass cover, Good, HSG B
4,090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-3: Subcat E-3

Runoff = 0.02 cfs @ 12.12 hrs, Volume= 79 cf, Depth= 0.42"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
2,242	61	>75% Grass cover, Good, HSG B
2,242		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Link SP-1: Study Point

Inflow Area = 81,166 sf, 69.21% Impervious, Inflow Depth = 1.87" for 2-year event
Inflow = 4.08 cfs @ 12.09 hrs, Volume= 12,653 cf
Primary = 4.08 cfs @ 12.09 hrs, Volume= 12,653 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 4,090 sf, 0.00% Impervious, Inflow Depth = 0.42" for 2-year event
Inflow = 0.03 cfs @ 12.12 hrs, Volume= 144 cf
Primary = 0.03 cfs @ 12.12 hrs, Volume= 144 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,242 sf, 0.00% Impervious, Inflow Depth = 0.42" for 2-year event
Inflow = 0.02 cfs @ 12.12 hrs, Volume= 79 cf
Primary = 0.02 cfs @ 12.12 hrs, Volume= 79 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=81,166 sf 69.21% Impervious Runoff Depth=3.33"
Tc=6.0 min CN=87 Runoff=7.17 cfs 22,540 cf

Subcatchment E-2: Subcat E-2 Runoff Area=4,090 sf 0.00% Impervious Runoff Depth=1.22"
Tc=6.0 min CN=61 Runoff=0.12 cfs 416 cf

Subcatchment E-3: Subcat E-3 Runoff Area=2,242 sf 0.00% Impervious Runoff Depth=1.22"
Tc=6.0 min CN=61 Runoff=0.07 cfs 228 cf

Link SP-1: Study Point Inflow=7.17 cfs 22,540 cf
Primary=7.17 cfs 22,540 cf

Link SP-2: Study Point Inflow=0.12 cfs 416 cf
Primary=0.12 cfs 416 cf

Link SP-3: Study Point Inflow=0.07 cfs 228 cf
Primary=0.07 cfs 228 cf

Total Runoff Area = 87,499 sf Runoff Volume = 23,185 cf Average Runoff Depth = 3.18"
35.80% Pervious = 31,324 sf 64.20% Impervious = 56,175 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 7.17 cfs @ 12.09 hrs, Volume= 22,540 cf, Depth= 3.33"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
24,992	61	>75% Grass cover, Good, HSG B
49,273	98	Paved parking, HSG B
6,902	98	Roofs, HSG B
81,166	87	Weighted Average
24,992		30.79% Pervious Area
56,175		69.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-2: Subcat E-2

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 416 cf, Depth= 1.22"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
4,090	61	>75% Grass cover, Good, HSG B
4,090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-3: Subcat E-3

Runoff = 0.07 cfs @ 12.10 hrs, Volume= 228 cf, Depth= 1.22"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
2,242	61	>75% Grass cover, Good, HSG B
2,242		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Link SP-1: Study Point

Inflow Area = 81,166 sf, 69.21% Impervious, Inflow Depth = 3.33" for 10-year event
Inflow = 7.17 cfs @ 12.09 hrs, Volume= 22,540 cf
Primary = 7.17 cfs @ 12.09 hrs, Volume= 22,540 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 4,090 sf, 0.00% Impervious, Inflow Depth = 1.22" for 10-year event
Inflow = 0.12 cfs @ 12.10 hrs, Volume= 416 cf
Primary = 0.12 cfs @ 12.10 hrs, Volume= 416 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,242 sf, 0.00% Impervious, Inflow Depth = 1.22" for 10-year event
Inflow = 0.07 cfs @ 12.10 hrs, Volume= 228 cf
Primary = 0.07 cfs @ 12.10 hrs, Volume= 228 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=81,166 sf 69.21% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=87 Runoff=9.61 cfs 30,618 cf

Subcatchment E-2: Subcat E-2 Runoff Area=4,090 sf 0.00% Impervious Runoff Depth=2.01"
Tc=6.0 min CN=61 Runoff=0.21 cfs 686 cf

Subcatchment E-3: Subcat E-3 Runoff Area=2,242 sf 0.00% Impervious Runoff Depth=2.01"
Tc=6.0 min CN=61 Runoff=0.12 cfs 376 cf

Link SP-1: Study Point Inflow=9.61 cfs 30,618 cf
Primary=9.61 cfs 30,618 cf

Link SP-2: Study Point Inflow=0.21 cfs 686 cf
Primary=0.21 cfs 686 cf

Link SP-3: Study Point Inflow=0.12 cfs 376 cf
Primary=0.12 cfs 376 cf

Total Runoff Area = 87,499 sf Runoff Volume = 31,680 cf Average Runoff Depth = 4.34"
35.80% Pervious = 31,324 sf 64.20% Impervious = 56,175 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 9.61 cfs @ 12.09 hrs, Volume= 30,618 cf, Depth= 4.53"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
24,992	61	>75% Grass cover, Good, HSG B
49,273	98	Paved parking, HSG B
6,902	98	Roofs, HSG B
81,166	87	Weighted Average
24,992		30.79% Pervious Area
56,175		69.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-2: Subcat E-2

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 686 cf, Depth= 2.01"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
4,090	61	>75% Grass cover, Good, HSG B
4,090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-3: Subcat E-3

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 376 cf, Depth= 2.01"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
2,242	61	>75% Grass cover, Good, HSG B
2,242		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Link SP-1: Study Point

Inflow Area = 81,166 sf, 69.21% Impervious, Inflow Depth = 4.53" for 25-year event
Inflow = 9.61 cfs @ 12.09 hrs, Volume= 30,618 cf
Primary = 9.61 cfs @ 12.09 hrs, Volume= 30,618 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 4,090 sf, 0.00% Impervious, Inflow Depth = 2.01" for 25-year event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 686 cf
Primary = 0.21 cfs @ 12.10 hrs, Volume= 686 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,242 sf, 0.00% Impervious, Inflow Depth = 2.01" for 25-year event
Inflow = 0.12 cfs @ 12.10 hrs, Volume= 376 cf
Primary = 0.12 cfs @ 12.10 hrs, Volume= 376 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1 Runoff Area=81,166 sf 69.21% Impervious Runoff Depth=5.66"
Tc=6.0 min CN=87 Runoff=11.88 cfs 38,305 cf

Subcatchment E-2: Subcat E-2 Runoff Area=4,090 sf 0.00% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=61 Runoff=0.31 cfs 968 cf

Subcatchment E-3: Subcat E-3 Runoff Area=2,242 sf 0.00% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=61 Runoff=0.17 cfs 531 cf

Link SP-1: Study Point Inflow=11.88 cfs 38,305 cf
Primary=11.88 cfs 38,305 cf

Link SP-2: Study Point Inflow=0.31 cfs 968 cf
Primary=0.31 cfs 968 cf

Link SP-3: Study Point Inflow=0.17 cfs 531 cf
Primary=0.17 cfs 531 cf

Total Runoff Area = 87,499 sf Runoff Volume = 39,804 cf Average Runoff Depth = 5.46"
35.80% Pervious = 31,324 sf 64.20% Impervious = 56,175 sf

Summary for Subcatchment E-1: Subcat E-1

Runoff = 11.88 cfs @ 12.08 hrs, Volume= 38,305 cf, Depth= 5.66"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
24,992	61	>75% Grass cover, Good, HSG B
49,273	98	Paved parking, HSG B
6,902	98	Roofs, HSG B
81,166	87	Weighted Average
24,992		30.79% Pervious Area
56,175		69.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-2: Subcat E-2

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 968 cf, Depth= 2.84"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
4,090	61	>75% Grass cover, Good, HSG B
4,090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment E-3: Subcat E-3

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 531 cf, Depth= 2.84"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
2,242	61	>75% Grass cover, Good, HSG B
2,242		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Link SP-1: Study Point

Inflow Area = 81,166 sf, 69.21% Impervious, Inflow Depth = 5.66" for 50-year event
Inflow = 11.88 cfs @ 12.08 hrs, Volume= 38,305 cf
Primary = 11.88 cfs @ 12.08 hrs, Volume= 38,305 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 4,090 sf, 0.00% Impervious, Inflow Depth = 2.84" for 50-year event
Inflow = 0.31 cfs @ 12.09 hrs, Volume= 968 cf
Primary = 0.31 cfs @ 12.09 hrs, Volume= 968 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,242 sf, 0.00% Impervious, Inflow Depth = 2.84" for 50-year event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 531 cf
Primary = 0.17 cfs @ 12.09 hrs, Volume= 531 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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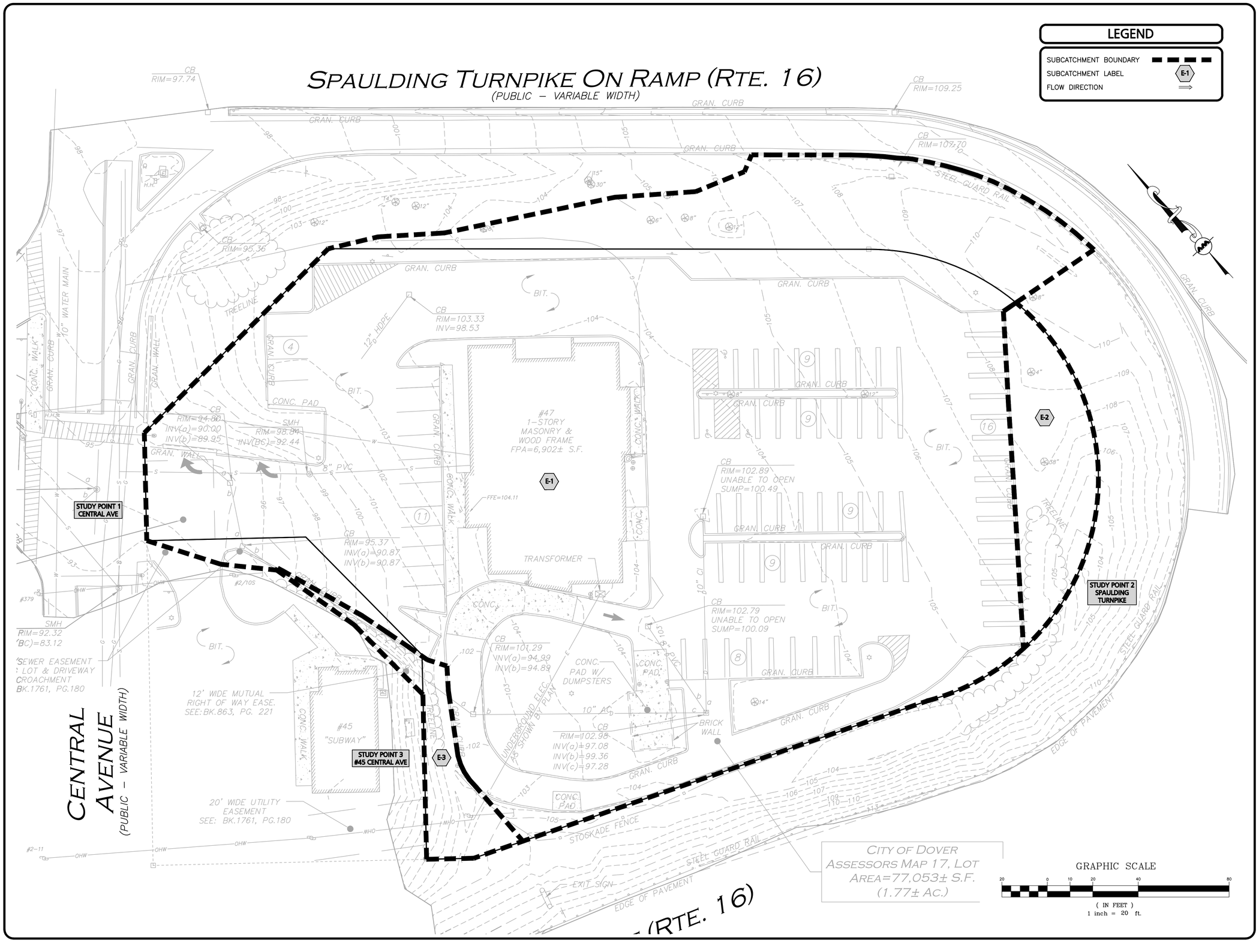
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Existing Watershed Plan



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REV	DATE	DESCRIPTION

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

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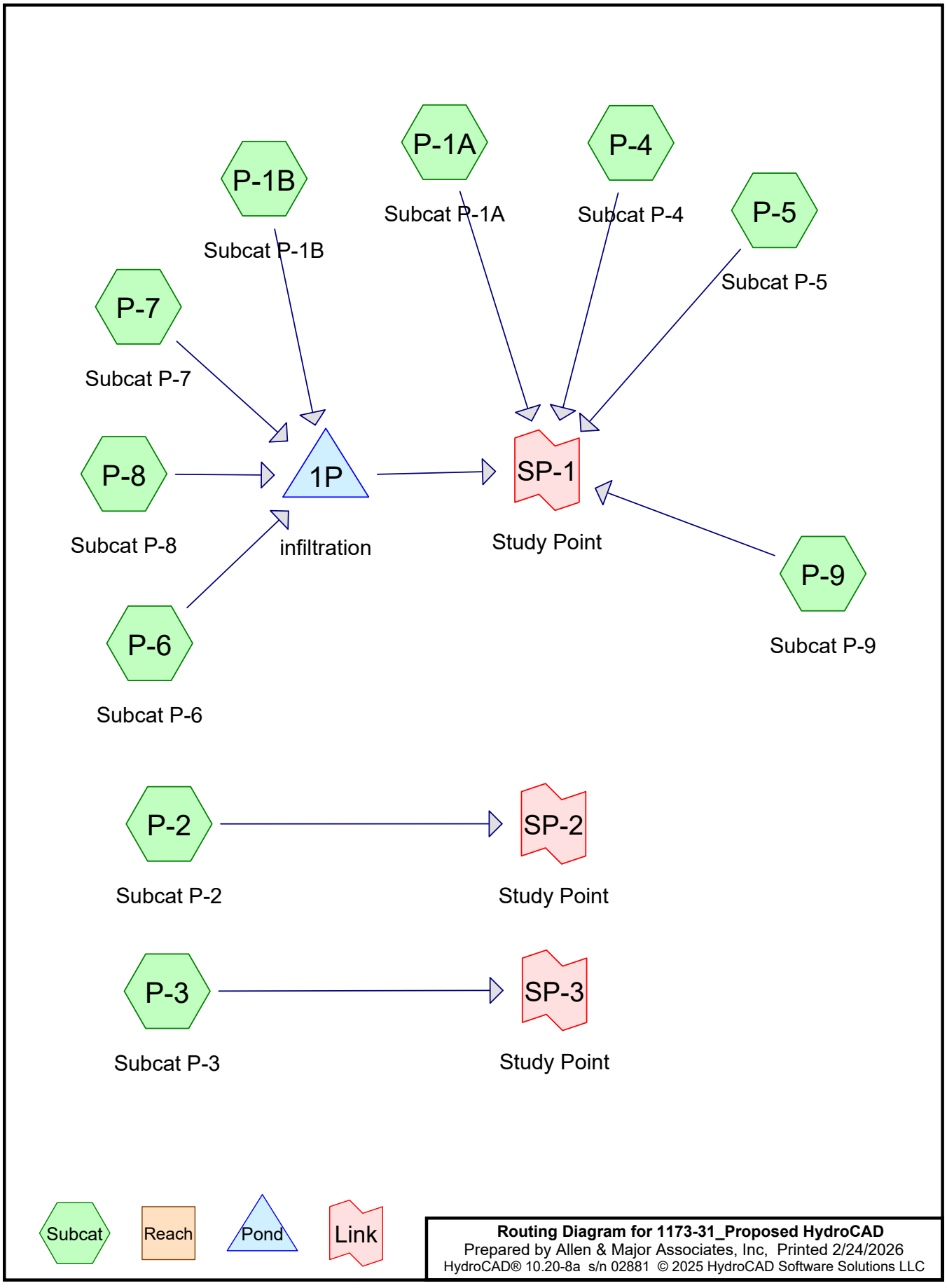
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DRAWING TITLE:	SHEET No.
EXISTING WATERSHED PLAN	WS-1

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SECTION 5.0 -
PROPOSED DRAINAGE ANALYSIS

Proposed HydroCAD



Routing Diagram for 1173-31_Proposed HydroCAD
Prepared by Allen & Major Associates, Inc, Printed 2/24/2026
HydroCAD® 10.20-8a s/n 02881 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.15	2
2	10-year	Type III 24-hr		Default	24.00	1	4.75	2
3	25-year	Type III 24-hr		Default	24.00	1	6.01	2
4	50-year	Type III 24-hr		Default	24.00	1	7.19	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
31,856	61	>75% Grass cover, Good, HSG B (P-2, P-3, P-4, P-5, P-6, P-7, P-8, P-9)
43,025	98	Paved parking, HSG B (P-3, P-4, P-5, P-6, P-7, P-8, P-9)
12,617	98	Roofs, HSG B (P-1A, P-1B)
87,499	**85**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
87,499	HSG B	P-1A, P-1B, P-2, P-3, P-4, P-5, P-6, P-7, P-8, P-9
0	HSG C	
0	HSG D	
0	Other	
87,499		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	31,856	0	0	0	31,856	>75% Grass cover, Good	
0	43,025	0	0	0	43,025	Paved parking	
0	12,617	0	0	0	12,617	Roofs	
0	**87,499**	**0**	**0**	**0**	**87,499**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	94.20	92.00	52.0	0.0423	0.013	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1A: Subcat P-1A Runoff Area=8,615 sf 100.00% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=98 Runoff=0.60 cfs 2,095 cf

Subcatchment P-1B: Subcat P-1B Runoff Area=4,002 sf 100.00% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=98 Runoff=0.28 cfs 973 cf

Subcatchment P-2: Subcat P-2 Runoff Area=2,014 sf 0.00% Impervious Runoff Depth=0.42"
Tc=6.0 min CN=61 Runoff=0.01 cfs 71 cf

Subcatchment P-3: Subcat P-3 Runoff Area=2,113 sf 1.30% Impervious Runoff Depth=0.42"
Tc=6.0 min CN=61 Runoff=0.01 cfs 75 cf

Subcatchment P-4: Subcat P-4 Runoff Area=11,269 sf 69.99% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=87 Runoff=0.57 cfs 1,757 cf

Subcatchment P-5: Subcat P-5 Runoff Area=8,854 sf 70.27% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=87 Runoff=0.45 cfs 1,380 cf

Subcatchment P-6: Subcat P-6 Runoff Area=5,880 sf 83.35% Impervious Runoff Depth=2.30"
Tc=6.0 min CN=92 Runoff=0.36 cfs 1,129 cf

Subcatchment P-7: Subcat P-7 Runoff Area=17,940 sf 46.42% Impervious Runoff Depth=1.24"
Tc=6.0 min CN=78 Runoff=0.58 cfs 1,849 cf

Subcatchment P-8: Subcat P-8 Runoff Area=20,053 sf 74.99% Impervious Runoff Depth=2.04"
Tc=6.0 min CN=89 Runoff=1.09 cfs 3,402 cf

Subcatchment P-9: Subcat P-9 Runoff Area=6,758 sf 9.21% Impervious Runoff Depth=0.54"
Tc=6.0 min CN=64 Runoff=0.07 cfs 302 cf

Pond 1P: infiltration Peak Elev=97.31' Storage=1,647 cf Inflow=2.31 cfs 7,353 cf
Discarded=0.01 cfs 2,165 cf Primary=2.27 cfs 5,188 cf Outflow=2.28 cfs 7,353 cf

Link SP-1: Study Point Inflow=3.94 cfs 10,721 cf
Primary=3.94 cfs 10,721 cf

Link SP-2: Study Point Inflow=0.01 cfs 71 cf
Primary=0.01 cfs 71 cf

Link SP-3: Study Point Inflow=0.01 cfs 75 cf
Primary=0.01 cfs 75 cf

Total Runoff Area = 87,499 sf Runoff Volume = 13,032 cf Average Runoff Depth = 1.79"
36.41% Pervious = 31,856 sf 63.59% Impervious = 55,642 sf

Summary for Subcatchment P-1A: Subcat P-1A

Runoff = 0.60 cfs @ 12.08 hrs, Volume= 2,095 cf, Depth= 2.92"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
8,615	98	Roofs, HSG B
8,615		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-1B: Subcat P-1B

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 973 cf, Depth= 2.92"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
4,002	98	Roofs, HSG B
4,002		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-2: Subcat P-2

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 71 cf, Depth= 0.42"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
2,014	61	>75% Grass cover, Good, HSG B
2,014		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-3: Subcat P-3

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 75 cf, Depth= 0.42"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
27	98	Paved parking, HSG B
2,086	61	>75% Grass cover, Good, HSG B
2,113	61	Weighted Average
2,086		98.70% Pervious Area
27		1.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-4: Subcat P-4

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 1,757 cf, Depth= 1.87"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
3,382	61	>75% Grass cover, Good, HSG B
7,887	98	Paved parking, HSG B
11,269	87	Weighted Average
3,382		30.01% Pervious Area
7,887		69.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-5: Subcat P-5

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 1,380 cf, Depth= 1.87"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
2,632	61	>75% Grass cover, Good, HSG B
6,222	98	Paved parking, HSG B
8,854	87	Weighted Average
2,632		29.73% Pervious Area
6,222		70.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-6: Subcat P-6

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 1,129 cf, Depth= 2.30"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
4,901	98	Paved parking, HSG B
979	61	>75% Grass cover, Good, HSG B
5,880	92	Weighted Average
979		16.65% Pervious Area
4,901		83.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-7: Subcat P-7

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 1,849 cf, Depth= 1.24"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
8,327	98	Paved parking, HSG B
9,613	61	>75% Grass cover, Good, HSG B
17,940	78	Weighted Average
9,613		53.58% Pervious Area
8,327		46.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-8: Subcat P-8

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 3,402 cf, Depth= 2.04"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
5,015	61	>75% Grass cover, Good, HSG B
15,038	98	Paved parking, HSG B
20,053	89	Weighted Average
5,015		25.01% Pervious Area
15,038		74.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-9: Subcat P-9

Runoff = 0.07 cfs @ 12.11 hrs, Volume= 302 cf, Depth= 0.54"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.15"

Area (sf)	CN	Description
6,136	61	>75% Grass cover, Good, HSG B
623	98	Paved parking, HSG B
6,758	64	Weighted Average
6,136		90.79% Pervious Area
623		9.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Pond 1P: infiltration

Inflow Area = 47,875 sf, 67.40% Impervious, Inflow Depth = 1.84" for 2-year event
Inflow = 2.31 cfs @ 12.09 hrs, Volume= 7,353 cf
Outflow = 2.28 cfs @ 12.10 hrs, Volume= 7,353 cf, Atten= 1%, Lag= 0.8 min
Discarded = 0.01 cfs @ 12.10 hrs, Volume= 2,165 cf
Primary = 2.27 cfs @ 12.10 hrs, Volume= 5,188 cf
Routed to Link SP-1 : Study Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.31' @ 12.10 hrs Surf.Area= 1,264 sf Storage= 1,647 cf
Flood Elev= 97.00' Surf.Area= 1,264 sf Storage= 1,482 cf

Plug-Flow detention time= 406.6 min calculated for 7,353 cf (100% of inflow)
Center-of-Mass det. time= 406.6 min (1,218.6 - 812.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.00'	885 cf	**32.58'W x 38.80'L x 2.33'H Field A** 2,950 cf Overall - 737 cf Embedded = 2,213 cf x 40.0% Voids
#2A	95.50'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 10 Rows
#3	95.58'	75 cf	**5.00'D x 3.83'H OCS**-Impervious
		1,697 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.00'	**0.300 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Primary	94.20'	**12.0" Round Culvert** L= 52.0' Ke= 0.500 Inlet / Outlet Invert= 94.20' / 92.00' S= 0.0423 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	97.00'	**4.0' long x 2.60' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 12.10 hrs HW=97.31' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.26 cfs @ 12.10 hrs HW=97.31' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 2.26 cfs of 6.11 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 2.26 cfs @ 1.83 fps)

Summary for Link SP-1: Study Point

Inflow Area = 83,371 sf, 66.71% Impervious, Inflow Depth = 1.54" for 2-year event
Inflow = 3.94 cfs @ 12.10 hrs, Volume= 10,721 cf
Primary = 3.94 cfs @ 12.10 hrs, Volume= 10,721 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 2,014 sf, 0.00% Impervious, Inflow Depth = 0.42" for 2-year event
Inflow = 0.01 cfs @ 12.12 hrs, Volume= 71 cf
Primary = 0.01 cfs @ 12.12 hrs, Volume= 71 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,113 sf, 1.30% Impervious, Inflow Depth = 0.42" for 2-year event
Inflow = 0.01 cfs @ 12.12 hrs, Volume= 75 cf
Primary = 0.01 cfs @ 12.12 hrs, Volume= 75 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1A: Subcat P-1A Runoff Area=8,615 sf 100.00% Impervious Runoff Depth=4.51"
Tc=6.0 min CN=98 Runoff=0.92 cfs 3,241 cf

Subcatchment P-1B: Subcat P-1B Runoff Area=4,002 sf 100.00% Impervious Runoff Depth=4.51"
Tc=6.0 min CN=98 Runoff=0.43 cfs 1,505 cf

Subcatchment P-2: Subcat P-2 Runoff Area=2,014 sf 0.00% Impervious Runoff Depth=1.22"
Tc=6.0 min CN=61 Runoff=0.06 cfs 205 cf

Subcatchment P-3: Subcat P-3 Runoff Area=2,113 sf 1.30% Impervious Runoff Depth=1.22"
Tc=6.0 min CN=61 Runoff=0.06 cfs 215 cf

Subcatchment P-4: Subcat P-4 Runoff Area=11,269 sf 69.99% Impervious Runoff Depth=3.33"
Tc=6.0 min CN=87 Runoff=1.00 cfs 3,129 cf

Subcatchment P-5: Subcat P-5 Runoff Area=8,854 sf 70.27% Impervious Runoff Depth=3.33"
Tc=6.0 min CN=87 Runoff=0.78 cfs 2,459 cf

Subcatchment P-6: Subcat P-6 Runoff Area=5,880 sf 83.35% Impervious Runoff Depth=3.85"
Tc=6.0 min CN=92 Runoff=0.58 cfs 1,884 cf

Subcatchment P-7: Subcat P-7 Runoff Area=17,940 sf 46.42% Impervious Runoff Depth=2.50"
Tc=6.0 min CN=78 Runoff=1.21 cfs 3,739 cf

Subcatchment P-8: Subcat P-8 Runoff Area=20,053 sf 74.99% Impervious Runoff Depth=3.53"
Tc=6.0 min CN=89 Runoff=1.86 cfs 5,904 cf

Subcatchment P-9: Subcat P-9 Runoff Area=6,758 sf 9.21% Impervious Runoff Depth=1.42"
Tc=6.0 min CN=64 Runoff=0.24 cfs 800 cf

Pond 1P: infiltration Peak Elev=97.47' Storage=1,659 cf Inflow=4.07 cfs 13,032 cf
Discarded=0.01 cfs 2,232 cf Primary=4.06 cfs 10,800 cf Outflow=4.07 cfs 13,032 cf

Link SP-1: Study Point Inflow=6.99 cfs 20,429 cf
Primary=6.99 cfs 20,429 cf

Link SP-2: Study Point Inflow=0.06 cfs 205 cf
Primary=0.06 cfs 205 cf

Link SP-3: Study Point Inflow=0.06 cfs 215 cf
Primary=0.06 cfs 215 cf

Total Runoff Area = 87,499 sf Runoff Volume = 23,081 cf Average Runoff Depth = 3.17"
36.41% Pervious = 31,856 sf 63.59% Impervious = 55,642 sf

Summary for Subcatchment P-1A: Subcat P-1A

Runoff = 0.92 cfs @ 12.08 hrs, Volume= 3,241 cf, Depth= 4.51"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
8,615	98	Roofs, HSG B
8,615		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-1B: Subcat P-1B

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 1,505 cf, Depth= 4.51"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
4,002	98	Roofs, HSG B
4,002		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-2: Subcat P-2

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 205 cf, Depth= 1.22"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
2,014	61	>75% Grass cover, Good, HSG B
2,014		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-3: Subcat P-3

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 215 cf, Depth= 1.22"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
27	98	Paved parking, HSG B
2,086	61	>75% Grass cover, Good, HSG B
2,113	61	Weighted Average
2,086		98.70% Pervious Area
27		1.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-4: Subcat P-4

Runoff = 1.00 cfs @ 12.09 hrs, Volume= 3,129 cf, Depth= 3.33"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
3,382	61	>75% Grass cover, Good, HSG B
7,887	98	Paved parking, HSG B
11,269	87	Weighted Average
3,382		30.01% Pervious Area
7,887		69.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-5: Subcat P-5

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 2,459 cf, Depth= 3.33"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
2,632	61	>75% Grass cover, Good, HSG B
6,222	98	Paved parking, HSG B
8,854	87	Weighted Average
2,632		29.73% Pervious Area
6,222		70.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-6: Subcat P-6

Runoff = 0.58 cfs @ 12.08 hrs, Volume= 1,884 cf, Depth= 3.85"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
4,901	98	Paved parking, HSG B
979	61	>75% Grass cover, Good, HSG B
5,880	92	Weighted Average
979		16.65% Pervious Area
4,901		83.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-7: Subcat P-7

Runoff = 1.21 cfs @ 12.09 hrs, Volume= 3,739 cf, Depth= 2.50"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
8,327	98	Paved parking, HSG B
9,613	61	>75% Grass cover, Good, HSG B
17,940	78	Weighted Average
9,613		53.58% Pervious Area
8,327		46.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-8: Subcat P-8

Runoff = 1.86 cfs @ 12.09 hrs, Volume= 5,904 cf, Depth= 3.53"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
5,015	61	>75% Grass cover, Good, HSG B
15,038	98	Paved parking, HSG B
20,053	89	Weighted Average
5,015		25.01% Pervious Area
15,038		74.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-9: Subcat P-9

Runoff = 0.24 cfs @ 12.10 hrs, Volume= 800 cf, Depth= 1.42"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.75"

Area (sf)	CN	Description
6,136	61	>75% Grass cover, Good, HSG B
623	98	Paved parking, HSG B
6,758	64	Weighted Average
6,136		90.79% Pervious Area
623		9.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Pond 1P: infiltration

Inflow Area = 47,875 sf, 67.40% Impervious, Inflow Depth = 3.27" for 10-year event
Inflow = 4.07 cfs @ 12.09 hrs, Volume= 13,032 cf
Outflow = 4.07 cfs @ 12.09 hrs, Volume= 13,032 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.01 cfs @ 12.02 hrs, Volume= 2,232 cf
Primary = 4.06 cfs @ 12.09 hrs, Volume= 10,800 cf
Routed to Link SP-1 : Study Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.47' @ 12.09 hrs Surf.Area= 1,264 sf Storage= 1,659 cf
Flood Elev= 97.00' Surf.Area= 1,264 sf Storage= 1,482 cf

Plug-Flow detention time= 238.1 min calculated for 13,030 cf (100% of inflow)
Center-of-Mass det. time= 238.5 min (1,037.0 - 798.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.00'	885 cf	**32.58'W x 38.80'L x 2.33'H Field A** 2,950 cf Overall - 737 cf Embedded = 2,213 cf x 40.0% Voids
#2A	95.50'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 10 Rows
#3	95.58'	75 cf	**5.00'D x 3.83'H OCS**-Impervious
		1,697 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.00'	**0.300 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Primary	94.20'	**12.0" Round Culvert** L= 52.0' Ke= 0.500 Inlet / Outlet Invert= 94.20' / 92.00' S= 0.0423 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	97.00'	**4.0' long x 2.60' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 12.02 hrs HW=97.37' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=4.05 cfs @ 12.09 hrs HW=97.47' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 4.05 cfs of 6.29 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 4.05 cfs @ 2.23 fps)

Summary for Link SP-1: Study Point

Inflow Area = 83,371 sf, 66.71% Impervious, Inflow Depth = 2.94" for 10-year event
Inflow = 6.99 cfs @ 12.09 hrs, Volume= 20,429 cf
Primary = 6.99 cfs @ 12.09 hrs, Volume= 20,429 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 2,014 sf, 0.00% Impervious, Inflow Depth = 1.22" for 10-year event
Inflow = 0.06 cfs @ 12.10 hrs, Volume= 205 cf
Primary = 0.06 cfs @ 12.10 hrs, Volume= 205 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,113 sf, 1.30% Impervious, Inflow Depth = 1.22" for 10-year event
Inflow = 0.06 cfs @ 12.10 hrs, Volume= 215 cf
Primary = 0.06 cfs @ 12.10 hrs, Volume= 215 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1A: Subcat P-1A Runoff Area=8,615 sf 100.00% Impervious Runoff Depth=5.77"
Tc=6.0 min CN=98 Runoff=1.16 cfs 4,144 cf

Subcatchment P-1B: Subcat P-1B Runoff Area=4,002 sf 100.00% Impervious Runoff Depth=5.77"
Tc=6.0 min CN=98 Runoff=0.54 cfs 1,925 cf

Subcatchment P-2: Subcat P-2 Runoff Area=2,014 sf 0.00% Impervious Runoff Depth=2.01"
Tc=6.0 min CN=61 Runoff=0.10 cfs 338 cf

Subcatchment P-3: Subcat P-3 Runoff Area=2,113 sf 1.30% Impervious Runoff Depth=2.01"
Tc=6.0 min CN=61 Runoff=0.11 cfs 354 cf

Subcatchment P-4: Subcat P-4 Runoff Area=11,269 sf 69.99% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=87 Runoff=1.33 cfs 4,251 cf

Subcatchment P-5: Subcat P-5 Runoff Area=8,854 sf 70.27% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=87 Runoff=1.05 cfs 3,340 cf

Subcatchment P-6: Subcat P-6 Runoff Area=5,880 sf 83.35% Impervious Runoff Depth=5.08"
Tc=6.0 min CN=92 Runoff=0.75 cfs 2,489 cf

Subcatchment P-7: Subcat P-7 Runoff Area=17,940 sf 46.42% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=78 Runoff=1.73 cfs 5,364 cf

Subcatchment P-8: Subcat P-8 Runoff Area=20,053 sf 74.99% Impervious Runoff Depth=4.75"
Tc=6.0 min CN=89 Runoff=2.46 cfs 7,930 cf

Subcatchment P-9: Subcat P-9 Runoff Area=6,758 sf 9.21% Impervious Runoff Depth=2.27"
Tc=6.0 min CN=64 Runoff=0.40 cfs 1,279 cf

Pond 1P: infiltration Peak Elev=97.57' Storage=1,661 cf Inflow=5.48 cfs 17,707 cf
Discarded=0.01 cfs 2,267 cf Primary=5.48 cfs 15,439 cf Outflow=5.49 cfs 17,707 cf

Link SP-1: Study Point Inflow=9.42 cfs 28,453 cf
Primary=9.42 cfs 28,453 cf

Link SP-2: Study Point Inflow=0.10 cfs 338 cf
Primary=0.10 cfs 338 cf

Link SP-3: Study Point Inflow=0.11 cfs 354 cf
Primary=0.11 cfs 354 cf

Total Runoff Area = 87,499 sf Runoff Volume = 31,413 cf Average Runoff Depth = 4.31"
36.41% Pervious = 31,856 sf 63.59% Impervious = 55,642 sf

Summary for Subcatchment P-1A: Subcat P-1A

Runoff = 1.16 cfs @ 12.08 hrs, Volume= 4,144 cf, Depth= 5.77"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
8,615	98	Roofs, HSG B
8,615		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-1B: Subcat P-1B

Runoff = 0.54 cfs @ 12.08 hrs, Volume= 1,925 cf, Depth= 5.77"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
4,002	98	Roofs, HSG B
4,002		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-2: Subcat P-2

Runoff = 0.10 cfs @ 12.10 hrs, Volume= 338 cf, Depth= 2.01"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
2,014	61	>75% Grass cover, Good, HSG B
2,014		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-3: Subcat P-3

Runoff = 0.11 cfs @ 12.10 hrs, Volume= 354 cf, Depth= 2.01"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
27	98	Paved parking, HSG B
2,086	61	>75% Grass cover, Good, HSG B
2,113	61	Weighted Average
2,086		98.70% Pervious Area
27		1.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-4: Subcat P-4

Runoff = 1.33 cfs @ 12.09 hrs, Volume= 4,251 cf, Depth= 4.53"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
3,382	61	>75% Grass cover, Good, HSG B
7,887	98	Paved parking, HSG B
11,269	87	Weighted Average
3,382		30.01% Pervious Area
7,887		69.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-5: Subcat P-5

Runoff = 1.05 cfs @ 12.09 hrs, Volume= 3,340 cf, Depth= 4.53"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
2,632	61	>75% Grass cover, Good, HSG B
6,222	98	Paved parking, HSG B
8,854	87	Weighted Average
2,632		29.73% Pervious Area
6,222		70.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-6: Subcat P-6

Runoff = 0.75 cfs @ 12.08 hrs, Volume= 2,489 cf, Depth= 5.08"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
4,901	98	Paved parking, HSG B
979	61	>75% Grass cover, Good, HSG B
5,880	92	Weighted Average
979		16.65% Pervious Area
4,901		83.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-7: Subcat P-7

Runoff = 1.73 cfs @ 12.09 hrs, Volume= 5,364 cf, Depth= 3.59"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
8,327	98	Paved parking, HSG B
9,613	61	>75% Grass cover, Good, HSG B
17,940	78	Weighted Average
9,613		53.58% Pervious Area
8,327		46.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-8: Subcat P-8

Runoff = 2.46 cfs @ 12.08 hrs, Volume= 7,930 cf, Depth= 4.75"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
5,015	61	>75% Grass cover, Good, HSG B
15,038	98	Paved parking, HSG B
20,053	89	Weighted Average
5,015		25.01% Pervious Area
15,038		74.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-9: Subcat P-9

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 1,279 cf, Depth= 2.27"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.01"

Area (sf)	CN	Description
6,136	61	>75% Grass cover, Good, HSG B
623	98	Paved parking, HSG B
6,758	64	Weighted Average
6,136		90.79% Pervious Area
623		9.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Pond 1P: infiltration

Inflow Area = 47,875 sf, 67.40% Impervious, Inflow Depth = 4.44" for 25-year event
Inflow = 5.48 cfs @ 12.09 hrs, Volume= 17,707 cf
Outflow = 5.49 cfs @ 12.08 hrs, Volume= 17,707 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.01 cfs @ 11.98 hrs, Volume= 2,267 cf
Primary = 5.48 cfs @ 12.08 hrs, Volume= 15,439 cf
Routed to Link SP-1 : Study Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.57' @ 12.08 hrs Surf.Area= 1,264 sf Storage= 1,661 cf
Flood Elev= 97.00' Surf.Area= 1,264 sf Storage= 1,482 cf

Plug-Flow detention time= 180.2 min calculated for 17,704 cf (100% of inflow)
Center-of-Mass det. time= 180.5 min (971.8 - 791.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.00'	885 cf	**32.58'W x 38.80'L x 2.33'H Field A** 2,950 cf Overall - 737 cf Embedded = 2,213 cf x 40.0% Voids
#2A	95.50'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 10 Rows
#3	95.58'	75 cf	**5.00'D x 3.83'H OCS**-Impervious
		1,697 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.00'	**0.300 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Primary	94.20'	**12.0" Round Culvert** L= 52.0' Ke= 0.500 Inlet / Outlet Invert= 94.20' / 92.00' S= 0.0423 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	97.00'	**4.0' long x 2.60' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 11.98 hrs HW=97.37' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=5.46 cfs @ 12.08 hrs HW=97.57' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 5.46 cfs of 6.41 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 5.46 cfs @ 2.47 fps)

Summary for Link SP-1: Study Point

Inflow Area = 83,371 sf, 66.71% Impervious, Inflow Depth = 4.10" for 25-year event
Inflow = 9.42 cfs @ 12.08 hrs, Volume= 28,453 cf
Primary = 9.42 cfs @ 12.08 hrs, Volume= 28,453 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 2,014 sf, 0.00% Impervious, Inflow Depth = 2.01" for 25-year event
Inflow = 0.10 cfs @ 12.10 hrs, Volume= 338 cf
Primary = 0.10 cfs @ 12.10 hrs, Volume= 338 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,113 sf, 1.30% Impervious, Inflow Depth = 2.01" for 25-year event
Inflow = 0.11 cfs @ 12.10 hrs, Volume= 354 cf
Primary = 0.11 cfs @ 12.10 hrs, Volume= 354 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1A: Subcat P-1A Runoff Area=8,615 sf 100.00% Impervious Runoff Depth=6.95"
Tc=6.0 min CN=98 Runoff=1.40 cfs 4,990 cf

Subcatchment P-1B: Subcat P-1B Runoff Area=4,002 sf 100.00% Impervious Runoff Depth=6.95"
Tc=6.0 min CN=98 Runoff=0.65 cfs 2,318 cf

Subcatchment P-2: Subcat P-2 Runoff Area=2,014 sf 0.00% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=61 Runoff=0.15 cfs 477 cf

Subcatchment P-3: Subcat P-3 Runoff Area=2,113 sf 1.30% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=61 Runoff=0.16 cfs 500 cf

Subcatchment P-4: Subcat P-4 Runoff Area=11,269 sf 69.99% Impervious Runoff Depth=5.66"
Tc=6.0 min CN=87 Runoff=1.65 cfs 5,318 cf

Subcatchment P-5: Subcat P-5 Runoff Area=8,854 sf 70.27% Impervious Runoff Depth=5.66"
Tc=6.0 min CN=87 Runoff=1.30 cfs 4,179 cf

Subcatchment P-6: Subcat P-6 Runoff Area=5,880 sf 83.35% Impervious Runoff Depth=6.24"
Tc=6.0 min CN=92 Runoff=0.92 cfs 3,059 cf

Subcatchment P-7: Subcat P-7 Runoff Area=17,940 sf 46.42% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=78 Runoff=2.23 cfs 6,948 cf

Subcatchment P-8: Subcat P-8 Runoff Area=20,053 sf 74.99% Impervious Runoff Depth=5.89"
Tc=6.0 min CN=89 Runoff=3.02 cfs 9,849 cf

Subcatchment P-9: Subcat P-9 Runoff Area=6,758 sf 9.21% Impervious Runoff Depth=3.15"
Tc=6.0 min CN=64 Runoff=0.57 cfs 1,772 cf

Pond 1P: infiltration Peak Elev=97.92' Storage=1,668 cf Inflow=6.81 cfs 22,174 cf
Discarded=0.01 cfs 2,292 cf Primary=6.79 cfs 19,882 cf Outflow=6.80 cfs 22,174 cf

Link SP-1: Study Point Inflow=11.69 cfs 36,141 cf
Primary=11.69 cfs 36,141 cf

Link SP-2: Study Point Inflow=0.15 cfs 477 cf
Primary=0.15 cfs 477 cf

Link SP-3: Study Point Inflow=0.16 cfs 500 cf
Primary=0.16 cfs 500 cf

Total Runoff Area = 87,499 sf Runoff Volume = 39,409 cf Average Runoff Depth = 5.40"
36.41% Pervious = 31,856 sf 63.59% Impervious = 55,642 sf

Summary for Subcatchment P-1A: Subcat P-1A

Runoff = 1.40 cfs @ 12.08 hrs, Volume= 4,990 cf, Depth= 6.95"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
8,615	98	Roofs, HSG B
8,615		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-1B: Subcat P-1B

Runoff = 0.65 cfs @ 12.08 hrs, Volume= 2,318 cf, Depth= 6.95"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
4,002	98	Roofs, HSG B
4,002		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-2: Subcat P-2

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 477 cf, Depth= 2.84"
Routed to Link SP-2 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
2,014	61	>75% Grass cover, Good, HSG B
2,014		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-3: Subcat P-3

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 500 cf, Depth= 2.84"
Routed to Link SP-3 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
27	98	Paved parking, HSG B
2,086	61	>75% Grass cover, Good, HSG B
2,113	61	Weighted Average
2,086		98.70% Pervious Area
27		1.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-4: Subcat P-4

Runoff = 1.65 cfs @ 12.08 hrs, Volume= 5,318 cf, Depth= 5.66"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
3,382	61	>75% Grass cover, Good, HSG B
7,887	98	Paved parking, HSG B
11,269	87	Weighted Average
3,382		30.01% Pervious Area
7,887		69.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-5: Subcat P-5

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 4,179 cf, Depth= 5.66"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
2,632	61	>75% Grass cover, Good, HSG B
6,222	98	Paved parking, HSG B
8,854	87	Weighted Average
2,632		29.73% Pervious Area
6,222		70.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-6: Subcat P-6

Runoff = 0.92 cfs @ 12.08 hrs, Volume= 3,059 cf, Depth= 6.24"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
4,901	98	Paved parking, HSG B
979	61	>75% Grass cover, Good, HSG B
5,880	92	Weighted Average
979		16.65% Pervious Area
4,901		83.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-7: Subcat P-7

Runoff = 2.23 cfs @ 12.09 hrs, Volume= 6,948 cf, Depth= 4.65"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
8,327	98	Paved parking, HSG B
9,613	61	>75% Grass cover, Good, HSG B
17,940	78	Weighted Average
9,613		53.58% Pervious Area
8,327		46.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-8: Subcat P-8

Runoff = 3.02 cfs @ 12.08 hrs, Volume= 9,849 cf, Depth= 5.89"
Routed to Pond 1P : infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
5,015	61	>75% Grass cover, Good, HSG B
15,038	98	Paved parking, HSG B
20,053	89	Weighted Average
5,015		25.01% Pervious Area
15,038		74.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Subcatchment P-9: Subcat P-9

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 1,772 cf, Depth= 3.15"
Routed to Link SP-1 : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-year Rainfall=7.19"

Area (sf)	CN	Description
6,136	61	>75% Grass cover, Good, HSG B
623	98	Paved parking, HSG B
6,758	64	Weighted Average
6,136		90.79% Pervious Area
623		9.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min**

Summary for Pond 1P: infiltration

Inflow Area = 47,875 sf, 67.40% Impervious, Inflow Depth = 5.56" for 50-year event
Inflow = 6.81 cfs @ 12.09 hrs, Volume= 22,174 cf
Outflow = 6.80 cfs @ 12.09 hrs, Volume= 22,174 cf, Atten= 0%, Lag= 0.3 min
Discarded = 0.01 cfs @ 11.91 hrs, Volume= 2,292 cf
Primary = 6.79 cfs @ 12.09 hrs, Volume= 19,882 cf
Routed to Link SP-1 : Study Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 97.92' @ 12.09 hrs Surf.Area= 1,264 sf Storage= 1,668 cf
Flood Elev= 97.00' Surf.Area= 1,264 sf Storage= 1,482 cf

Plug-Flow detention time= 147.0 min calculated for 22,171 cf (100% of inflow)
Center-of-Mass det. time= 147.4 min (933.3 - 786.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	95.00'	885 cf	**32.58'W x 38.80'L x 2.33'H Field A** 2,950 cf Overall - 737 cf Embedded = 2,213 cf x 40.0% Voids
#2A	95.50'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 10 Rows
#3	95.58'	75 cf	**5.00'D x 3.83'H OCS**-Impervious
		1,697 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	95.00'	**0.300 in/hr Exfiltration over Wetted area** Phase-In= 0.01'
#2	Primary	94.20'	**12.0" Round Culvert** L= 52.0' Ke= 0.500 Inlet / Outlet Invert= 94.20' / 92.00' S= 0.0423 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	97.00'	**4.0' long x 2.60' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 11.91 hrs HW=97.35' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=6.78 cfs @ 12.09 hrs HW=97.92' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 6.78 cfs @ 8.64 fps)
└**3=Sharp-Crested Rectangular Weir** (Passes 6.78 cfs of 10.98 cfs potential flow)

Summary for Link SP-1: Study Point

Inflow Area = 83,371 sf, 66.71% Impervious, Inflow Depth = 5.20" for 50-year event
Inflow = 11.69 cfs @ 12.09 hrs, Volume= 36,141 cf
Primary = 11.69 cfs @ 12.09 hrs, Volume= 36,141 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-2: Study Point

Inflow Area = 2,014 sf, 0.00% Impervious, Inflow Depth = 2.84" for 50-year event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 477 cf
Primary = 0.15 cfs @ 12.09 hrs, Volume= 477 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link SP-3: Study Point

Inflow Area = 2,113 sf, 1.30% Impervious, Inflow Depth = 2.84" for 50-year event
Inflow = 0.16 cfs @ 12.09 hrs, Volume= 500 cf
Primary = 0.16 cfs @ 12.09 hrs, Volume= 500 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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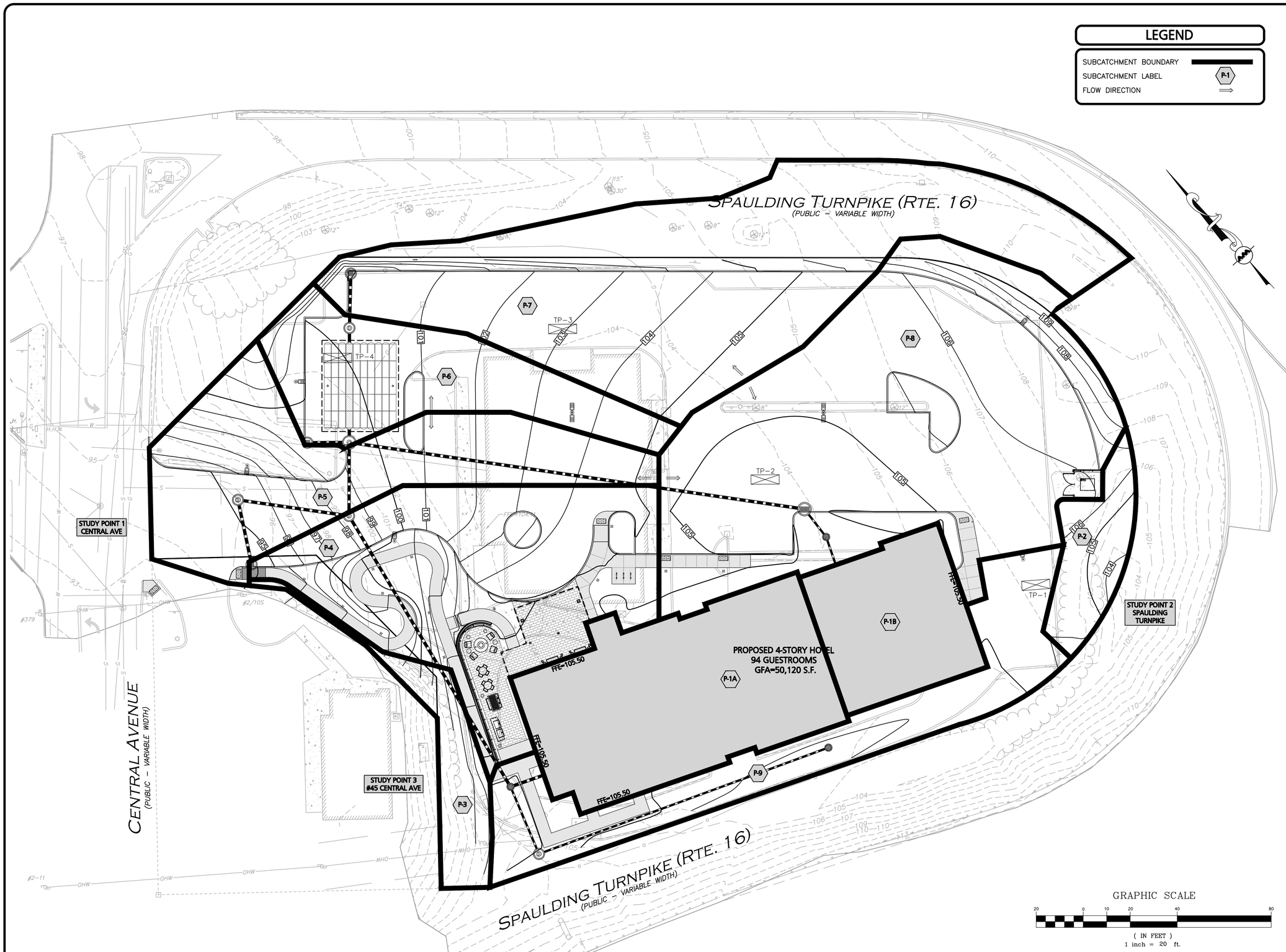
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Proposed Watershed Plan



R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_WATERSHED-PROPOSED.DWG

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

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PROPOSED WATERSHED PLAN	WS-2

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SECTION 6.0 -
APPENDIX

Extreme Precipitation Tables

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	43.182 degrees North
Longitude	70.875 degrees West
Elevation	20 feet
Date/Time	Mon Dec 22 2025 11:32:27 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.55	2.00	2.61	2.86	**1yr**	2.31	2.75	3.15	3.88	4.45	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.91	2.45	3.15	3.50	**2yr**	2.79	3.37	3.86	4.59	5.23	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.39	3.08	3.98	4.49	**5yr**	3.52	4.31	4.93	5.81	6.57	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.83	3.66	4.75	5.41	**10yr**	4.21	5.21	5.94	6.93	7.80	**10yr**
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.70	3.53	4.61	6.01	6.95	**25yr**	5.32	6.68	7.60	8.77	9.80	**25yr**
50yr	0.52	0.83	1.06	1.48	2.00	2.66	**50yr**	1.73	2.46	3.18	4.19	5.50	7.19	8.39	**50yr**	6.36	8.07	9.16	10.49	11.66	**50yr**
100yr	0.58	0.94	1.21	1.71	2.32	3.12	**100yr**	2.00	2.89	3.75	4.96	6.54	8.59	10.14	**100yr**	7.61	9.75	11.04	12.54	13.88	**100yr**
200yr	0.64	1.05	1.36	1.95	2.70	3.67	**200yr**	2.33	3.40	4.42	5.89	7.80	10.28	12.26	**200yr**	9.10	11.79	13.32	15.00	16.52	**200yr**
500yr	0.75	1.24	1.62	2.35	3.30	4.53	**500yr**	2.84	4.22	5.50	7.38	9.83	13.03	15.75	**500yr**	11.54	15.15	17.06	19.02	20.81	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.92	1.26	1.58	2.12	2.46	**1yr**	1.88	2.37	2.88	3.33	4.02	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.36	3.04	3.40	**2yr**	2.69	3.27	3.75	4.47	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.71	4.12	**5yr**	3.29	3.97	4.61	5.41	6.12	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.81	2.44	3.13	4.27	4.78	**10yr**	3.78	4.60	5.32	6.25	7.02	**10yr**
25yr	0.44	0.66	0.82	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.84	3.65	4.93	5.79	**25yr**	4.37	5.57	6.49	7.56	8.44	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.18	**50yr**	1.52	2.13	2.35	3.19	4.09	5.63	6.69	**50yr**	4.98	6.43	7.53	8.74	9.69	**50yr**
100yr	0.54	0.81	1.01	1.46	2.01	2.50	**100yr**	1.73	2.45	2.63	3.57	4.57	6.41	7.71	**100yr**	5.67	7.41	8.75	10.09	11.10	**100yr**
200yr	0.59	0.89	1.13	1.64	2.28	2.86	**200yr**	1.97	2.80	2.93	4.00	5.10	7.29	8.89	**200yr**	6.45	8.55	10.15	11.65	12.75	**200yr**
500yr	0.69	1.03	1.32	1.92	2.73	3.44	**500yr**	2.36	3.36	3.40	4.63	5.91	8.62	10.72	**500yr**	7.63	10.31	12.35	14.13	15.25	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.24	1.74	2.22	2.88	3.08	**1yr**	2.55	2.96	3.43	4.22	4.82	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.47	1.96	2.51	3.29	3.62	**2yr**	2.91	3.48	3.99	4.74	5.45	**2yr**
5yr	0.39	0.61	0.75	1.03	1.31	1.58	**5yr**	1.13	1.55	1.86	2.50	3.20	4.24	4.85	**5yr**	3.75	4.66	5.27	6.22	6.99	**5yr**
10yr	0.46	0.70	0.87	1.22	1.57	1.92	**10yr**	1.36	1.88	2.24	3.05	3.86	5.22	6.05	**10yr**	4.62	5.82	6.64	7.64	8.53	**10yr**
25yr	0.56	0.84	1.05	1.50	1.97	2.48	**25yr**	1.70	2.42	2.88	3.97	4.97	7.10	8.12	**25yr**	6.28	7.81	8.88	10.06	11.11	**25yr**
50yr	0.64	0.98	1.22	1.75	2.35	3.00	**50yr**	2.03	2.93	3.50	4.84	6.03	8.78	10.18	**50yr**	7.77	9.79	11.08	12.37	13.59	**50yr**
100yr	0.75	1.13	1.41	2.04	2.80	3.62	**100yr**	2.42	3.54	4.24	5.93	7.34	10.86	12.75	**100yr**	9.61	12.26	13.82	15.24	16.63	**100yr**
200yr	0.87	1.30	1.65	2.39	3.34	4.39	**200yr**	2.88	4.30	5.16	7.26	8.92	13.47	15.99	**200yr**	11.92	15.37	17.26	18.76	20.38	**200yr**
500yr	1.06	1.58	2.03	2.95	4.19	5.65	**500yr**	3.62	5.52	6.67	9.50	11.56	17.92	21.57	**500yr**	15.86	20.74	23.17	24.73	26.67	**500yr**

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Northeast Regional Climate Center

NRCS Web Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Strafford County, New Hampshire



December 22, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,540 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 26, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SfC	Suffield silt loam, 8 to 15 percent slopes	0.6	10.4%
WdB	Windsor loamy sand, 3 to 8 percent slopes	4.5	79.2%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	0.6	10.4%
Totals for Area of Interest		**5.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Strafford County, New Hampshire

SfC—Suffield silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9d8v
Elevation: 0 to 250 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Suffield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suffield

Typical profile

H1 - 0 to 19 inches: silt loam
H2 - 19 to 28 inches: silt loam
H3 - 28 to 41 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY017NH - Well Drained Lake Plain
Hydric soil rating: No

Minor Components

Not named

Percent of map unit: 9 percent
Hydric soil rating: No

Buxton

Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

WdB—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

WfB—Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d9b
Elevation: 0 to 280 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Windsor variant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor Variant

Typical profile

H1 - 0 to 26 inches: loamy fine sand
H2 - 26 to 30 inches: loamy sand
H3 - 30 to 42 inches: silt loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

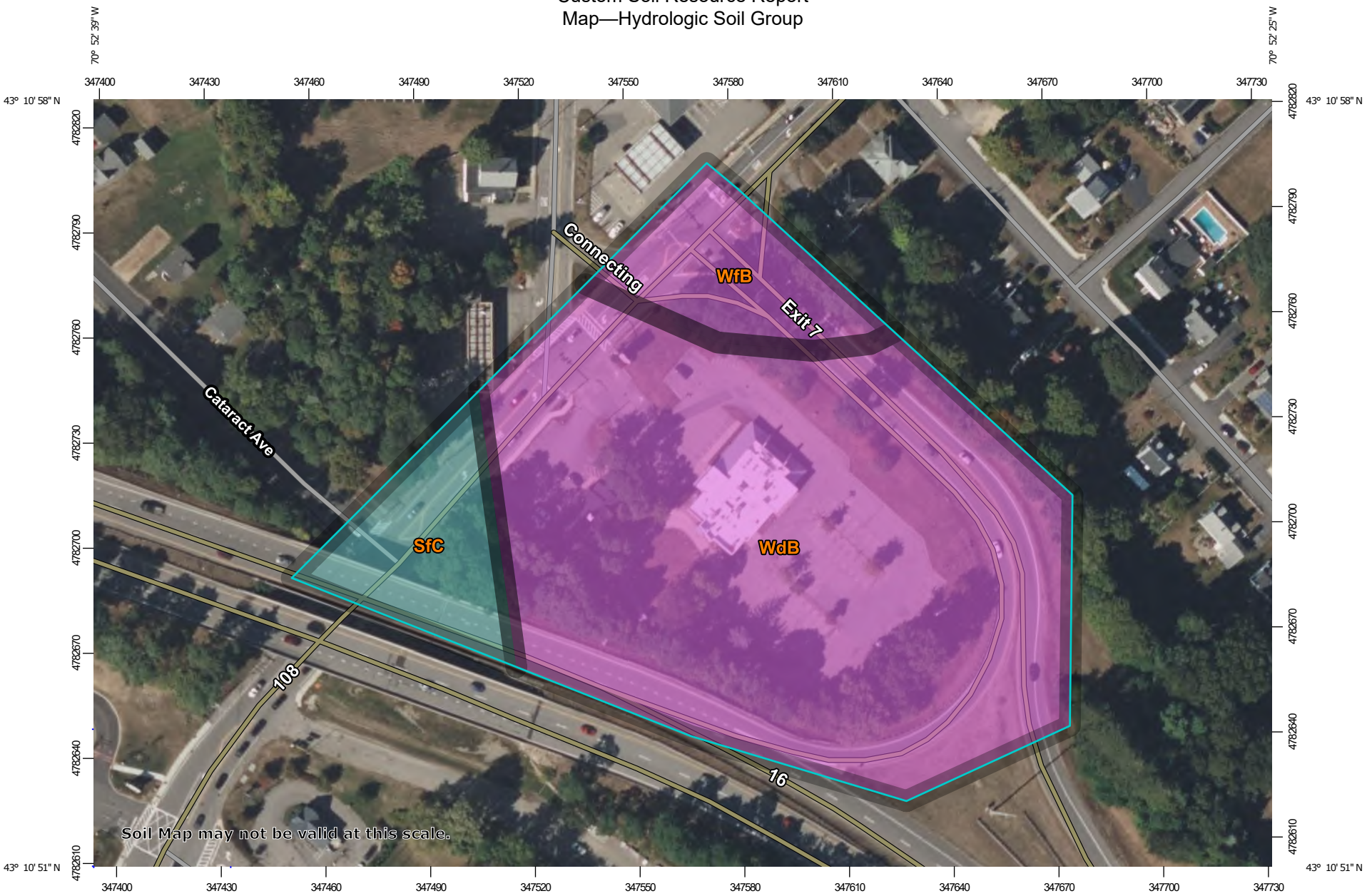
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



Map Scale: 1:1,540 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 26, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
SfC	Suffield silt loam, 8 to 15 percent slopes	C	0.6	10.4%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	4.5	79.2%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	A	0.6	10.4%
Totals for Area of Interest			**5.7**	**100.0%**

Rating Options—Hydrologic Soil Group

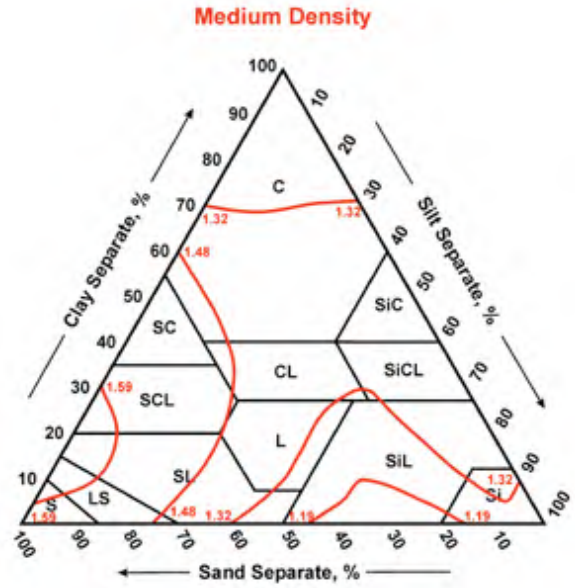
Aggregation Method: Dominant Condition

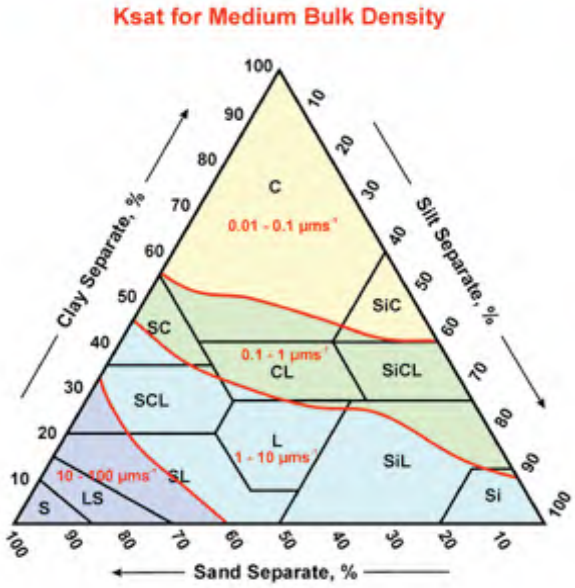
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Ksat Values for New Hampshire Soils

K_{sat} VALUES
FOR
NEW HAMPSHIRE SOILS
(Including Hydrologic and DES Soil Lot Sizing Groups)





From: **Guide for Estimating Ksat from Soil Properties** (**Exhibit 618-9**). (http://soils.usda.gov/technical/handbook/contents/part618ex.html)

Sponsored by the Society of Soil Scientists of Northern New England
SSSNNE Special Publication No. 5
September, 2009

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Mundal	610	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	gravelly sandy loam in Cd
Natchaug	496			0.20	2.0	D	6	Organic Materials - Freshwater	mesic	loamy	no	organic over loam
Naumburg	214	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	frigid	sandy	yes	
Newfields	444	0.6	2.0	0.60	2.0	B	3	Loose till, sandy textures	mesic	loamy over sandy	no	sandy or sandy-skeletal
Nicholville	632	0.6	2.0	0.60	2.0	C	3	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Ninigret	513	0.6	6.0	6.00	20.0	B	3	Outwash and Stream Terraces	mesic	loamy over sandy	no	sandy or sandy-skeletal
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Ondawa	101	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	loamy over loamy sand
Ondawa	201	0.6	6.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	frigid	loamy	no	occ flood, loamy over l. sand
Ossipee	495			0.20	2.0	D	6	Organic Materials - Freshwater	frigid	loamy	no	organic over loam
Pawcatuck	497			20.00	100.0	D	6	Tidal Flat	mesic	sandy or sandy-skeletal	no	organic over sand
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Peacham	549	0.6	2.0	0.00	0.2	D	6	Firm, platy, silty till, schist & phylitte	frigid	loamy	no	organic over loam
Pemi	633	0.6	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	
Pennichuck	460	0.6	2.0	0.60	2.0	B	4	Friable till, silty, schist & phyllite	mesic	loamy-skeletal	no	20 to 40 in. deep
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Pillsbury	646	0.6	2.0	0.06	0.2	C	5	Firm, platy, loamy till	frigid	silty	no	
Pipestone	314					B	5	Outwash and Stream Terraces	mesic	sandy	yes	
Pittstown	334	0.6	2.0	0.06	0.2	C	3	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	channery silt loam in Cd
Plaisted	563	0.6	2.0	0.06	0.6	C	3	Firm, platy, silty till, schist & phyllite	frigid	loamy	yes	channery silt loam in Cd
Podunk	104	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	frigid	loamy	no	loamy to coarse sand in C
Pondicherry	992			6.00	20.0	D	6	Organic Materials - Freshwater	frigid	sandy or sandy-skeletal	no	organic over sand
Poocham	230	0.6	2.0	0.20	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	silt loam in C
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Quonset	310	2.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	shale
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Raynham	533	0.2	2.0	0.06	0.2	C	5	Terraces and glacial lake plains	mesic	silty	no	
Raypol	540	0.6	2.0	6.00	100.0	D	5	Outwash and Stream Terraces	mesic	co. loamy over sandy (skeletal)	no	
Redstone	665	2.0	6.0	6.00	20.0	A	1	Weathered Bedrock Till	frigid	fragmental	yes	loamy cap
Ricker	674	2.0	6.0	2.00	6.0	A	4	rganic over bedrock (up to 4" of miner	cryic	fibric to hemic	no	well drained, less than 20 in. deep
Ridgebury	656	0.6	6.0	0.00	0.2	C	5	Firm, platy, loamy till	mesic	loamy	no	
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Roundabout	333	0.2	2.0	0.06	0.6	C	5	Terraces and glacial lake plains	frigid	silty	no	silt loam in the C
Rumney	105	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	frigid	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Saddleback	673	0.6	2.0	0.60	2.0	C/D	4	Loose till, bedrock	cryic	loamy	yes	less than 20 in. deep
Salmon	630	0.6	2.0	0.60	2.0	B	2	Terraces and glacial lake plains	frigid	silty	yes	very fine sandy loam
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Scantic	233	0.0	0.2	0.00	0.2	D	5	Silt and Clay Deposits	frigid	fine	no	
Scarboro	115	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	mesic	sandy	no	organic over sand, non stony
Scio	531	0.6	2.0	0.60	2.0	B	3	Terraces and glacial lake plains	mesic	silty	no	gravelly sand in 2C
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Scituate	448	0.6	2.0	0.06	0.2	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Shaker	439	2.0	6.0	0.00	0.2	C	5	Sandy/loamy over silt/clay	mesic	co. loamy over clayey	no	
Shapleigh	136					C/D	4	Sandy Till	mesic	sandy	yes	less than 20 in. deep
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Sisk	667	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	cryic	loamy	yes	sandy loam in Cd
Skerry	558	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Squamscott	538	6.0	20.0	0.06	0.6	C	5	Sandy/loamy over silt/clay	mesic	sandy over loamy	yes	
Stetson	523	0.6	6.0	6.00	20.0	B	2	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	loamy over gravelly
Stissing	340	0.6	2.0	0.06	0.2	C	5	Firm, platy, silty till, schist & phyllite	mesic	loamy	no	
Success	154	2.0	6.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	cemented
Sudbury	118	2.0	6.0	2.00	20.0	B	3	Outwash and Stream Terraces	mesic	sandy	no	loam over gravelly sand

December 29, 2025

Stoney Ridge ENVIRONMENTAL LLC

Barry Stowe
Opechee Construction Corp.
11 Corporate Drive
Belmont, NH 03220

RE: **47 Central Avenue**
Tax Map 17 Lot 76
Dover, NH

Subject: **Wetland Delineation**

Stoney Ridge Environmental, LLC (SRE) assessed the lot referenced above for the presence of wetlands.

The following standards were utilized to identify jurisdictional wetlands:

1) United States Department of Agriculture, Natural Resources Conservation Service. 2018. *Field Indicators of Hydric Soils in the United States*, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
2) *Field Indicators for Identifying Hydric Soils In New England*. Version 4. April 2019. New England Hydric Soils Technical Committee.
3) *U.S. Army Corps of Engineers 2020: National Wetland Plant List, version 3.5 (http://wetland_plants.usace.army.mil)*. U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.
4) *The National Wetland Plant List: 2016 wetland ratings.* Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
5) *Corps of Engineers Wetlands Delineation Manual*. January 1987. Wetlands Research Program Technical Report Y-87-1.
6) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: Northcentral and Northeast Region. January 2012, Version 2. U.S. Army Corps of Engineers. Environmental Laboratory ERDC/EL TR-12-1.
7) *Classification of Wetlands and Deepwater Habitats of the United States*. December 1979. L. Cowardin, V. Carter, F. Golet, and E. LaRoe. US Department of the Interior. Fish and Wildlife Service. FWS/OBS-79/31.
8) *NHDES Env-Wt 100-900*. New Hampshire Department of Environmental Services Wetland Rules, 2020.

SRE assessed the site for wetlands using the US Army Corps of Engineers three parameter analysis to identify wetlands. This process involves documenting hydric soils, hydrophytic

vegetation and hydrology. SRE determined there were no wetlands on this site due to the lack of hydric soils, hydrophytic vegetation, and hydrology.

Site Description:

This site is located off Central Avenue in Dover, NH at Tax Map 17, Lot 76. The subject property is bounded to the east and south by the Spaulding Turnpike (Rt 16), to the west by a commercial building and parking lot, and to the north by Central Avenue. The northern central portion of the subject property contains one vacant commercial building. Much of the remainder of the lot is paved parking areas as well as a drive-through. To the south and west of the parking area is a small, vegetated area dominated by northern red oak (*Quercus rubra*), white pine (*Pinus strobus*), and golden rod (*Solidago spp.*). The vegetation identified on site are primarily upland species. No primary or secondary indicators of wetland hydrology were identified on site. No hydric soil was observed.



Photo 1: A view of the northern paved portion of the lot looking toward Central Avenue.



Photo 2: A view of the vacant building and portion of the paved lot on the western half of the property.



Photo 3: A view of the southern vegetated portion of the lot facing the Spaulding Turnpike.



Photo 4: A view of the paved parking area located on the southern half of the lot.

Based on this assessment SRE has determined there are no wetlands on the lot. If there are any additional questions regarding this wetlands assessment, please feel free to contact us at (603) 776-5825.

Sincerely,
Stoney Ridge Environmental, LLC

STATE OF NEW HAMPSHIRE
CYNTHIA M. BALCIUS
1/5/20
No. 0161
CERTIFIED WETLAND SCIENTIST

Cynthia M. Balcius, CSS, CWS, CPESC
Senior Soil and Wetland Scientist

Jenna Sabia
Assistant Project Manager

Stoney Ridge ENVIRONMENTAL LLC

OPECHEE
CONSTRUCTION CORPORATION

Compliance Summary – Gateway Design Standards February 29, 2026
TownePlace Suites by Marriott
47 Central Avenue, Dover, New Hampshire

DIMENSIONAL REGULATIONS – PRINCIPAL BUILDING	PROVIDED
Lot coverage: 50% max;	*17.5%*
Frontage build-out: 60% min.	*N/A Primary; CUP Secondary requested*
Front primary build-to line: 5 ft. min – 20 ft. max	*CUP requested*
Front secondary build-to line: 5 ft. min – 20 ft. max	*17 feet*
Side setback: 10 ft. min	*29 feet*
Rear setback: 15 ft. min	*N/A*
Principal building height: 4 stories max, 2 stories min	*4-stories*

PERMITTED USE: Lodging: Permitted up to 12 rooms; 13 or more rooms permitted with CUP
A hotel use CUP is requested.

DOWNTOWN ARCHITECTURAL STANDARDS

Required Ground Floor Standards:

- No less than 30% of facade shall be windows.
  Northerly Central Ave facing façade = 31%
  Westerly Central Ave facing façade = 33%

- Pedestrian entrance required at street side or front facade.
  The main entrance has been provided on the street side and front facing façade.

- Residential uses permitted.
  Acknowledged. Hotel use - not applicable.

- The use of ground floor exterior lighting on the building should offer a feeling of warm security and increase safety to pedestrians without being overwhelming.
  Ground-floor exterior lighting has been designed to create a warm, welcoming, and secure pedestrian environment without producing excessive brightness or glare. The main entrance, outdoor patio, and pedestrian walkway are illuminated with low-mounted decorative wall sconces and low-height pathway bollard fixtures that provide localized illumination appropriate for pedestrian-scale visibility for guests and visitors.

11 CORPORATE DRIVE ▪ BELMONT ▪ NH 03220
PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

A photometric plan has been provided demonstrating appropriate light levels consistent with common safety standards for similar hospitality uses. The lighting design emphasizes human scale, warmth, and safety while avoiding overwhelming illumination or spill onto adjacent properties.

Required Building Standards:

- Building designs shall be harmonious with neighboring structures in terms of mass, width, height, proportion, spacing, and setback.

  The subject property is located within the Spaulding Turnpike interchange area and is characterized by regional access, highway visibility, and corridor-scale commercial development rather than a continuous neighborhood streetwall. Accordingly, the proposed building is harmonious with the scale and established development pattern along Central Avenue and within the surrounding interchange environment.

  The proposed building bulk and height are permitted within the Gateway District and are comparable to recently constructed commercial and lodging structures in the district and throughout the city. The hotel is located more than 200 feet from the nearest residential property and separated by highway infrastructure, ensuring compatibility with surrounding land uses and avoiding an out-of-scale presence.

- All exterior walls that front on a public way with adjacent pedestrian traffic/infrastructure must incorporate wood, brick, stone or a suitable contemporary material appropriately detailed within the first 20 vertical feet.

  While the building is set back from the public way due to site constraints, the project proposes an exterior cladding within the first 20 feet consisting of Nichiha Architectural Fiber Cement Wall Panels with the intent of the standard. These fiber cement panel systems are widely recognized as durable, non-combustible, and architecturally articulated façade materials commonly used in contemporary commercial construction. The panels will be installed with expressed joints, trim detailing, and varied texture within the first 20 vertical feet of the façade to reinforce pedestrian-scale articulation.

- Large structures shall be broken into smaller masses to provide human scale and variation.

  The building is articulated into smaller masses through vertical and horizontal segmentation, material and color changes, variations in plane depth, and parapet modulation, avoiding the appearance of a monolithic block..

  Additionally, emphasis has been placed on the street-facing façades along Central Avenue to reinforce pedestrian scale and streetscape character. This is achieved through increased glazing at the ground level, material articulation, and the incorporation of outdoor patio, entry canopy and trellis elements, all of which serve to further break down the perceived mass of the building and create a more engaging and visually varied frontage along Central Avenue.

- The design of the building shall incorporate views that are directed to the street and garden/courtyard rather than adjacent neighbors.

  The building has been oriented to direct primary views toward Central Avenue and the Spaulding Turnpike ramp system, reinforcing its street presence and gateway visibility. The main entrance and primary façade face Central Avenue, with glazing and architectural emphasis oriented toward the public way and the interchange corridor.

  Guest room layouts are arranged so that primary outward-facing views are directed toward the street frontages and internal site features rather than toward adjacent properties. The north and south building elevations are designed to have no outward-facing guest room views toward any abutting parcels.

  Common interior areas incorporate glazing that provides views to the internal patio and courtyard space, creating an inward-facing amenity for guests while reinforcing the relationship between indoor gathering spaces and the landscaped/hardscaped outdoor area.

  Collectively, the building's orientation and window placement direct views toward the street and on-site courtyard features consistent with the intent of the standard.

- Buildings shall be placed at or near the street, along the outer edge of their sites, to ensure the unity of those streets and to encourage and facilitate pedestrian activity.

  While relief from the prescribed Central Avenue primary frontage build-to range is requested, its placement and design maintain a clear and defined relationship with Central Avenue achieved as follows.

  The main entrance is oriented toward Central Avenue, and an ADA-compliant pedestrian walkway provides a direct and accessible connection between the building entrance and the public sidewalk. Architectural emphasis, glazing, and façade articulation reinforce the building's relationship to the street and establish a visible and identifiable frontage presence.

  Through pedestrian connectivity, entrance orientation, and streetscape landscaping, the project supports the intent of promoting street unity and facilitating pedestrian activity, notwithstanding the requested relief from the strict build-to standard.

- Building design shall enhance the pedestrian environment and streetscape.

  Along Central Avenue, the building frontage is designed to provide clear pedestrian orientation through a defined primary entrance, façade articulation, ground-floor transparency, patio and an ADA-compliant pedestrian connection to the public sidewalk. The placement of the building as near the street as possible, combined with streetscape landscaping and pedestrian access improvements, supports walkability and visual engagement consistent with the intent of the Gateway District.

• Utility elements shall be screened aesthetically.
Utilities elements have been discreetly located, and landscaping has been utilized to screen these elements.

• Use of architectural details and changes in depth are included on building elevations to increase visual interest and scale.
Architectural detailing and intentional changes in façade depth have been incorporated throughout the building elevations to increase visual interest and reinforce human scale. The structure is articulated through variations in plane depth, parapet modulation, and vertical and horizontal segmentation, effectively breaking the building into smaller masses. The use of articulated fiber-cement panel systems, material variation, color transitions, and defined entrance are all elements that reduce perceived mass and eliminate excessive blank wall conditions. Collectively, these architectural treatments provide visual compatibility with surrounding development while enhancing the building's overall scale and proportion.

• Garages shall not face the street.
No garage - not applicable.

• Solar/green roof standard:
- All buildings must be solar ready.
- Commercial and mixed-use buildings 25,000 sf or more must incorporate solar panels and/or green roof on at least 30% of roof area.
A solar array will be installed for 30% of the roof area and the remaining roof area will be solar ready.

STREETSCAPE STANDARDS

Streetscape standards were crafted to ensure streets in mixed-use areas of the Gateway District have a relationship with adjacent buildings, accommodate pedestrians and bicyclists, and are compatible with the character of Dover's neighborhoods. All street elements must be consistent with Dover Streetscape and Landscape Standards.

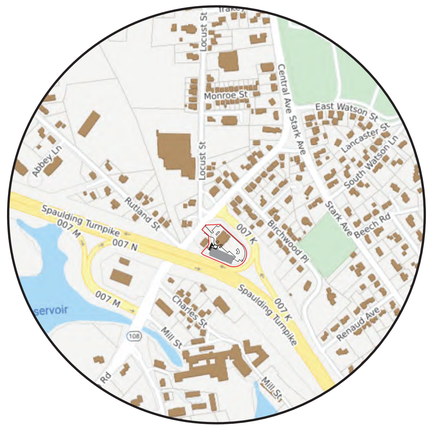
The Gateway District streetscape standards are intended to ensure that street elements within the public right-of-way maintain a relationship with adjacent buildings, accommodate pedestrians and bicyclists, and are compatible with the character of Dover's neighborhoods. As written, these standards apply specifically to street elements occurring within the public way along a project's street frontage.

The project's primary frontage along Central Avenue is entirely comprised of a paved traffic intersection with no existing streetscape features such as sidewalks, planting strips, street trees, or street furniture

within the public right-of-way adjacent to the site. Accordingly, there are no existing streetscape elements within this frontage to modify or extend.

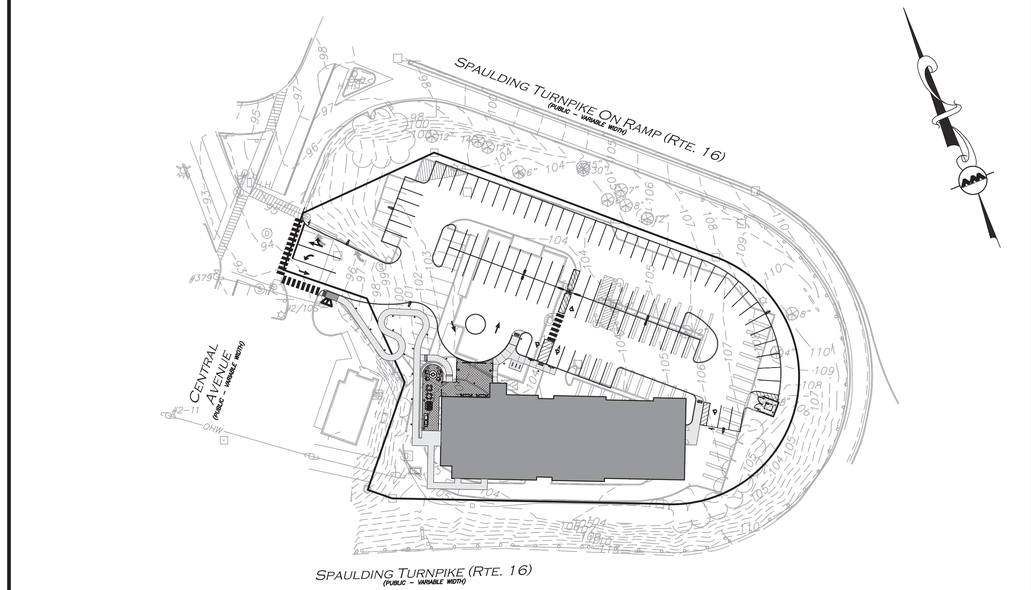
The secondary frontage consists of the Spaulding Turnpike right-of-way, which is a NHDOT-controlled limited-access highway where pedestrian and bicycle access is prohibited by law. As such, the streetscape standards related to pedestrian and bicycle accommodation are not applicable to this frontage.

Given the existing conditions and the nature of both frontages, the Gateway District streetscape standards do not impose additional improvements within the public right-of-way for this project. The site design instead focuses on pedestrian connectivity to the street and landscaped frontage improvements within the property boundary.



LOCUS MAP
SCALE: 1" = 600'

SITE DEVELOPMENT PLANS FOR
TOWNPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
(MAP 17, LOT 76)
DOVER, NEW HAMPSHIRE 03820



GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED	REV 1	REV 2	REV 3
EXISTING CONDITIONS	V-101	01-30-26	-	-	-
SITE PREPARATION PLAN	C-101	01-30-26	-	-	-
LAYOUT & MATERIALS PLAN	C-102	01-30-26	-	-	-
GRADING & DRAINAGE	C-103	01-30-26	-	-	-
UTILITIES PLAN	C-104	01-30-26	-	-	-
SITE LIGHTING PLAN	C-105	01-30-26	-	-	-
NEIGHBORHOOD PLAN	C-106	01-30-26	-	-	-
TRUCK TURNING PLAN	C-107	01-30-26	-	-	-
SEWER PLAN & PROFILE	C-201	01-30-26	-	-	-
DETAILS	C-501	01-30-26	-	-	-
DETAILS	C-502	01-30-26	-	-	-
DETAILS	C-503	01-30-26	-	-	-
DETAILS	C-504	01-30-26	-	-	-
CITY OF DOVER STANDARD DETAILS	C-505	01-30-26	-	-	-
CITY OF DOVER STANDARD DETAILS	C-506	01-30-26	-	-	-
SEWER SPECIFICATIONS	C-507	01-30-26	-	-	-
LANDSCAPING PLAN	L-101	01-30-26	-	-	-
LANDSCAPING DETAILS	L-501	01-30-26	-	-	-
LANDSCAPING NOTES	L-502	01-30-26	-	-	-
EXTERIOR ELEVATIONS	A3.01	01-30-26	-	-	-
EXTERIOR ELEVATIONS	A3.02	01-30-26	-	-	-
EXTERIOR RENDERING	A3.03	01-30-26	-	-	-

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130
PHONE:

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

DESIGN-BUILD FIRM/ARCHITECT:
OPECHEE CONSTRUCTION CORPORATION
11 CORPORATE DRIVE
BELMONT, NH 03220
PHONE: (603) 527-9090

CIVIL ENGINEER / SURVEYOR / LANDSCAPE ARCHITECT:
ALLEN & MAJOR ASSOCIATES, INC.
400 HARVEY ROAD
MANCHESTER, NH 03103
PHONE: 603.627.5500

TRAFFIC ENGINEER:
VANASSE ASSOCIATES, INC.
35 NEW ENGLAND BUSINESS CENTER DRIVE, SUITE 140
ANDOVER, MA 01810

PERMITS/APPROVALS	PERMIT NUMBER	APPROVED DATE	EXPIR. DATE
CITY OF DOVER SITE PLAN REVIEW	TBD	TBD	TBD
CITY OF DOVER CONDITIONAL USE PERMIT	TBD	TBD	TBD
NH DES SEWER CONNECTION PERMIT	TBD	TBD	TBD

STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

OWNER'S SIGNATURE DATE

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501

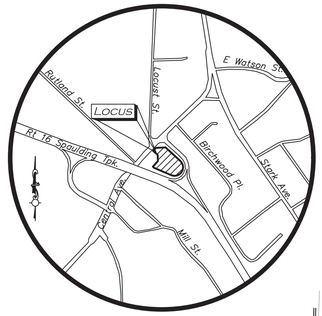
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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ISSUED FOR CITY OF DOVER T.R.C. REVIEW: JANUARY 30, 2026

PLANNING BOARD FILE NUMBER: TBD

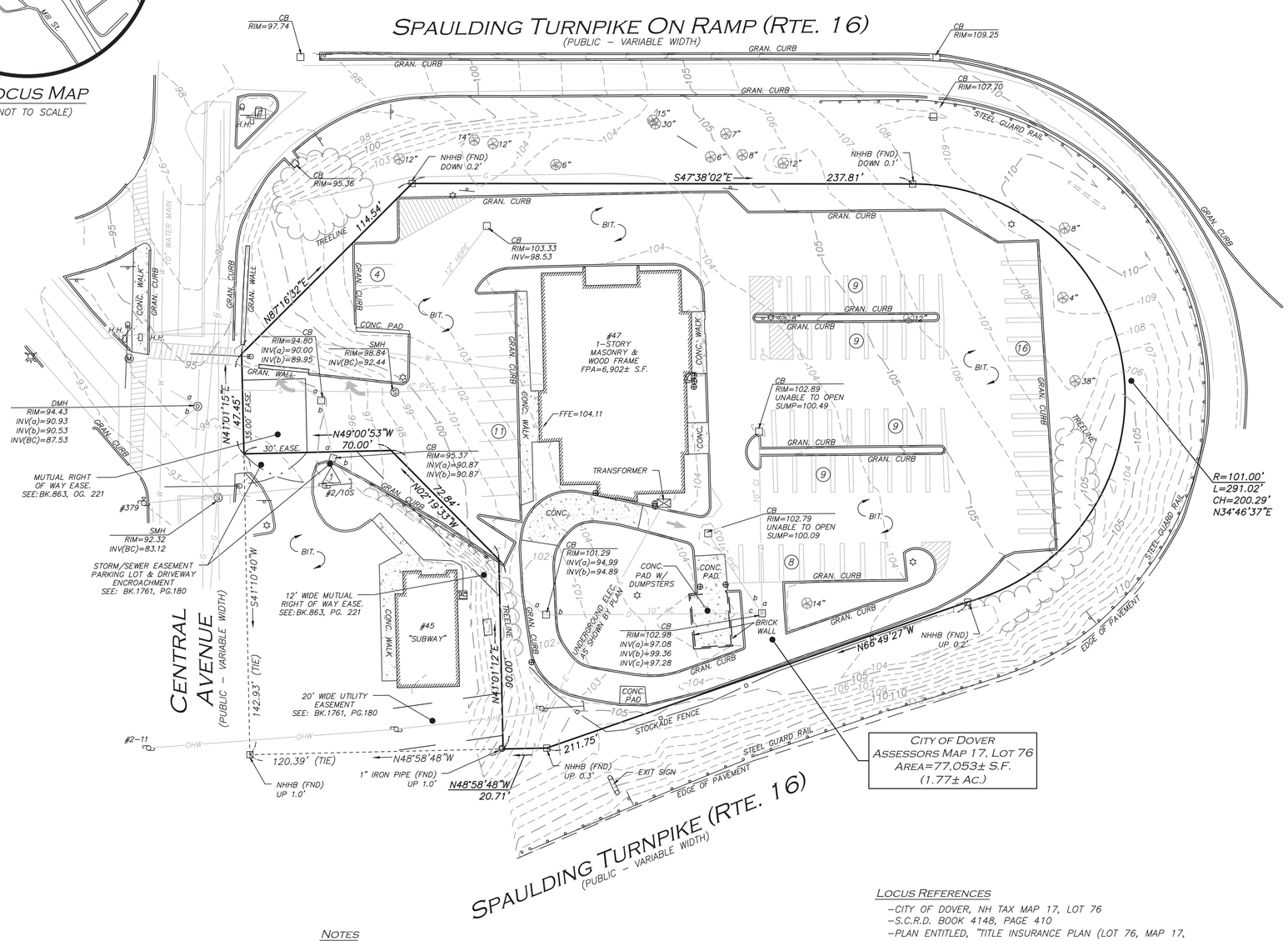
R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_COVER.DWG



LOCUS MAP
(NOT TO SCALE)

PARKING SUMMARY	
STANDARD STALLS	72
HANDICAPPED STALLS	3
TOTAL STALLS	75

BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	SPIKE IN UTILITY POLE #2/10S	95.63



LEGEND

CONCRETE BOUND (CB)	⊡
IRON PIPE (IP)	○
IRON ROD (IR)	◦
DRAIN MANHOLE (DMH)	Ⓓ
SEWER MANHOLE (SMH)	Ⓢ
MISC. MANHOLE (MH)	Ⓜ
CATCH BASIN (CB)	□
ROUND CATCH BASIN (RCB)	⊞
UTILITY POLE	
UTILITY POLE W/LIGHT	
GUY WIRE	
FIRE HYDRANT	
WATER GATE	
GAS GATE	
BOLLARD	
TREE	
BUSH / SHRUB	
SIGN	
MAILBOX	MB
TRANSFORMER	⊠
HAND HOLE	H.H.
AIR CONDITIONER	AC
HANDICAPPED PARKING SPACE	
TRAFFIC MAST	
PAINTED ARROW	
PARKING SPACE COUNT	16
CONCRETE	
BUILDING	
BUFFER ZONE	
EASEMENT LINE	
1' CONTOUR	53
5' CONTOUR	55
PROPERTY LINE	
ABUTTERS LINE	
STONE RETAINING WALL	
TREE LINE	
EDGE OF PAVEMENT	
CURB	
CHAIN LINK FENCE	x
STOCKADE FENCE	□
GUARDRAIL	
WATER LINE	W
SEWER LINE	S
DRAIN LINE	D
OVERHEAD WIRES	OHW
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
FOUND	FND
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.

NEW HAMPSHIRE GRID (NAD 83)

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

NOTES

1. NORTH ARROW IS BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM THE STRAFFORD COUNTY REGISTRY OF DEEDS IN DOVER, NH
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0320E, EFFECTIVE DATE, 9/30/2015
6. PER WETLAND DELINEATION REPORT PREPARED BY STONEY RIDGE ENVIRONMENTAL, LLC DATED DECEMBER 29, 2025, THERE ARE NOT WETLANDS ON THE PROPERTY. FIELD EVALUATION PERFORMED BY CYNTHIA M. BALCIUS, CSS 061.

LOCUS REFERENCES

–CITY OF DOVER, NH TAX MAP 17, LOT 76
–S.C.R.D. BOOK 4148, PAGE 410
–PLAN ENTITLED, "TITLE INSURANCE PLAN (LOT 76, MAP 17, CENTRAL AVENUE DOVER, NEW HAMPSHIRE PREPARED FOR BURGER KING CORPORATION", SCALE: 1"=20', DATED: JUNE 04, 1990, PREPARED BY: ALLAN H. SWANSON, INC., AND ON FILE AT THE S.C.R.D. AS PLAN BK. 38A, PG. 3.

PLAN REFERENCES

–PLAN ENTITLED, "PLAN OF LOTS DOVER, NEW HAMPSHIRE FOR: PAUL H. & LILLIAN S. DANTOS & C. JEANNINE LORD", SCALE: 1"=20', DATED: APRIL, 1984, PREPARED BY: JOHN W. DURGIN ASSOCIATES, INC., AND ON FILE AT THE S.C.R.D. AS PLAN NO. 24A–21.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

R:\PROJECTS\1173-31\SURVEY\DRAWINGS\CURRENT\S-1173-31-EC.DWG
FB# ???? PG. ???

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN DECEMBER 18, 2025 AND DECEMBER 22. 2025 AND HAD AN ERROR OF CLOSURE OF NO GREATER THAN 1/10,000.

ALLEN & MAJOR ASSOCIATES, INC.

STATE OF NEW HAMPSHIRE — No. 908 JAMES P. SMITH — SIGNATURE — LAND SURVEYOR

JAMES P. SMITH NH LLS #908 — 1-22-2026 DATE

REV	DATE	DESCRIPTION

APPLICANT\OWNER:

OPEECHEE CONSTRUCTION
11 CORPORATE DRIVE
BELMONT, NH 03220

PROJECT:

TAX MAP 17 LOT 76
47 CENTRAL AVE, DOVER, NH

PROJECT NO.	1173-31	DATE:	01-22-2026
SCALE:	1" = 30'	DWG. NAME:	S-1173-31-EC
DRAFTED BY:	SRP/CTP	CHECKED BY:	JPS

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
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FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:

EXISTING CONDITIONS PLAN

SHEET No.

V-101

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EROSION CONTROL AND SEDIMENT CONTROL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED EROSION CONTROL MEASURES AND THE WORK REQUIRED TO PREPARE THE SITE FOR CONSTRUCTION.

2. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA NEW ENGLAND. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI IS REQUIRED TO BE SUBMITTED AT LEAST 14 DAYS PRIOR TO COMMENCING CONSTRUCTION.

3. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. COPIES OF ALL SWPPP REPORTS SHALL BE PROVIDED TO THE CITY OF DOVER WITHIN 3 DAYS OF EACH INSPECTION.

4. APPLICABLE WORK AND MATERIALS SHALL COMPLY WITH ALL CITY OF DOVER, NH DES, NH REGULATIONS AND CODES AND O.S.H.A. STANDARDS. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SITE PLAN REGULATIONS FROM THE CITY OF DOVER, NH PLANNING BOARD, AND THE PUBLIC WORKS DEPARTMENT SPECIFICATIONS, USDA SOIL CONSERVATION SERVICE VEGETATIVE PRACTICES IN SITE DEVELOPMENT.

5. AREAS WITH OVER 3:1 SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC150BN).

6. SILT CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 1992 "STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES" MANUAL. ANY SUCH MODIFICATIONS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.

7. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED WITHIN 7 DAYS OF EXPOSURE SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL MEASURES WITHIN 7 DAYS OF DISTURBANCE. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF HAY OR STRAW MULCH IS USED IT SHALL BE APPLIED AT THE RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS AND IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.

8. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY SEPTEMBER 15 OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 2 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS, ON VEGETATED SLOPES IN EXCESS OF 15%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.

9. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 3LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.

10. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED ACCORDING TO THE STORMWATER POLLUTION PREVENTION PLANS. THESE SHALL BE MAINTAINED DURING CONSTRUCTION TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85–90% VIGOROUS PERENNIAL COVER OF GRASSES.

11. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED IN ACCORDANCE WITH ENV–A1000.

12. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. CATCH BASIN INLETS SHALL ALSO BE PROTECTED DURING CONSTRUCTION BY THE USE OF STONE INLET PROTECTION AROUND EACH INLET. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85–90% OF VIGOROUS PERENNIAL GROWTH.

13. REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION. FOLLOWING SEED BED PREPARATION ALL AREAS NOT NOTED TO RECEIVE COVER SHALL BE LOAM AND SEEDED. AREAS SEEDED BETWEEN MAY 15 TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15TH. HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F.

14. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS FOR TEMPORARY SEEDED AREAS MAY BE APPLIED AS FOLLOWS:
    - 10–10–10 FERTILIZER (N–P205–K20 OR EQUAL)-APPLICATION RATE= 25 LBS/1,000 S.F.
    - GROUND LIMESTONE (85% OF TOTAL CARBONATES, LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE. APPLICATION RATE= 100 LB/1,000 S.F.
    - WHEN FERTILIZER IS APPLIED WITHIN 100' OF ANY RIVER, STREAM, POND, OR LAKE IT SHALL BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER.

15. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY NH DES AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER.

16. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED DURING THE ENTIRE CONSTRUCTION CYCLE. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED IN THE CONTRACTORS FIELD OFFICE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL AT A MINIMUM OF (1/4" OR GREATER OF RAINFALL) OR RUNOFF EVENT, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS. THE CONTRACTOR SHALL MAINTAIN A LOG IN ACCORDANCE WITH THE PLANS, NHDES, AND CITY OF DOVER, NH.

17. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED IN THE INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.

18. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA BIMONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85–90% VEGETATED VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVEN OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.

19. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT–OF–WAY MUST BE REMOVED IMMEDIATELY.

20. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.

21. ALL EXISTING & PROPOSED CATCH BASINS SUBJECT TO STORMWATER RUNOFF DURING CONSTRUCTION SHALL HAVE STONE INLET PROTECTION AND SILT SACKS INSTALLED OR AS DIRECTED BY THE OWNER/ENGINEER. NO SEDIMENTATION SHALL ENTER THE ON–SITE OR OFF–SITE DRAINAGE SYSTEMS AT ANY TIME.

22. CONTRACTOR TO CONTROL FUGITIVE DUST IN ACCORDANCE WITH ENV–A 1002. CONTRACTOR TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST, INCLUDING BUT NOT LIMITED TO THE FOLLOWING METHODS: WETTING, COVERING, SHIELDING OR VACUUMING.

23. IF DEWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION. ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED, IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DEWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR ITS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL–VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.

GENERAL NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

3. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.

4. GRADING / DEMOLITION OUTSIDE OF THE PROJECT BOUNDARIES (IF ANY) REQUIRES A TEMPORARY CONSTRUCTION/GRADING EASEMENT FROM THE LANDOWNER (BY OTHERS).

5. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.

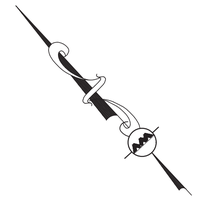
6. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.

7. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

8. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM TO 6PM, SATURDAY AND SUNDAY 9AM TO 4PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON THE SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR, SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

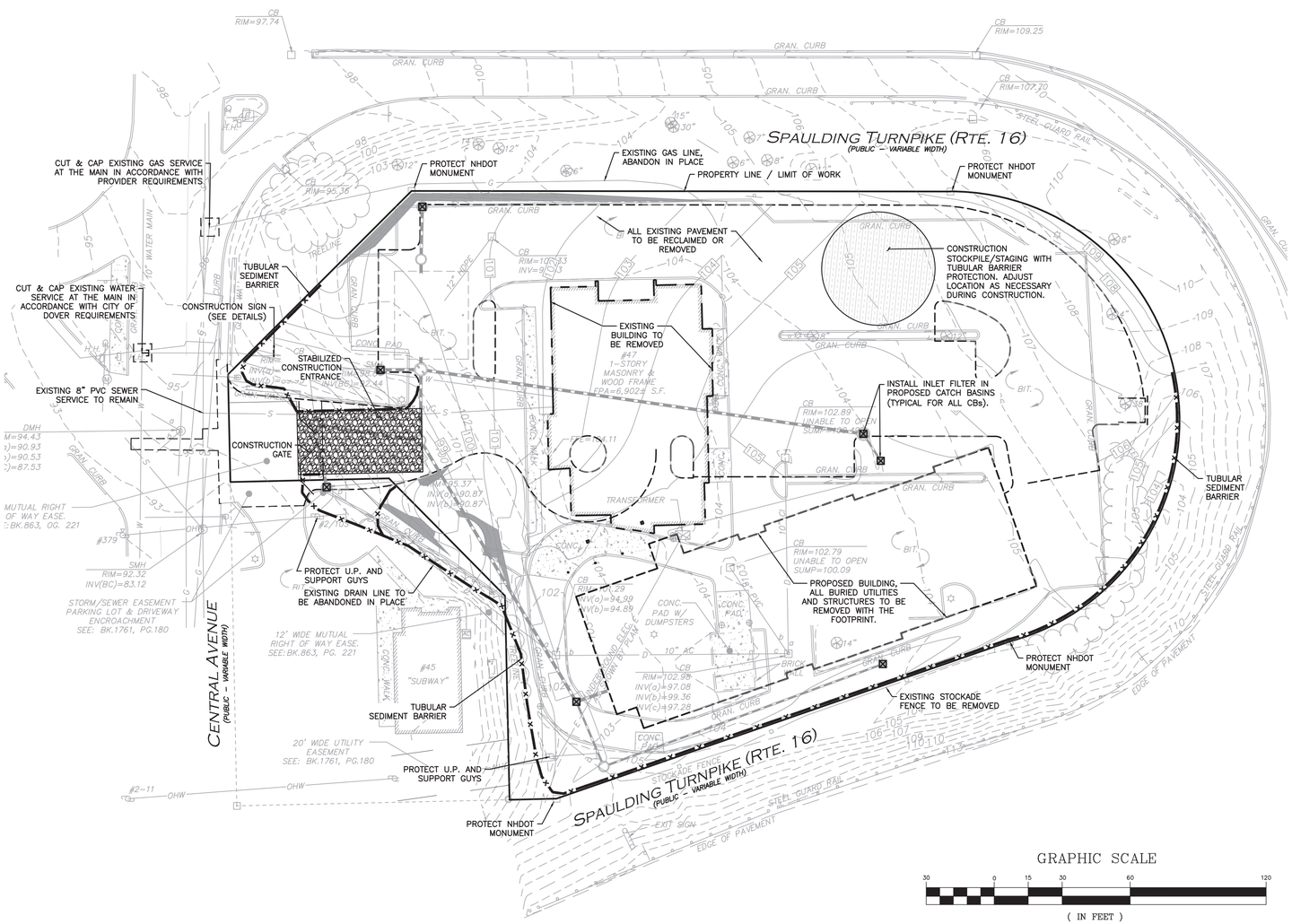
9. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

10. THE APPLICANT (OR ASSIGNEE) SHALL COMPLETE THE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
https://www.unk.edu/unhsc/ptapp



LEGEND

- LIMIT OF DISTURBANCE
- LIMIT OF 'CLEAR AND GRUB'
- BUILDING TO BE REMOVED
- PAVEMENT TO BE REMOVED
- UTILITY CUT AND CAP
- TEMPORARY FENCE



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1–888–DIG–SAFE
1–888–344–7233

R: \PROJECTS\1173–31\CIVIL\DRAWINGS\CURRENT\C–1173–31_SITE–PREP.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 30'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

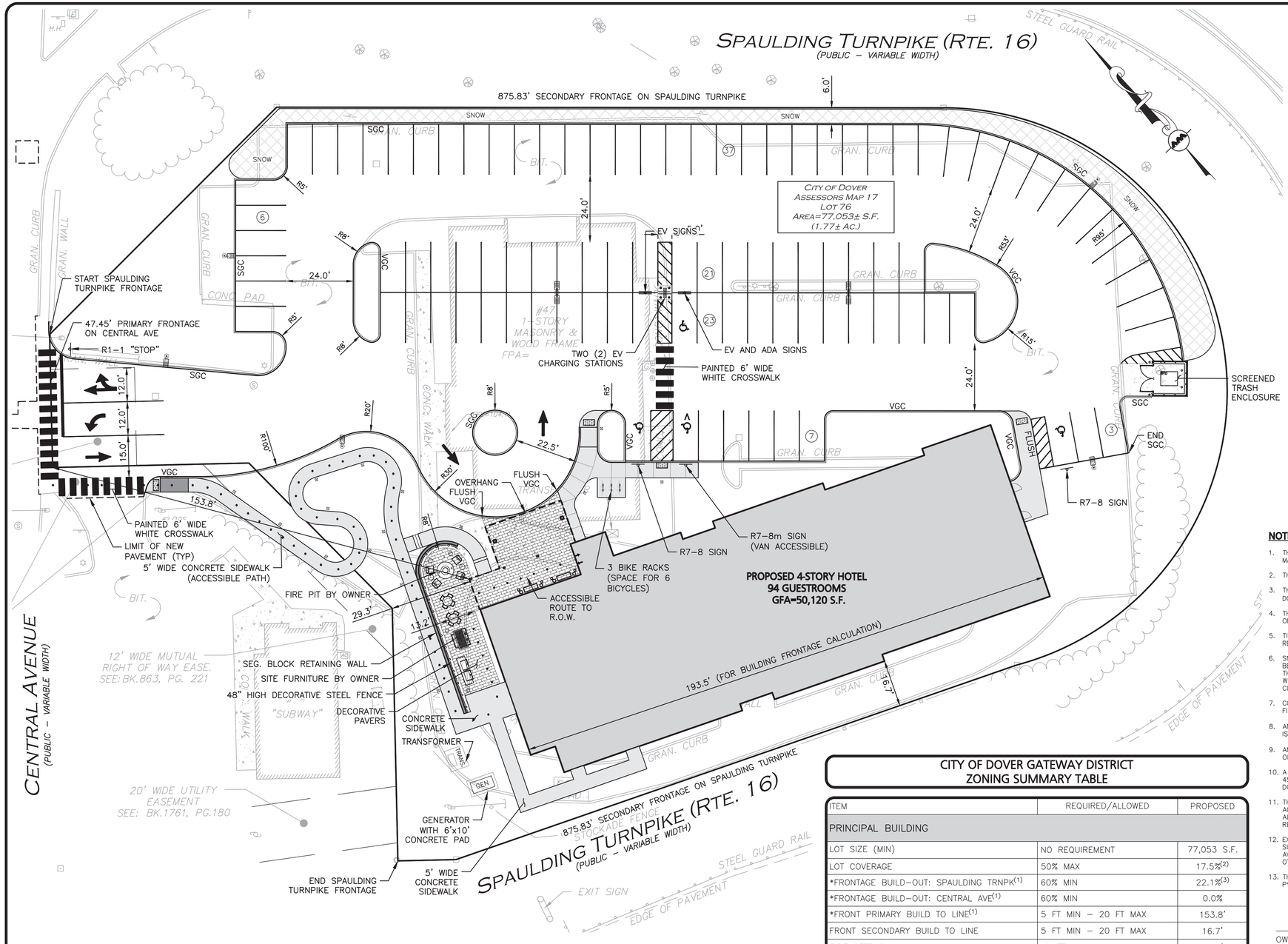
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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DRAWING TITLE:
SITE PREPARATION PLAN

SHEET No.
C-101

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LEGEND

PROPERTY LINE	
SIGN	
BOLLARD	
BUILDING	
BUILDING ARCHITECTURE	
CURB	
PARKING STRIPING	
ROADWAY STRIPING	
TRAFFIC ARROWS	
CONCRETE PAD	
CONCRETE SIDEWALK	
DECORATIVE PAVERS	
ADA ACCESSIBLE RAMP	
ADA DET. WARNING SURFACE	
SNOW STORAGE	
SETBACK LINE	
SAW-CUT LINE	
PARKING COUNT	(10)
STEEL GUARDRAIL	
WOOD FENCE	
TRANSFORMER	T
GENERATOR	GEN
BOLLARD LIGHT	
POLE LIGHT	
ACCESSIBLE ROUTE	
VERTICAL GRANITE CURB	VGC
SLOPED GRANITE CURB	SGC

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SITE LAYOUT AND MATERIALS AND PROVIDE A PARKING AND ZONING SUMMARY TABLE.
2. THE PROPOSED USE OF THE STRUCTURE IS A HOTEL.
3. THE PARCEL IS SHOWN AS LOT NO. 76, MAP 17 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL CONTAINS 1.77 ACRES OR 77,053 SQ. FT. AREA OF LAND.
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 4148, PAGE 410.
6. SNOW SHALL BE TAKEN OFF-SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE, AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE OR BLOCKS THE USE OF ON-SITE PARKING. ANY EXCESS WILL BE BE TRUCKED OFF-SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
7. CONTRACTOR TO PROVIDE ALL-WEATHER ACCESS FOR CITY OF DOVER FIRST RESPONDERS DURING CONSTRUCTION.
8. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.
9. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.
10. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
11. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
12. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
13. THIS PLAN REFERENCES SITE PLAN APPROVAL P**-** AND CUPs P**-** AND P**-**.

CITY OF DOVER GATEWAY DISTRICT ZONING SUMMARY TABLE

ITEM	REQUIRED/ALLOWED	PROPOSED
PRINCIPAL BUILDING		
LOT SIZE (MIN)	NO REQUIREMENT	77,053 S.F.
LOT COVERAGE	50% MAX	17.5%(2)
*FRONTAGE BUILD-OUT: SPAULDING TRNPK(1)	60% MIN	22.1%(3)
*FRONTAGE BUILD-OUT: CENTRAL AVE(1)	60% MIN	0.0%
*FRONT PRIMARY BUILD TO LINE(1)	5 FT MIN – 20 FT MAX	153.8'
FRONT SECONDARY BUILD TO LINE	5 FT MIN – 20 FT MAX	16.7'
SIDE SETBACK	10 FT MIN	29.3'
REAR SETBACK	15 FT MIN	N/A
HEIGHT OF BUILDING		
PRINCIPAL BUILDING	4 STORY MAX, 2 STORY MIN	4 STORIES
USE		
*LODGING(1)	13 OR MORE ROOMS ARE PERMITTED WITH C.U.P.	94

TABLE NOTES:

1. "*" INDICATES DIMENSIONAL CONDITIONAL USE PERMIT REQUIRED.
2. LOT COVERAGE: (13,506 S.F. FOOTPRINT INCLUDING OVERHANG/77,053 S.F. LOT)=17.5%
3. FRONTAGE BUILD-OUT FOR SPAULDING TURNPIKE (875.83' OF FRONTAGE) (193.5' OF BUILDING LENGTH ON SPAULDING TURNPIKE)/(875.83' FRONTAGE) = 22.1%

OFF-STREET PARKING SUMMARY

USE	MAX ALLOWED CALCULATION	MAX ALLOWED	TOTAL(1) PROVIDED
LODGING (NON CBD-G)	1.0 SPACE/UNIT+1.0 SPACE/EMPLOYEE (1.0x94 GUESTROOMS)+(1.0x13 EMPLOYEES)	104	97

TABLE NOTES:

1. NUMBER OF TOTAL EMPLOYEES = 20
2. NUMBER OF EMPLOYEES DURING MAXIMUM SHIFT = 13
3. NUMBER OF OVERNIGHT EMPLOYEES DURING PEAK PARKING DEMAND = MAX. 2
4. FOR 76-100 SPACES, 4 SHALL BE ACCESSIBLE, ONE SHALL BE VAN ACCESSIBLE.
5. 6 BICYCLE SPACES PROVIDED (REQUIRED: 5% OF TOTAL PARKING OF 97 = 4.9)

OWNER'S SIGNATURE DATE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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R: \PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_LAYOUT & MATERIALS.DWG

BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE

01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

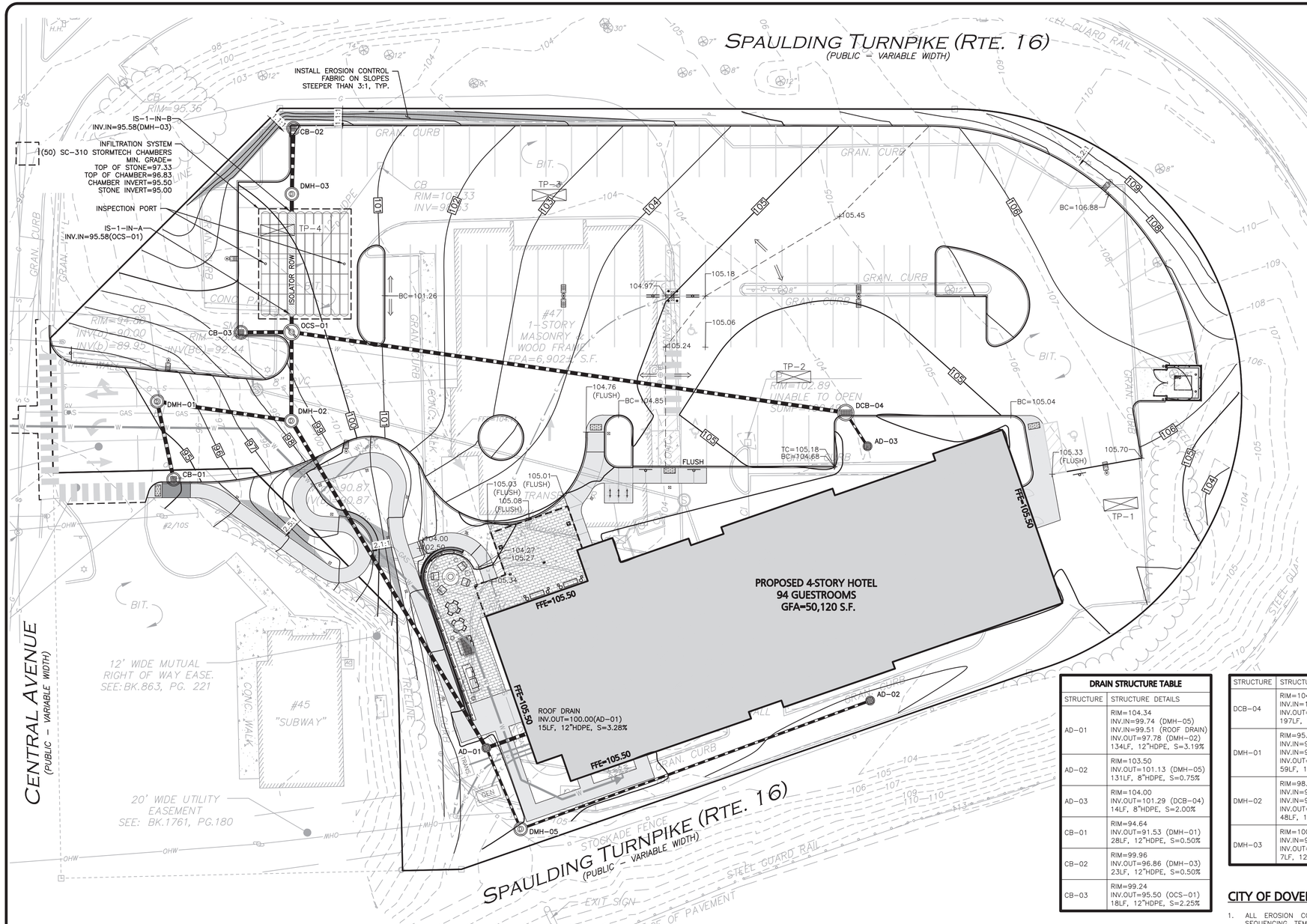
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DRAWING TITLE: LAYOUT & MATERIALS PLAN

SHEET No. C-102

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LEGEND

- DRAIN MANHOLE (DMH)
- CATCH BASIN (CB)
- CATCH BASIN – DOUBLE GRATE
- OUTLET CONTROL STRUCTURE (OCS)
- AREA DRAIN (AD)
- DRAIN LINE
- EROSION CONTROL FABRIC
- 5' CONTOUR (60)
- 1' CONTOUR (53)
- SPOT GRADE (×55.50)
- INFILTRATION SYSTEM
- INFILTRATION CHAMBER
- ISOLATOR ROW
- FLOW DIRECTION

DRAIN STRUCTURE TABLE

STRUCTURE	STRUCTURE DETAILS
AD–01	RIM=104.34 INV.IN=99.74 (DMH–05) INV.IN=99.51 (ROOF DRAIN) INV.OUT=97.78 (DMH–02) 134LF, 12"HDPE, S=3.19%
AD–02	RIM=103.50 INV.OUT=101.13 (DMH–05) 131LF, 8"HDPE, S=0.75%
AD–03	RIM=104.00 INV.OUT=101.29 (DCB–04) 14LF, 8"HDPE, S=2.00%
CB–01	RIM=94.64 INV.OUT=91.53 (DMH–01) 28LF, 12"HDPE, S=0.50%
CB–02	RIM=99.96 INV.OUT=96.86 (DMH–03) 23LF, 12"HDPE, S=0.50%
CB–03	RIM=99.24 INV.OUT=95.50 (OCS–01) 18LF, 12"HDPE, S=2.25%

STRUCTURE	STRUCTURE DETAILS
DCB–04	RIM=104.39 INV.IN=101.00 (AD–03) INV.OUT=100.90 (OCS–01) 197LF, 12"HDPE, S=2.33%
DMH–01	RIM=95.19 INV.IN=91.39 (CB–01) INV.IN=90.10 (DMH–02) INV.OUT=90.00 (EX) 59LF, 12"EXISTING, S=3.42%
DMH–02	RIM=98.35 INV.IN=94.75 (OCS–01) INV.IN=93.50 (AD–01) INV.OUT=92.40 (DMH–01) 48LF, 12"HDPE, S=4.82%
DMH–03	RIM=100.18 INV.IN=96.74 (CB–02) INV.OUT=95.70 (IS–1–IN–B) 7LF, 12"HDPE, S=1.89%

STRUCTURE	STRUCTURE DETAILS
DMH–05	RIM=105.25 INV.IN=100.15 (AD–02) INV.OUT=100.05 (AD–01) 31LF, 8"HDPE, S=1.00%
OCS–01	RIM=99.41 INV.IN=96.30 (DCB–04) INV.IN=95.10 (CB–03) INV.OUT=95.70 (IS–1–IN–A) 6LF, 12"HDPE, S=2.00% INV.OUT=95.00 (DMH–02) 31LF, 12"HDPE, S=0.80%

CITY OF DOVER NOTES:

1. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
2. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
3. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
4. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

TEST PIT #1 (TP1)
EXISTING GROUND ELEVATION: 106.2
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–3"	–	–	–	BIT. PAVEMENT
HTM	3–12"	–	–	–	GRAVEL BASE
C	12–100"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	REDOX. 10YR 3/6 RED. 2.5YR 4/8 OX.

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: 68" (ELEV.=100.5)
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

TEST PIT #2 (TP2)
EXISTING GROUND ELEVATION: 104.8
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–6"	–	–	–	BIT. PAVEMENT
HTM	6–12"	–	–	–	GRAVEL BASE
C	12–60"	LOAM	10YR 4/4	SUBANGULAR BLOCKY	

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: 60" (APPEARED TO BE LARGE FRACTURED BOULDER)

TEST PIT #3 (TP3)
EXISTING GROUND ELEVATION: 103.9
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–8"	–	–	–	BIT. PAVEMENT
HTM	8–18"	–	–	–	GRAVEL BASE
HTM	18–84"	SAND	10YR 6/6	SINGLE GRAIN, LOOSE	CLEAN FILL
C	84–88"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	–

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

TEST PIT #4 (TP4)
EXISTING GROUND ELEVATION: 103.2
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–8"	–	–	–	BIT. PAVEMENT
HTM	8–12"	–	–	–	GRAVEL BASE
C_1	12–48"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	–
C_2	48–96"	FINE SANDY LOAM	10YR 6/6	SUBANGULAR BLOCKY	–

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

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BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
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DRAWING TITLE:
GRADING & DRAINAGE PLAN

SHEET No.
C-103

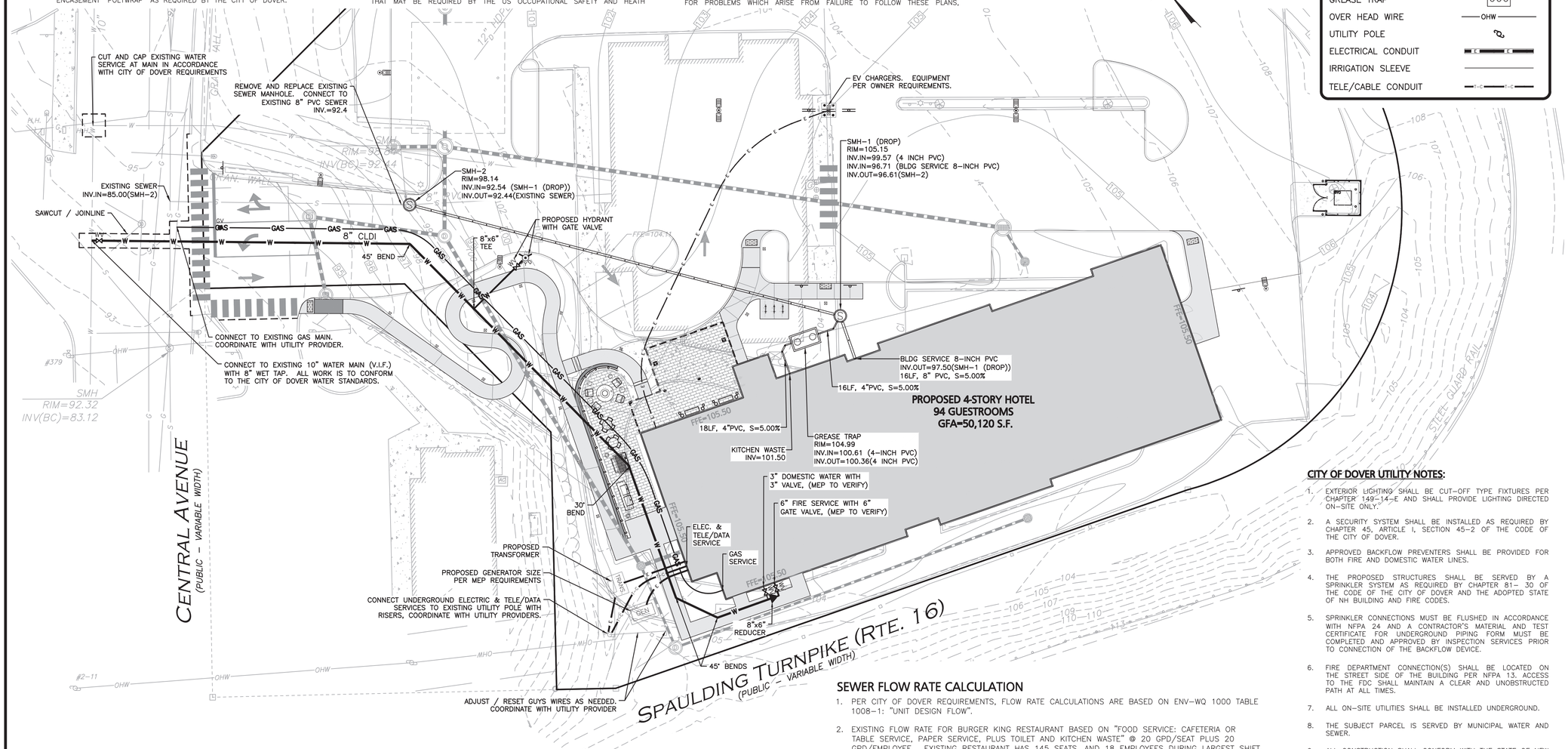
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NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED SITE UTILITIES AND PROVIDE INFORMATION REGARDING THEIR INSTALLATION.
2. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND/OR STORM DRAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
3. IN THE CASE THAT WATER MAINS CROSS SANITARY SEWER MAINS AND ARE SEPARATED BY LESS THAT 18" OF VERTICAL CLEARANCE, THE SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 8 LINEAR FEET CENTERED ON THE CROSSING.
4. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 147 – SEWERS" SHALL BE FOLLOWED WHEN PERFORMING ANY SANITARY SEWER WORK. SEWER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 148 – WATER SYSTEMS" SHALL BE FOLLOWED WHEN PERFORMING ANY WATER DISTRIBUTION WORK. WATER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL DUCTILE IRON MAINS SHALL BE PROVIDED WITH POLYETHYLENE ENCASEMENT "POLYWRAP" AS REQUIRED BY THE CITY OF DOVER.
7. THE CONTRACTOR SHALL REFER TO ARCHITECTS PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL ROOF DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELEPHONE, AND GAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND COORDINATE WITH THE PROPER AGENCY THE LOCATION AND SCHEDULING OF CONNECTIONS WITH THEIR FACILITIES.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION. THE ENGINEER WILL THEN PROVIDE RESOLUTION TO UTILITY CONFLICTS WITHOUT DELAY.
9. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE CITY OF DOVER, NHDOT, NHDES, MUTCD, AND AASHTO.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS OF THE SITE. THESE PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC., DO NOT EXTEND TO, NOR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THE EMPLOYEES, AGENTS OF REPRESENTATIVES IN PERFORMANCE OF THE WORK. THE SEAL OF THE ARCHITECT OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OF OBTAIN THE APPROPRIATE SAFETY SYSTEMS THAT MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEATH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
11. ALL ELEVATIONS REFER TO NAVD 88.
12. PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE FACE OF THE STRUCTURE.
13. LOCATION OF PROPOSED ELECTRICAL/COMMUNICATION SERVICE IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE. PROPOSED ELECTRICAL SERVICE TO BE BURIED IN ACCORDANCE WITH THE CITY OF DOVER REGULATIONS AND ELECTRIC COMPANY.
14. LOCATION OF PROPOSED GAS MAIN IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE.
15. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
16. THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
17. POWER FEEDS AND INTERCONNECTIONS FOR SITE LIGHTING TO BE COORDINATED WITH THE ELECTRICAL ENGINEER.
18. EXISTING UTILITY STUBS WHICH WILL NOT BE USED SHALL BE SHUT OFF AND DISCONNECTED AS APPROPRIATE.

LEGEND

- SEWER MANHOLE
- SEWER CLEANOUT
- SEWER VENT
- SEWER LINE
- CONCRETE PIPE ENCASEMENT
- WATER LINE (W)
- WATER VALVE (WV)
- HYDRANT
- WATER LINE REDUCER
- GAS LINE (GAS)
- GAS VALVE (GV)
- GREASE TRAP
- OVER HEAD WIRE (OHW)
- UTILITY POLE
- ELECTRICAL CONDUIT (E)
- IRRIGATION SLEEVE
- TELE/CABLE CONDUIT (T-C)



SEWER PIPE CAPACITY CALCULATION

1. PROPOSED HOTEL FLOW RATE = 18,930 GPD (SEE SEWER FLOW RATE CALCULATION HEREON).
2. INFLOW AND INFILTRATION (I/I) CALCULATION: PER ENV-WQ 704.03(f)(2), THE I/I IS 300 GAL./INCH DIA. PER MILE PER DAY: ((172'/5280')(8"))*300=78 GPD
3. TOTAL FLOW RATE = 18,930 GPD + 78 GPD = 19,008 GPD
4. PEAK FLOW RATE IS CALCULATED USING A 6x PEAKING FACTOR
   = (19,008 GPD/24 HOURS/60 MINUTES/60 SECONDS)*6x PEAKING FACTOR + (78 I/I GPD/24/60/60)
   = 1.32 GALLONS PER SECOND = 0.2 CUBIC FEET PER SECOND.
1. THE FINAL SECTION OF 8" SEWER PIPE (LENGTH OF 82 FEET, SLOPE OF 9%) CAPACITY AT 60% DEPTH IS 1.9 CFS, WHICH EXCEEDS THE PEAK FLOW RATE OF 0.2 CFS.

SEWER FLOW RATE CALCULATION

1. PER CITY OF DOVER REQUIREMENTS, FLOW RATE CALCULATIONS ARE BASED ON ENV-WQ 1000 TABLE 1008-1: "UNIT DESIGN FLOW".
2. EXISTING FLOW RATE FOR BURGER KING RESTAURANT BASED ON "FOOD SERVICE: CAFETERIA OR TABLE SERVICE, PAPER SERVICE, PLUS TOILET AND KITCHEN WASTE" @ 20 GPD/SEAT PLUS 20 GPD/EMPLOYEE. EXISTING RESTAURANT HAS 145 SEATS, AND 18 EMPLOYEES DURING LARGEST SHIFT.

   EXISTING FLOW RATE = (20 GPD/SEAT)*(145 SEATS) + (20 GPD/EMPLOYEE)*(18 EMPLOYEES)
   = 2,900 GPD + 360 GPD
   = 3,260 GPD
3. PROPOSED FLOW RATE FOR HOTEL BASED ON "HOTELS AND MOTELS" @ 200 GPD/ROOM PLUS 10 GPD/EMPLOYEE. PROPOSED HOTEL HAS 94 ROOMS AND 13 EMPLOYEES DURING THE MAXIMUM SHIFT.

   PROPOSED FLOW RATE = (200 GPD/ROOM)*(94 ROOMS) + (10 GPD/EMPLOYEE)*(13 EMPLOYEES)
   = 18,800 GPD + 130 GPD
   = 18,930 GPD
4. TOTAL INCREASE IN SEWER FLOW RATE FOR THE PROPOSED PROJECT

   = (PROPOSED HOTEL FLOW OF 18,930 GPD) – (EXISTING BK RESTAURANT FLOW OF 3,260 GPD)

   = 15,670 GPD INCREASE

CITY OF DOVER UTILITY NOTES:

1. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
2. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
3. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
4. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
5. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
6. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
7. ALL ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
8. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
9. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND THE CITY OF DOVER COMMUNITY SERVICE REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DIG SAFE

BEFORE YOU DIG CALL 811 OR 1-888-DIG-SAFE 1-888-344-7233

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_UTILITIES.DWG

STATE OF NEW HAMPSHIRE - BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER

01.30.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

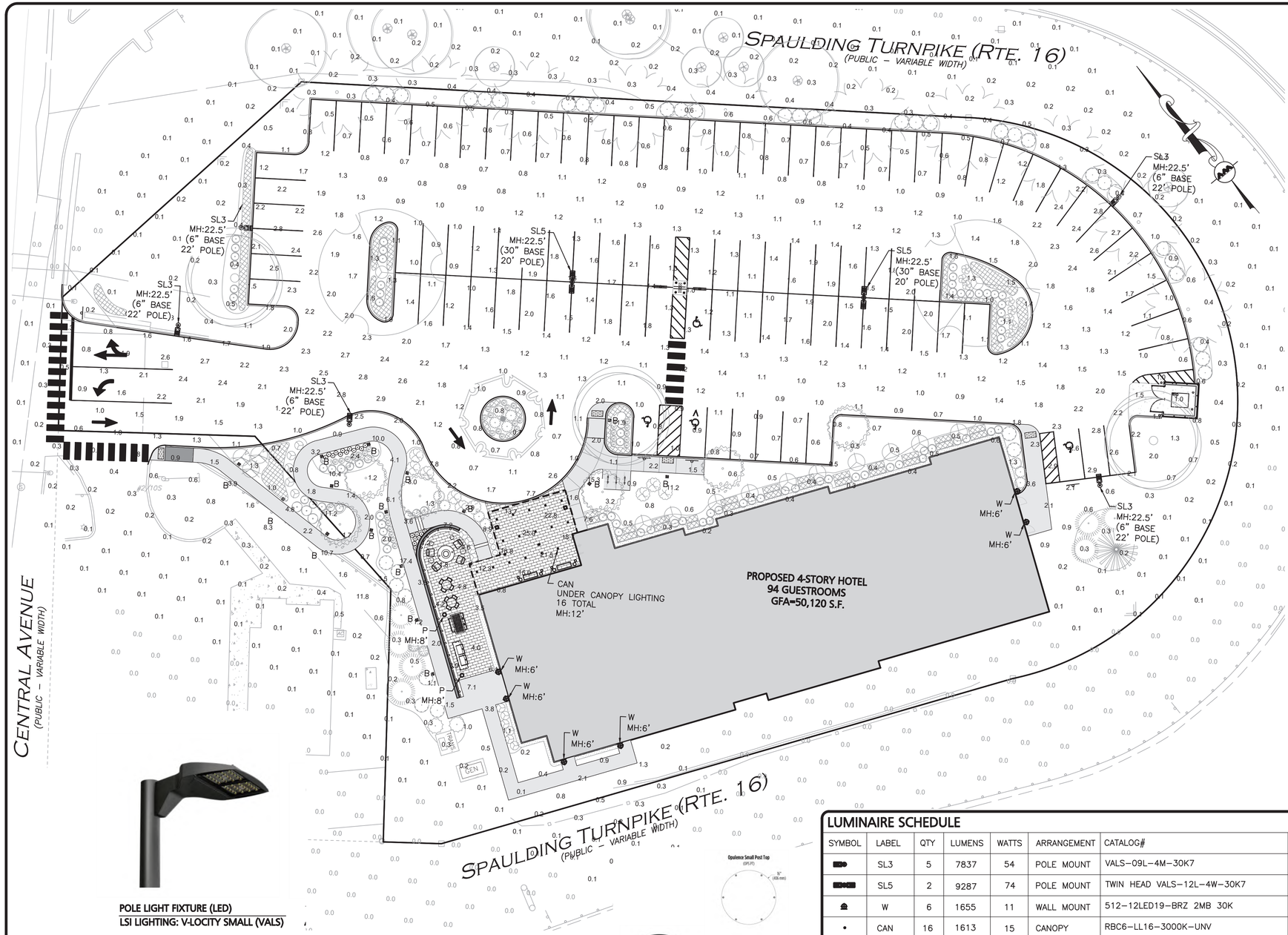
ALLEN & MAJOR ASSOCIATES, INC.
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400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: UTILITIES PLAN

SHEET No. C-104

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LEGEND

SINGLE POLE LIGHT	
DOUBLE POLE LIGHT	
BOLLARD LIGHT	
CANOPY LIGHT	
WALL SCONCE	
LIGHTING LEVELS GIVEN IN FOOT CANDLES	0.0 0.1 0.2 0.4 0.6

NOTES:

1. THE PURPOSE OF THIS PLAN IS DEPICT THE PROPOSED SITE LIGHTING FIXTURES AND PROVIDE THE PHOTOMETRIC LIGHTING LEVELS.
2. LIGHTING VENDOR INFORMATION:
   EXPOSURE LIGHTING
   CONTACT: CHRIS PECHALK
   Cpechalk@exposure2lighting.com
   603-540-7345
3. BUILDING MOUNTED LIGHTS AND LIGHTS WITHIN THE PARKING AREA SHALL OPERATE ON A PROGRAMMABLE TIMER. CONTROLS, OPTIONS, AND ACCESSORIES SHALL BE SELECTED BY THE OWNER.
4. CONTROLS FOR ALL EXTERIOR BUILDING MOUNTED LIGHTING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
5. WIRING FOR ALL BUILDING MOUNTED FIXTURES SHALL BE PROVIDED BY THE BUILDING ELECTRICAL CONTRACTOR.
6. SIZING AND LAYOUT OF THE WIRING OF THE SITE LIGHTING FIXTURES SHALL BE PROVIDED BY THE SITE ELECTRICAL CONTRACTOR.
7. LIGHT POLES ADJACENT TO PARKING SHALL HAVE THE 3'-0" REVEAL FOOTING. LIGHT POLES ADJACENT TO SIDEWALKS SHALL HAVE FOOTING IN A FLUSH CONDITION.
8. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
9. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. NO SUBSTITUTIONS, ADDITIONS, OR CHANGES MAY BE MADE WITHOUT PRIOR APPROVAL BY THE OWNER/ARCHITECT.
11. EXACT MOUNTING DETAILS TO BE DETERMINED AT THE JOBSITE BY ELECTRICAL CONTRACTOR.
12. ALL PROPOSED LIGHTING FIXTURES SHALL BE DARK SKY COMPLIANT.
13. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL LIGHTING INFORMATION AND COORDINATION WITH BUILDING ELECTRICAL.
14. FOOT CANDLE VALUES SHOWN ON THE PLAN ARE PRODUCED UTILIZING DESIGN MASTER PHOTOMETRICS SOFTWARE AND ASSOCIATED IES FILES BY THE MANUFACTURER FOR THE PROPOSED LIGHT FIXTURE.
15. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
16. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

POLE LIGHT FIXTURE (LED)
LSI LIGHTING: V-LOCITY SMALL (VALS)



PATIO LIGHT FIXTURE (LED)
LSI LIGHTING: OPULANCE SMALL

LUMINAIRE SCHEDULE

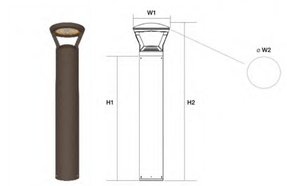
SYMBOL	LABEL	QTY	LUMENS	WATTS	ARRANGEMENT	CATALOG#	HEIGHT	MANUFACTURER
	SL3	5	7837	54	POLE MOUNT	VALS-09L-4M-30K7	22'-6"	LSI INDUSTRIES
	SL5	2	9287	74	POLE MOUNT	TWIN HEAD VALS-12L-4W-30K7	22'-6"	LSI INDUSTRIES
	W	6	1655	11	WALL MOUNT	512-12LED19-BRZ 2MB 30K	6'-0"	INDESSA LIGHTING
•	CAN	16	1613	15	CANOPY	RBC6-LL16-3000K-UNV	12'-0"	RAYON LIGHTING
■	B	16	1745	14	SIDEWALK BOLLARD	BL2A-24(14W)-SC-000K-33-XX-UD-P	3'-6"	ADVANTAGE LIGHTING SOLUTIONS
	P	2	2773	20	PATIO LIGHT	OPS-PT-03L-3W-UNV-30K8-BLK	8'-0"	LSI INDUSTRIES

LIGHTING LEVEL SUMMARY

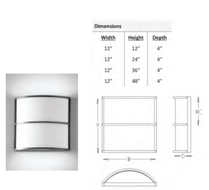
AREA	UNITS	AVERAGE	MAX.	MIN.	AVG/MIN	MAX/MIN
SITE WIDE	Fc	1.0	25.0	0.0	N.A.	N.A.
PARKING	Fc	1.4	2.9	0.5	2.7	5.8
PATIO	Fc	4.6	7.2	1.8	2.5	4.0
UNDER CANOPY	Fc	16.9	25.0	6.8	2.5	3.7

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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SIDEWALK BOLLARD FIXTURE (LED)
ADVANTAGE LIGHTING SOLUTIONS



WALL MOUNT FIXTURE (LED)
INDESSA LIGHTING: 512



UNDER CANOPY (LED)
RAYON LIGHTING: RBC6-FN

R: \PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_LIGHTING.DWG

BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
01.30.26
PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
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environmental consulting ◆ landscape architecture
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DRAWING TITLE:
LIGHTING PLAN

SHEET No.
C-105

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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

R: \PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_NEIGHBORHOOD PLAN.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER

01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

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SAN DIEGO, CA 92130

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WESTPORT, MA 02790

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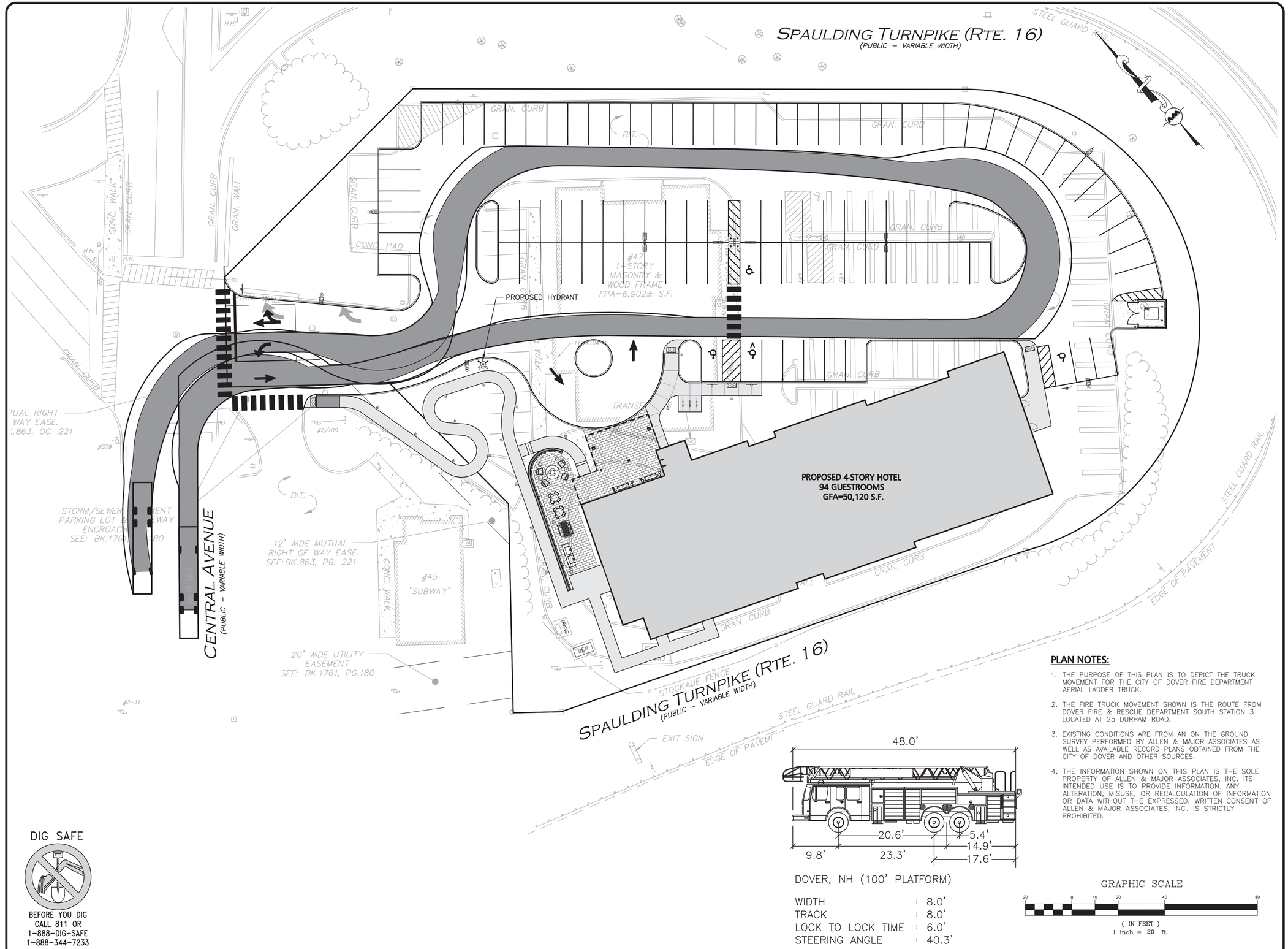
DRAWING TITLE:

NEIGHBORHOOD PLAN

SHEET No.

C-106

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DOVER, NH (100' PLATFORM)

WIDTH	:	8.0'
TRACK	:	8.0'
LOCK TO LOCK TIME	:	6.0'
STEERING ANGLE	:	40.3'

PLAN NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE TRUCK MOVEMENT FOR THE CITY OF DOVER FIRE DEPARTMENT AERIAL LADDER TRUCK.
2. THE FIRE TRUCK MOVEMENT SHOWN IS THE ROUTE FROM DOVER FIRE & RESCUE DEPARTMENT SOUTH STATION 3 LOCATED AT 25 DURHAM ROAD.
3. EXISTING CONDITIONS ARE FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
4. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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1-888-344-7233

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_TRUCK TURNING.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

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SAN DIEGO, CA 92130

APPLICANT:
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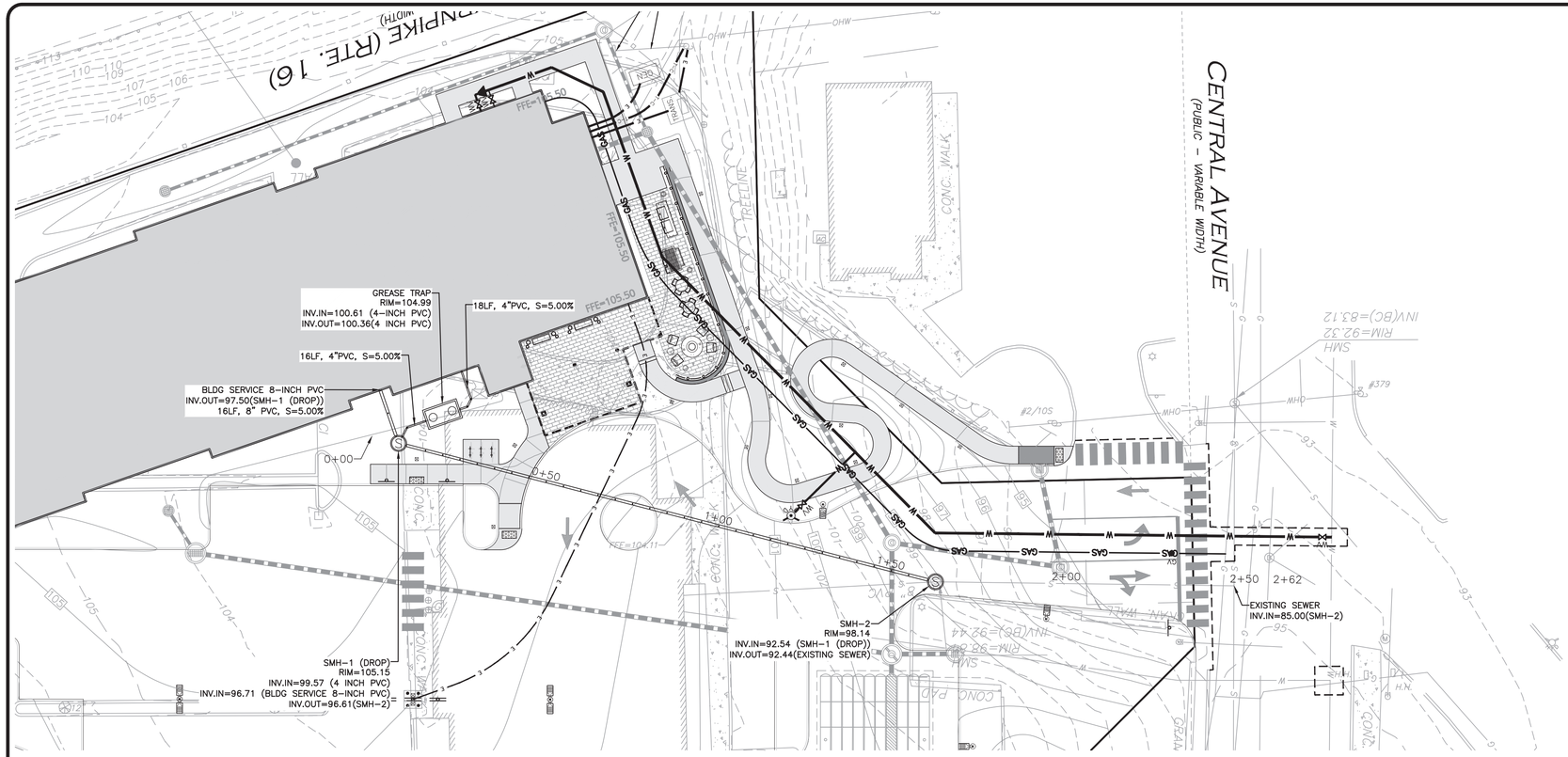
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DRAWING TITLE:
TRUCK TURNING PLAN

SHEET No.
C-107

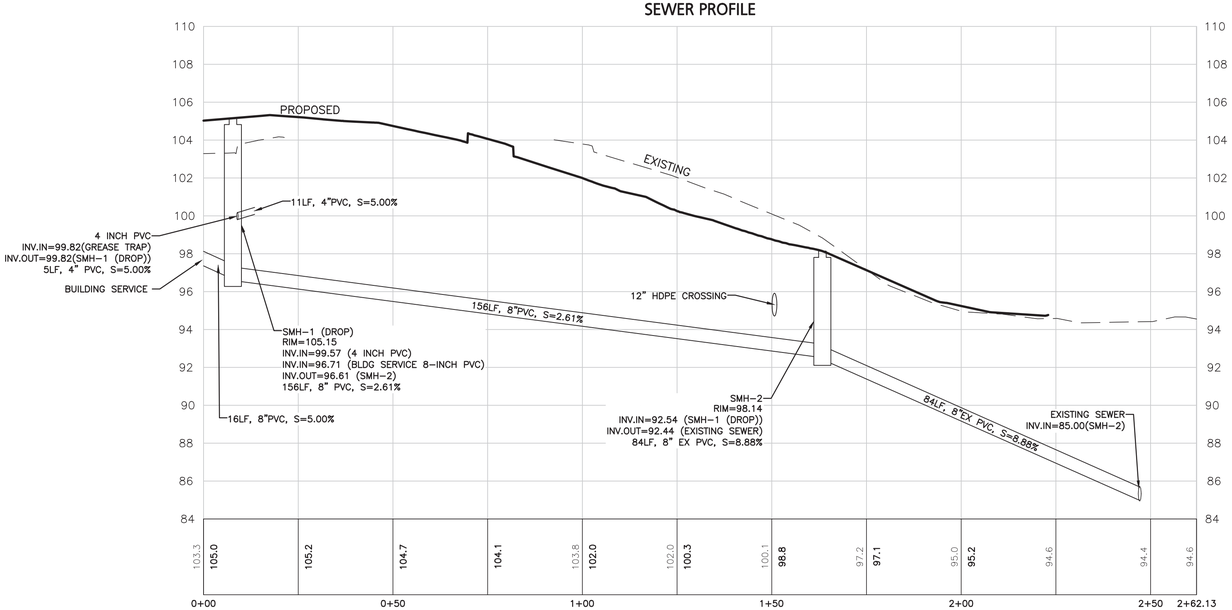
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LEGEND

SEWER MANHOLE	S
SEWER CLEANOUT	
SEWER VENT	V
SEWER LINE	
CONCRETE PIPE ENCASEMENT	
WATER LINE	W
WATER VALVE	WV
HYDRANT	
WATER LINE REDUCER	
GAS LINE	GAS
GAS VALVE	GV
GREASE TRAP	
OVER HEAD WIRE	OHW
UTILITY POLE	
ELECTRICAL CONDUIT	E
IRRIGATION SLEEVE	
TELE/CABLE CONDUIT	T/C

SEWER PROFILE



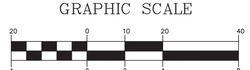
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BEFORE YOU DIG
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1-888-DIG-SAFE
1-888-344-7233

PLAN NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SEWER PROFILE AND PROVIDE INFORMATION REGARDING THE SEWER STRUCTURES AND PIPES.
2. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

GRAPHIC SCALE



Horizontal: 1 inch = 20 ft.
Vertical: 1 inch = 4 ft.

STATE OF NEW HAMPSHIRE
BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

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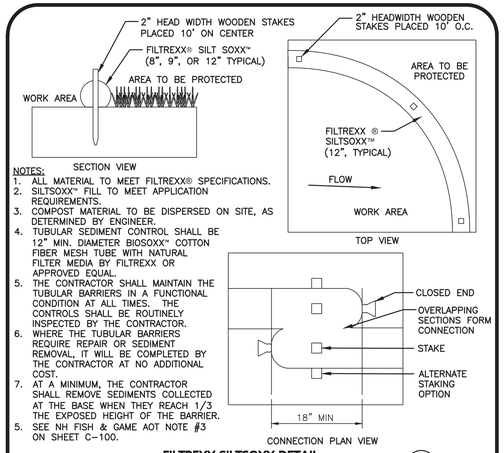
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DRAWING TITLE: SEWER PLAN & PROFILE

SHEET No. C-201

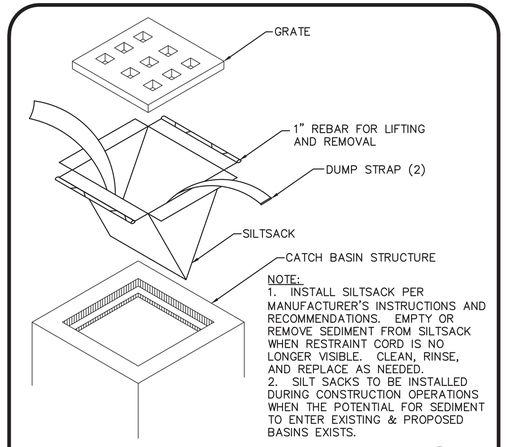
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R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_UTILITIES.DWG



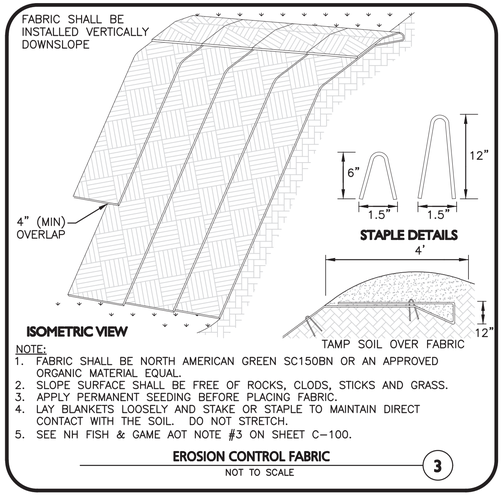
NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILTSOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. TUBULAR SEDIMENT CONTROL SHALL BE 12" MIN. DIAMETER BIOSOXX™ COTTON FIBER MESH TUBE WITH NATURAL FILTER MEDIA BY FILTREXX OR APPROVED EQUAL.
5. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
6. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
7. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.
5. SEE NH FISH & GAME AOT NOTE #3 ON SHEET C-100.

FILTREXX SILTSOXX DETAIL (1)
NOT TO SCALE



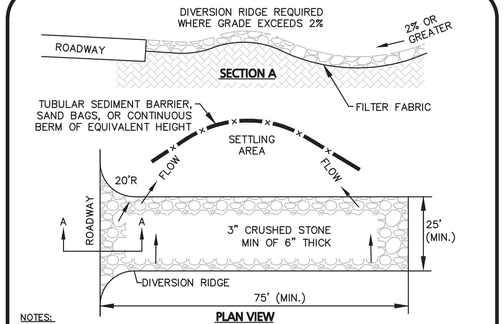
NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

CATCH BASIN INLET PROTECTION (2)
NOT TO SCALE



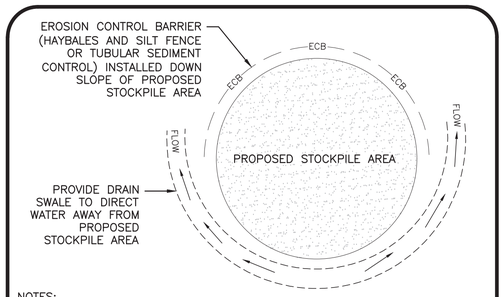
NOTE:
1. FABRIC SHALL BE NORTH AMERICAN GREEN SC150BN OR AN APPROVED ORGANIC MATERIAL EQUAL.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.
3. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. SEE NH FISH & GAME AOT NOTE #3 ON SHEET C-100.

EROSION CONTROL FABRIC (3)
NOT TO SCALE



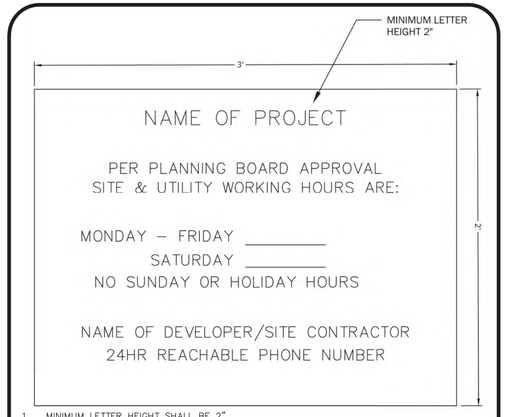
NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

STABILIZED CONSTRUCTION ENTRANCE (4)
NOT TO SCALE



NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 3LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCKPILE PROTECTION (5)
NOT TO SCALE

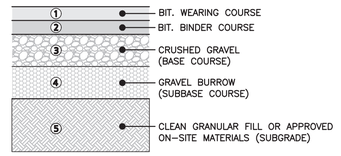


1. MINIMUM LETTER HEIGHT SHALL BE 2".
2. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND.
3. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND.
4. HOURS OF THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

CONSTRUCTION SIGN (6)
NOT TO SCALE

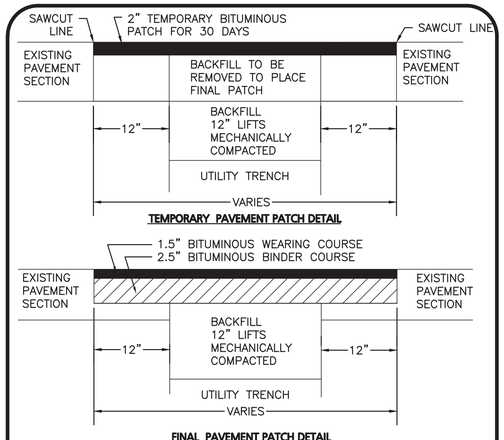
FLEXIBLE PAVEMENT DESIGN SECTION		
LAYER NUMBER	LAYER DESCRIPTION	LAYER THICKNESS (INCHES)
1	BITUMINOUS WEARING COURSE (¾" AGGREGATE – NHDOT PRE-APPROVED MIX DESIGN)	1.5"
2	BITUMINOUS BINDER COURSE (¾" AGGREGATE – NHDOT PRE-APPROVED MIX DESIGN)	2.0"
3	CRUSHED GRAVEL (BASE COURSE) (NHDOT ITEM 304.3)	6"
4	GRAVEL BORROW (SUBBASE COURSE) (NHDOT ITEM 304.2)	12"
5	CLEAN GRANULAR FILL MATERIAL OR APPROVED ON-SITE MATERIALS (SUBGRADE)	AS NECESSARY

TABLE 304-1: NHDOT GRADATION SPECIFICATIONS			
SIEVE SIZE	PERCENT PASSING BY WEIGHT		
	BASE COURSE	SUBBASE COURSE	SELECT GRANULAR FILL
3"	100	–	70–100
2"	95–100	–	–
1½"	–	–	–
¾"	55–85	–	–
No. 4	27–52	25–70	25–80
No. 200	0–12	0–12	0–12

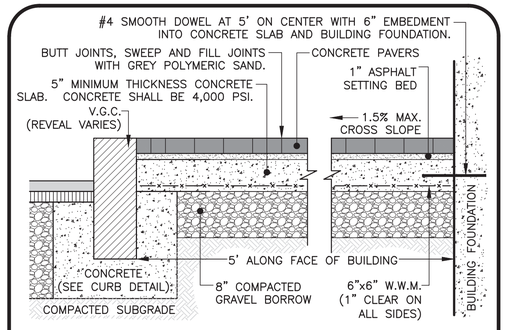


NOTES:
1. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ANY RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER.
2. TOPSOIL SHALL BE REMOVED BENEATH ALL PAVEMENT AREAS TO EXPOSE THE NATURALLY-OCCURRING SOILS OR ACCEPTABLE ON-SITE FILL MATERIALS.
3. THE SUBGRADE SHOULD BE PROOFROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER USING AT LEAST 4 PASSES OF A 10-TON VIBRATORY ROLLER. AREAS OF THE SUBGRADE THAT 'WEAVE' OR 'ROLL' EXCESSIVELY SHOULD BE OVEREXCAVATED AND REPLACED WITH DRIER CLEAN GRANULAR FILL MATERIAL.
4. THE PAVEMENT SUBGRADE CONSISTING OF THE SPECIFIED CLEAN GRANULAR FILL SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM DESIGNATION D-1557.

PAVEMENT SECTION (7)
NOT TO SCALE

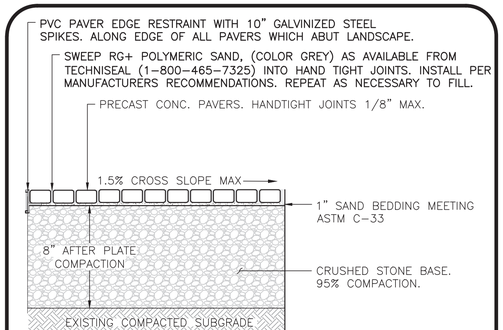


PAVEMENT TRENCH PATCH DETAIL (8)
NOT TO SCALE



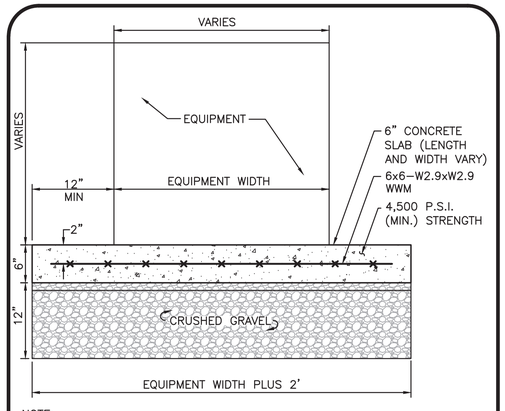
NOTES:
1. UNLOCK PRECAST CONCRETE PAVER MODEL: HOLLANDSTONE (4" X 8" X 2 3/8") OR SIMILAR. HAND-TIGHT JOINTS 1/8" MAX. COLOR TO BE SELECTED BY OWNER. PROVIDE SAMPLES AND SHOP DRAWINGS OF PAVERS TO OWNER FOR APPROVAL PRIOR TO ORDERING.
2. SUBMIT SAMPLES & SHOP DRAWING OF PAVERS AND COLOR CHART FOR APPROVAL PRIOR TO ORDERING.
3. SUBMIT SHOP DRAWING FOR APPROVAL OF SAND & CRUSHER RUN SIEVE ANALYSIS PRIOR TO ORDERING.

CONCRETE PAVERS SIDEWALK AREA (9)
NOT TO SCALE



NOTES:
1. PAVERS TO BE UNILOCK ARTLINE OR EQUAL,
2. SUBMIT SAMPLES & SHOP DRAWING OF PAVERS AND COLOR CHART FOR APPROVAL PRIOR TO ORDERING.
3. SUBMIT SHOP DRAWING FOR APPROVAL OF SAND & CRUSHER RUN SIEVE ANALYSIS PRIOR TO ORDERING.

CONCRETE PAVERS AT PATIO AREA (10)
NOT TO SCALE



NOTE:
1. CONFIRM DIMENSIONS WITH GENEROTOR SUPPLIER PRIOR TO CONSTRUCTION.
2. REFER TO MEP DRAWINGS FOR ANY PIPE, CONDUIT AND GROUND WIRE LOCATIONS

GENERATOR PAD (11)
NOT TO SCALE

STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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SHEET No. C-501

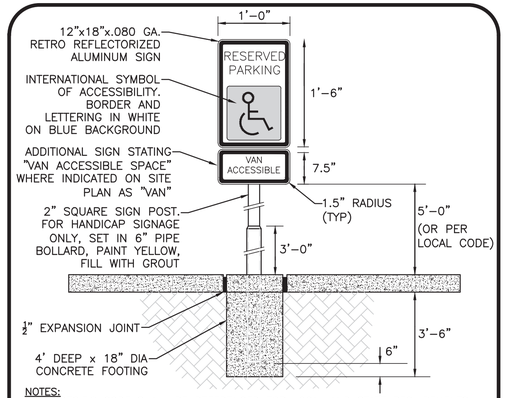
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R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_DETAILS.DWG

MUTCD NUMBER	SIGN	SIZE (MIN)	MOUNTING HEIGHT	DESCRIPTION	RETRO-FLECTIVE
R1-1	STOP	30"x30"	7' - 0"	WHITE ON RED	YES
R7-8(M) (MODIFIED)	HANDICAPPED PARKING / VAN ACCESSIBLE	12"x24"	7' - 0"	RED ON WHITE	YES
R7-8	HANDICAPPED PARKING	12"x18"	7' - 0"	GREEN & BLUE ON WHITE	YES

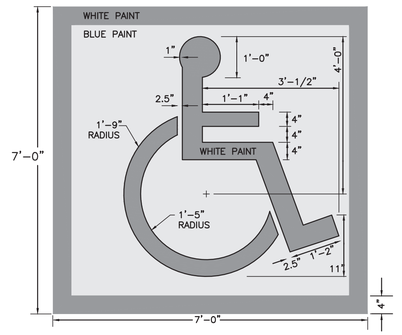
NOTES:
1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH MUTCD STANDARDS.
2. WHERE APPLICABLE THE SIGN SUPPORT SHALL COMPLY WITH THE BREAKAWAY REQUIREMENTS OF THE LATEST EDITION OF AASHTO'S "SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRIES, AND TRAFFIC SIGNALS".

SIGN TABLE (1)
NOT TO SCALE



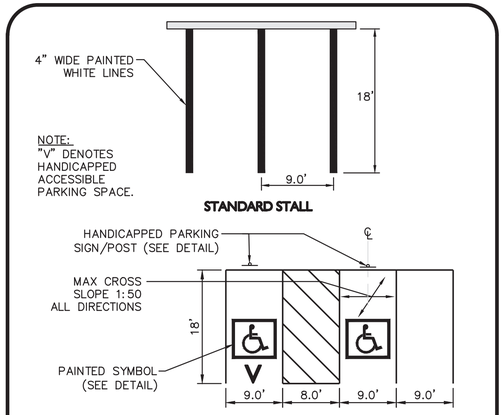
NOTES:
1. SPECIFIC CODE SHALL BE REFERENCED FOR LOCAL AND STATE REQUIREMENTS.
2. PROVIDE (1) SIGN PER HANDICAP SPACE. SEE SITE PLAN FOR EXACT LOCATION.
3. EXPANSION JOINT MATERIAL NOT REQUIRED WITH FLEXIBLE PAVEMENT.

ACCESSIBLE PARKING SIGN POST (2)
NOT TO SCALE



SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

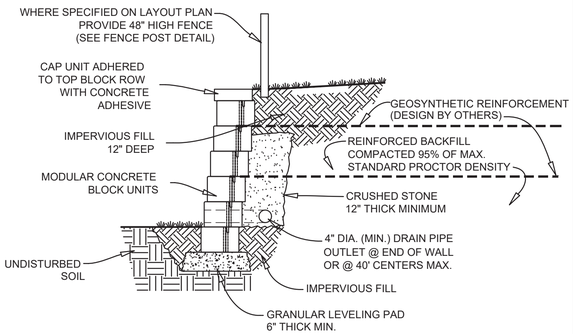
ACCESSIBLE PARKING STALL PAVEMENT MARKING (3)
NOT TO SCALE



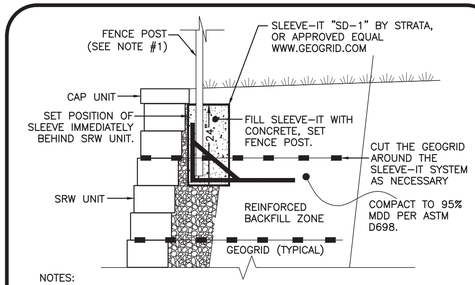
HANDICAP & STANDARD PARKING STRIPING (4)
NOT TO SCALE

NOTES:

1. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE STRUCTURAL DESIGN OF THE MODULAR BLOCK RETAINING WALLS. REFER TO GEOTECHNICALREPORT FOR SOIL DESIGN PARAMETERS
2. WALLS THREE FEET OR GREATER IN HEIGHT SHALL BE DESIGNED BY A NEW HAMPSHIRE REGISTERED PROFESSIONAL STRUCTURAL ENGINEER.
3. STAMPED WALLS DESIGNS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE CITY OF DOVER BUILDING DEPARTMENT.
4. WALL DESIGNS AND CALCULATIONS SHALL BE PROVIDED TO THE PROJECT GEOTECHNICAL ENGINEER TO CONFIRM THAT GEOTECHNICAL RECOMENDATIONS HAVE BEEN PROPERLY INCLUDED.
5. WALL DESIGNS AND CALCULATIONS SHALL BE PROVIDED TO THE PROJECT CIVIL ENGINEER TO CONFIRM ELEVATIONS AND ALIGNMENT HAVE BEEN PROPERLY INCLUDED.
6. SMALL BLOCK UNITS SHALL BE THE SQUARE FOOT PRODUCT BY VERSA-LOK OR APPROVED EQUAL.
7. WALL HEIGHT WITHOUT REINFORCEMENT SHALL BE LIMITED TO 3' EXPOSED FACE.
8. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. REFER TO GEOTECHNICAL ENGINEER'S REPORT FOR SUBGRADE PREPARATION CRITERIA.



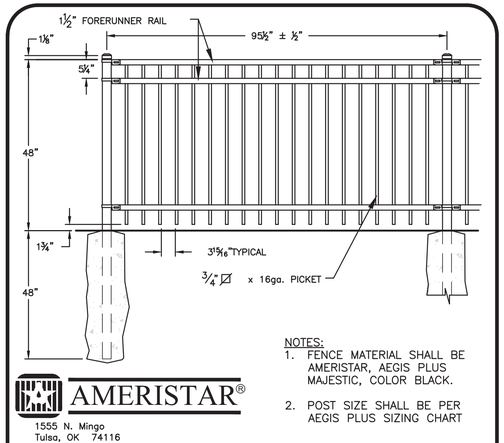
TYPICAL "SMALL BLOCK" RETAINING WALL (5)
NOT TO SCALE



NOTES:

1. FENCE POSTS SHALL BE FOR A 48" HIGH, BLACK VINYL COATED CHAIN LINK FENCE.
2. INSTALL SLEEVE-IT DURING THE CONSTRUCTION OF THE SEGMENTAL BLOCK RETAINING WALL.
3. GEO-GRID SHALL ONLY BE CUT AS ALLOWED BY THE STRUCTURAL ENGINEER FOR THE SEGMENTAL BLOCK RETAINING WALL.
4. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

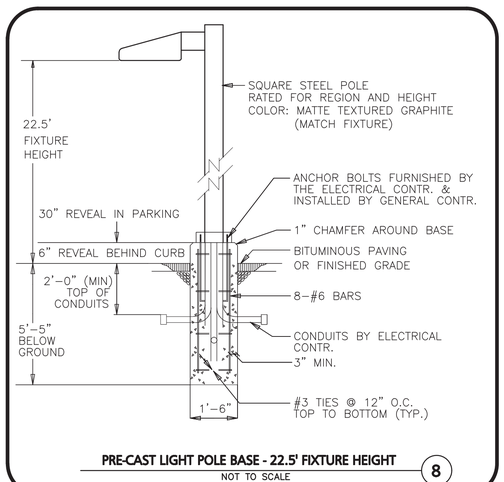
FENCE POST AT TOP OF BLOCK RETAINING WALL (6)
NOT TO SCALE



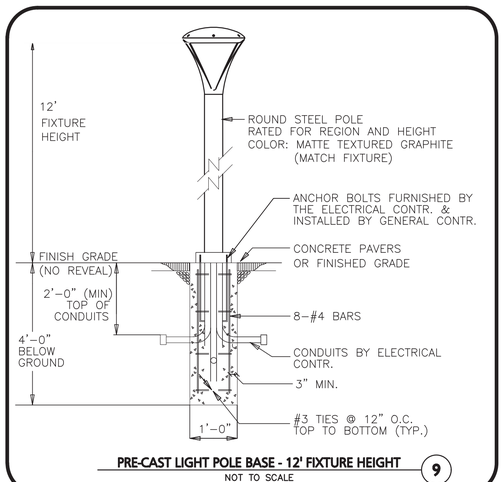
AMERISTAR®
1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422

NOTES:
1. FENCE MATERIAL SHALL BE AMERISTAR, AEGIS PLUS MAJESTIC, COLOR BLACK.
2. POST SIZE SHALL BE PER AEGIS PLUS SIZING CHART

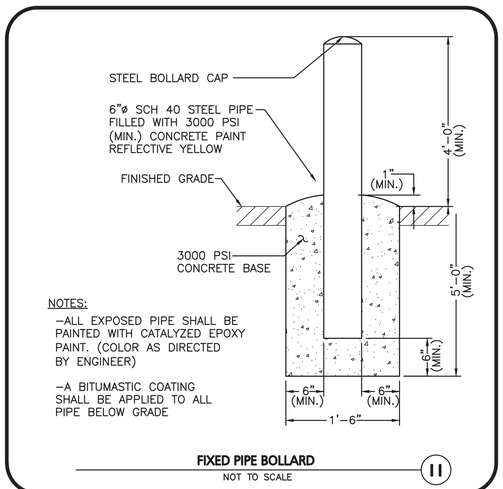
48" HIGH DECORATIVE STEEL FENCE (7)
NOT TO SCALE



PRE-CAST LIGHT POLE BASE - 22.5' FIXTURE HEIGHT (8)
NOT TO SCALE

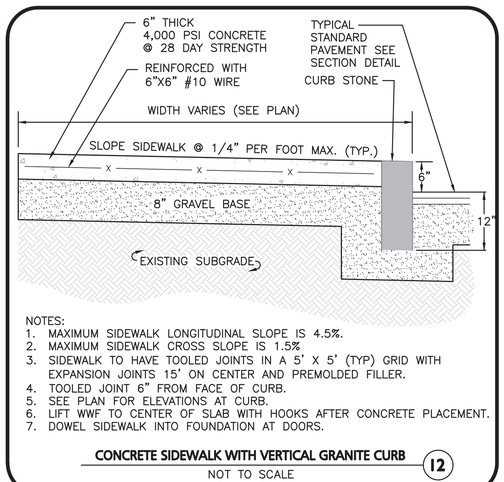


PRE-CAST LIGHT POLE BASE - 12' FIXTURE HEIGHT (9)
NOT TO SCALE



NOTES:
-ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY ENGINEER)
-A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

FIXED PIPE BOLLARD (11)
NOT TO SCALE



NOTES:
1. MAXIMUM SIDEWALK LONGITUDINAL SLOPE IS 4.5%.
2. MAXIMUM SIDEWALK CROSS SLOPE IS 1.5%
3. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' X 5' (TYP) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER.
4. TOOLED JOINT 6" FROM FACE OF CURB.
5. SEE PLAN FOR ELEVATIONS AT CURB.
6. LIFT WWF TO CENTER OF SLAB WITH HOOKS AFTER CONCRETE PLACEMENT.
7. DOWEL SIDEWALK INTO FOUNDATION AT DOORS.

CONCRETE SIDEWALK WITH VERTICAL GRANITE CURB (12)
NOT TO SCALE

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_DETAILS.DWG

STATE OF NEW HAMPSHIRE - BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER

01.30.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

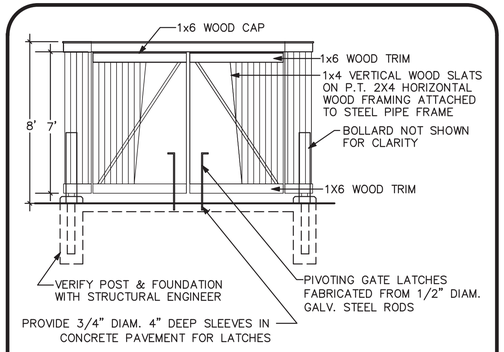
PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
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MANCHESTER, NH 03103
TEL: (603) 627-5500
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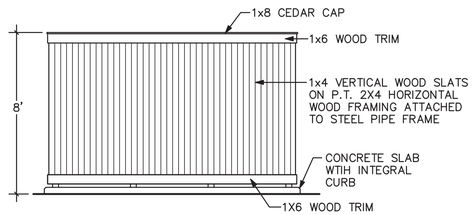
DRAWING TITLE: DETAILS
SHEET No. C-502

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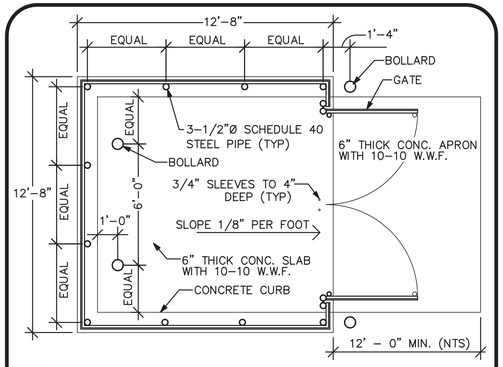
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE GATE (1)
NOT TO SCALE



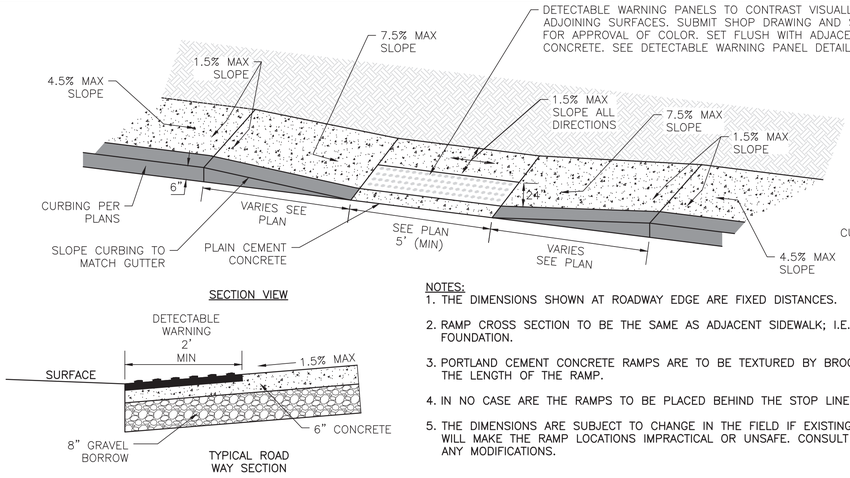
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE ELEVATION (2)
NOT TO SCALE



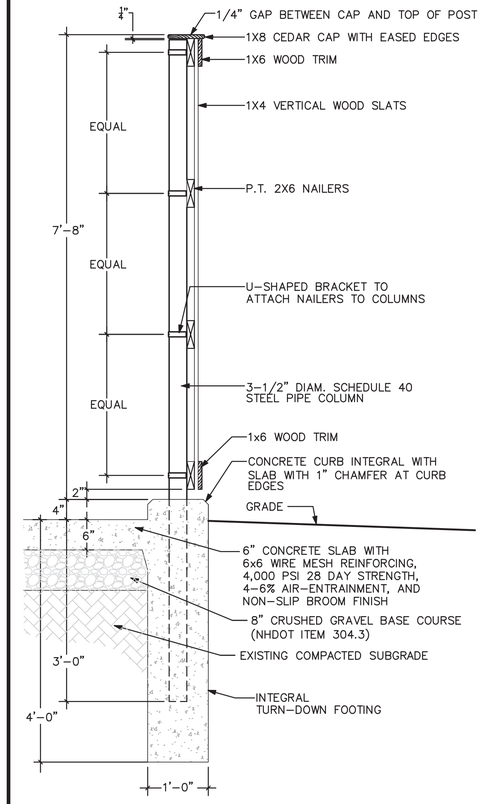
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE PLAN VIEW (3)
NOT TO SCALE



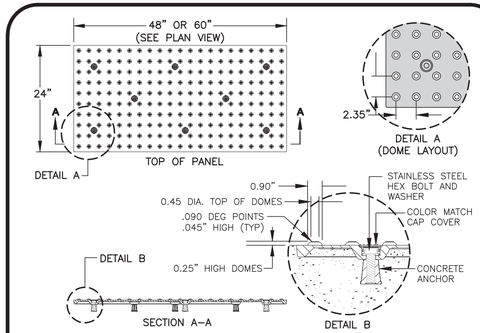
NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

ADA ACCESSIBLE CURB CUT AND TRANSITION (4)
NOT TO SCALE



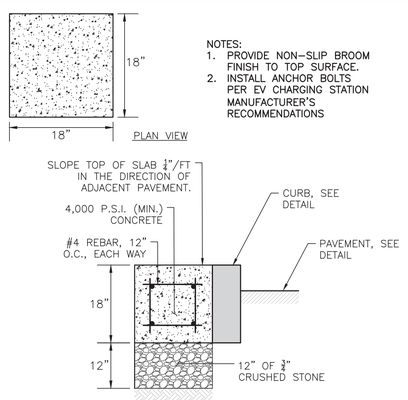
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE SECTION (5)
NOT TO SCALE



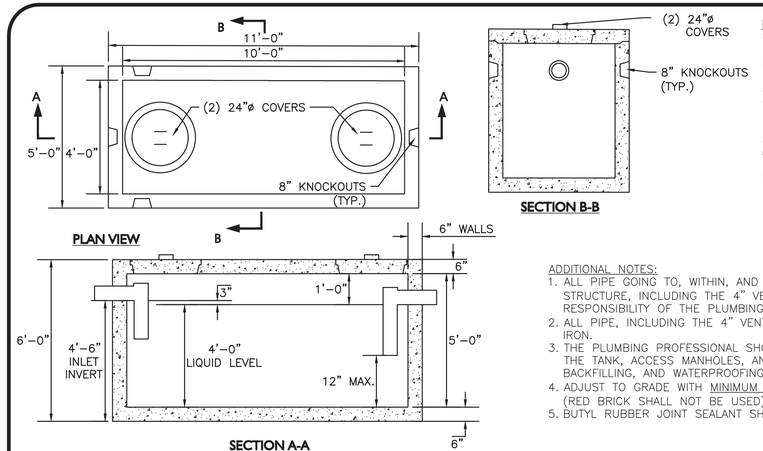
NOTES:
1. VENDOR INFORMATION: "ADATILE" WET SET ADA REPLACEABLE TACTILE (OR APPROVED EQUAL) AS MANUFACTURED BY ADATILE, PHONE: 1-800-372-0519, WWW.ADATILE.COM, EMAIL: INFO@ADATILE.COM
2. COLOR SHALL BE BLACK.
3. INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES.

WET SET ADA REPLACEABLE TACTILE PANEL (6)
NOT TO SCALE



NOTES:
1. PROVIDE NON-SLIP BROOM FINISH TO TOP SURFACE.
2. INSTALL ANCHOR BOLTS PER EV CHARGING STATION MANUFACTURER'S RECOMMENDATIONS

CONCRETE PAD FOR EV CHARGING STATION (7)
NOT TO SCALE



MANUFACTURER'S NOTES:
1. CONCRETE: 5,000 PSI MINIMUM STRENGTH @ 28 DAYS.
2. STEEL REINFORCING-ASTM A-615, GRADE 60.
3. COVER TO STEEL-1" MINIMUM.
4. TANKS ARE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH ASHHTO HS-20 LOADING.
5. EARTH COVER: 1 TO 5 FEET MAX.
6. CONSTRUCTION JOINT SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVILENT.
7. APPROX. WEIGHTS: TOP SLAB = 2.3 TONS; BOTTOM SECTION = 8.5 TONS.

ADDITIONAL NOTES:
1. ALL PIPE GOING TO, WITHIN, AND TO 10 FEET BEYOND THE CONCRETE STRUCTURE, INCLUDING THE 4" VENT PIPE, SHALL BE THE RESPONSIBILITY OF THE PLUMBING PROFESSIONAL.
2. ALL PIPE, INCLUDING THE 4" VENT PIPE TO THE ROOF, SHALL BE CAST IRON.
3. THE PLUMBING PROFESSIONAL SHOULD COORDINATE INSTALLATION OF THE TANK, ACCESS MANHOLES, AND DETAILS OF EXCAVATION, BACKFILLING, AND WATERPROOFING WITH THE CIVIL ENGINEER.
4. ADJUST TO GRADE WITH MINIMUM 12" OF CONCRETE BRICK AND MORTAR (RED BRICK SHALL NOT BE USED).
5. BUTYL RUBBER JOINT SEALANT SHALL BE USED AT ALL JOINTS.

GREASE TRAP (1,000 GAL) (8)
NOT TO SCALE

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_DETAILS.DWG

STATE OF NEW HAMPSHIRE - BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
01.30.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

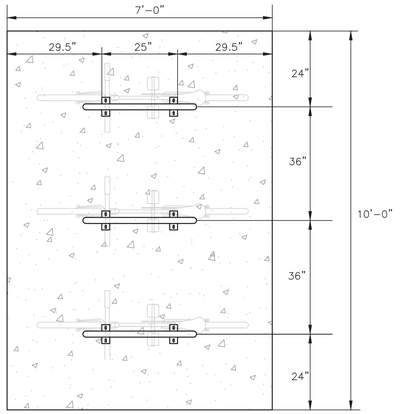
PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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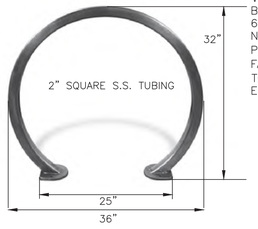
DRAWING TITLE: DETAILS

SHEET No. C-503

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PLAN VIEW

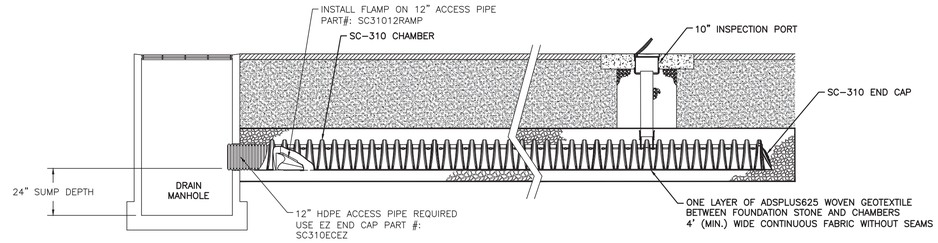


VENDOR INFORMATION:
BELSON OUTDOORS, LLC
627 AMERSALE DRIVE
NAPERVILLE, IL 60563
PHONE:(630) 897-8489
FAX:(630) 897-0573
TOLL FREE:(800) 323-5664
EMAIL: SALES@BELSON.COM

NOTES:

1. MODEL: CBBR-2CS-SS
2. THREE (3) RINGS TOTAL
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
4. SPACE RINGS 36" ON CENTER.

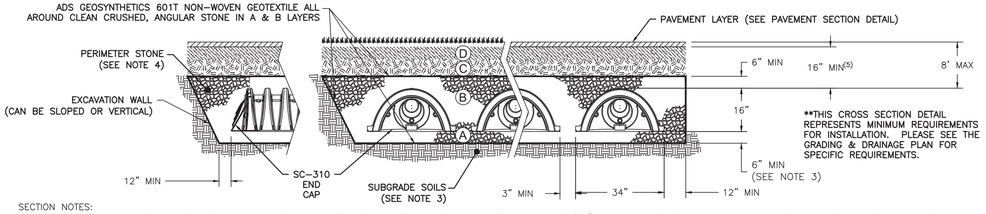
BICYCLE RACK
NOT TO SCALE — 1



STORMTECH SC-310 ISOLATOR PLUS ROW
NOT TO SCALE — 2

	MATERIAL LOCATION	DESCRIPTION	AASHTO CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	SEE PAVEMENT SECTION DETAIL FOR REQUIREMENTS.	3.25	DRY DENSITY OF AT LEAST 95 PERCENT AS DETERMINED BY ASTM DESIGNATION D-1557 (SEE PAVEMENT SECTION DETAIL FOR ADDITIONAL INFORMATION)
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 16" (400 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2][3]

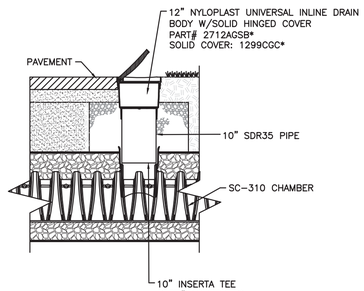
TABLE NOTES:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SECTION NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER SHALL BE NOTIFIED WHEN A "BOTTOM BED" INSPECTION IS READY. THE FABRIC, STONE, AND CHAMBERS AND CHAMBERS SHALL NOT BE PLACED WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 22"

NOTES FOR CONSTRUCTION EQUIPMENT:
1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 CHAMBERS IS LIMITED:
   A. NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   B. NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
   C. WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
3. FULL 36" OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
4. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
5. CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

STORMTECH SC-310 CROSS SECTION
NOT TO SCALE — 3



NOTE: THE PART# 2712AG10IPKIT CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

STORMTECH SC-310 10" INSPECTION PORT
NOT TO SCALE — 4

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
   A. INSPECTION PORTS (IF PRESENT)
      A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
      A.2. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
      A.3. IF SEDIMENT IS AT, OR ABOVE, 3" PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
   B. ALL ISOLATOR PLUS ROWS
      B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
      B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
         i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
         ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
      B.3. IF SEDIMENT IS AT, OR ABOVE, 3" PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
   A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° OR MORE IS PREFERRED
   B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
   C. VACUUM STRUCTURE SUMP AS REQUIRED

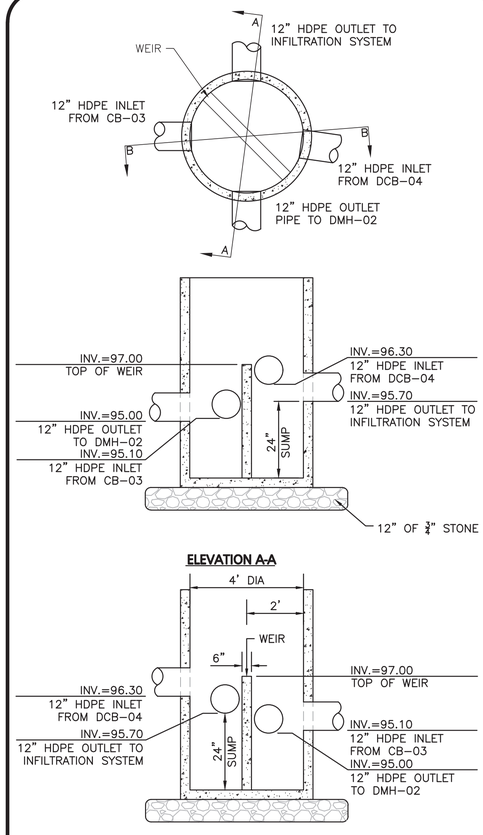
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

STORMTECH SC-310 INSPECTION AND MAINTENANCE
NOT TO SCALE — 5



NOTES:
SEE CITY OF DOVER DRAIN MANHOLE DETAIL FOR ADDITIONAL INFORMAITON.

4' DIAMETER OUTLET CONTROL STRUCTURE
NOT TO SCALE — 6

BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
01.30.26
PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

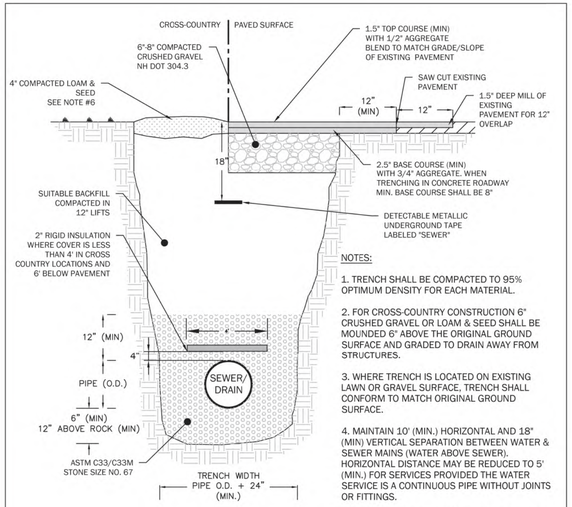
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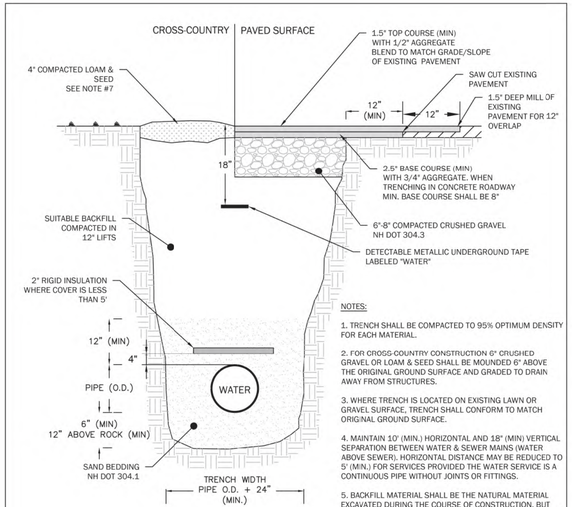
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NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE AND GRADED TO DRAIN AWAY FROM STRUCTURES.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

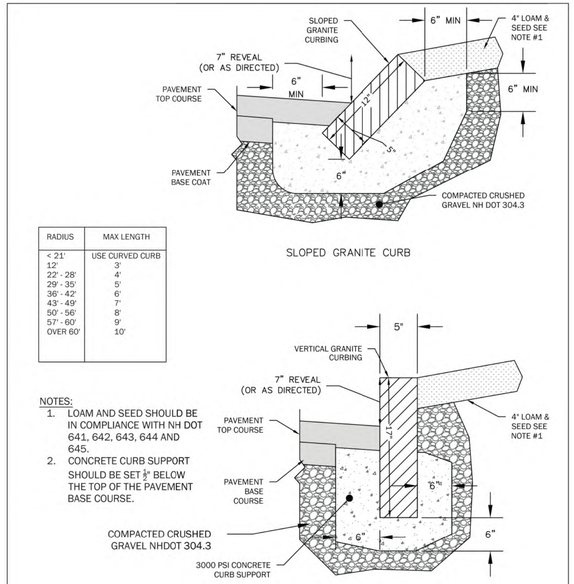
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-3	SEWER/DRAIN TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE AND GRADED TO DRAIN AWAY FROM STRUCTURES.
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5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-4	WATER TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

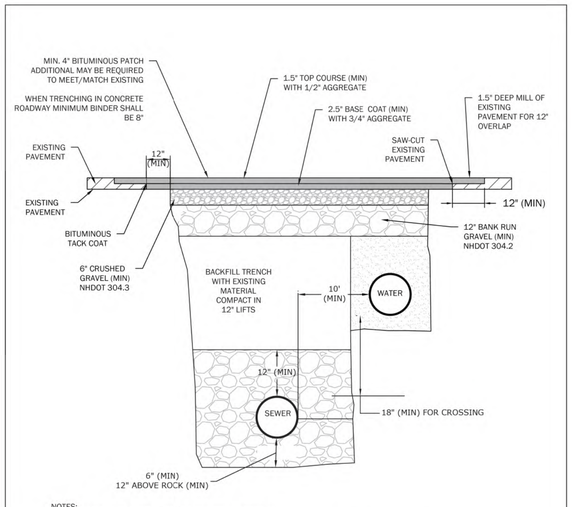


RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:

1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ¼" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

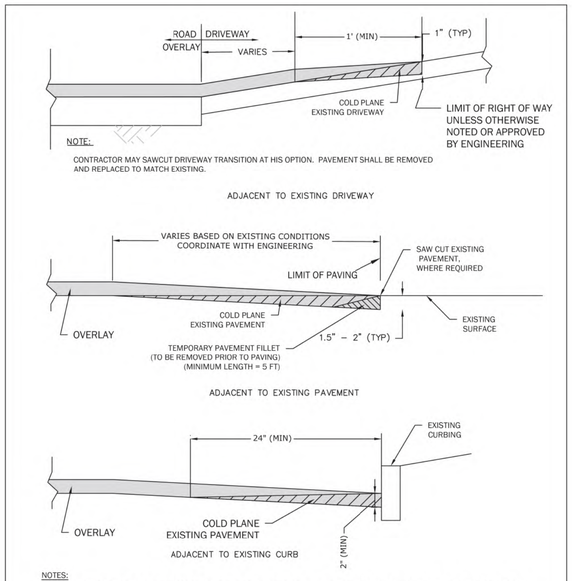
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-8	GRANITE CURB	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

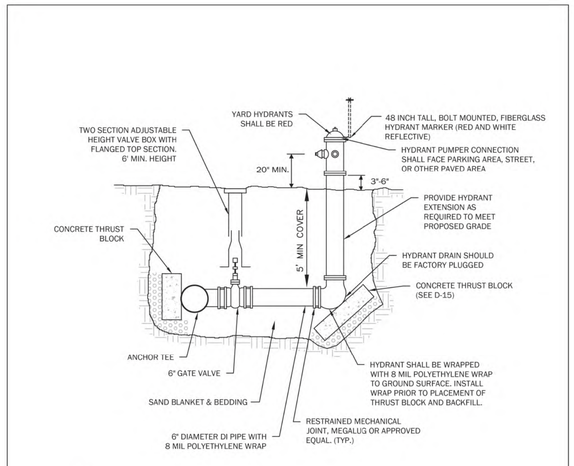
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-10	TYPICAL TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-12	PAVEMENT OVERLAY	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.
4. HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E-ZGUIDE PRODUCTS OR APPROVED EQUAL.
5. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD WATER TRENCH DETAIL D-4.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-14	FIRE HYDRANT	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

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BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

01.30.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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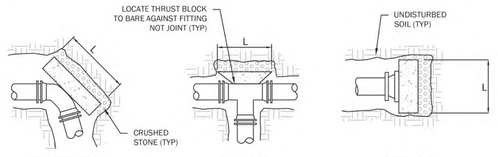
DRAWING TITLE:

CITY OF DOVER STANDARD DETAILS

SHEET No.

C-505

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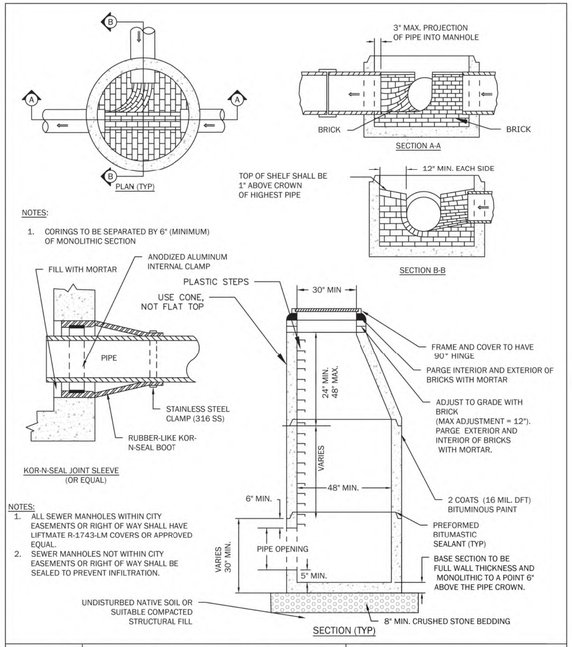


THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

Nominal Dia. (in)	PIPE SIZE 4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	SYSTEM PRESSURE: 125 PSI SAFETY FACTOR: 1.5 SOIL BEARING CAPACITY: 2,000 PSF					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

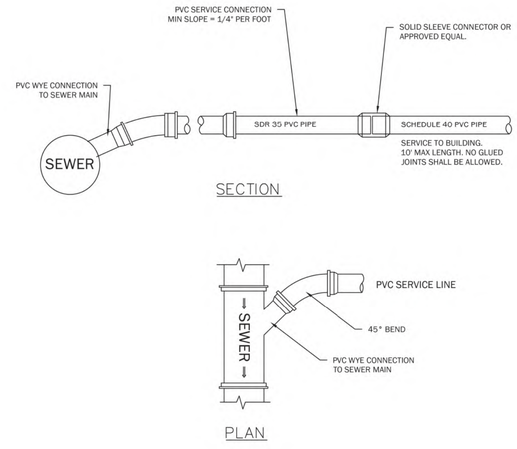
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–15	CONCRETE THRUST BLOCK	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

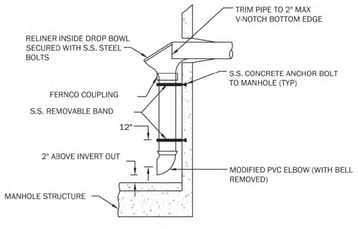
NOTES:
1. ALL SEWER MANHOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
2. SEWER MANHOLES NOT WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL BE SEALED TO PREVENT INFILTRATION.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–16	SEWER MANHOLE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–17	SEWER SERVICE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
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INTERNAL DROP

NOTES:

1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.

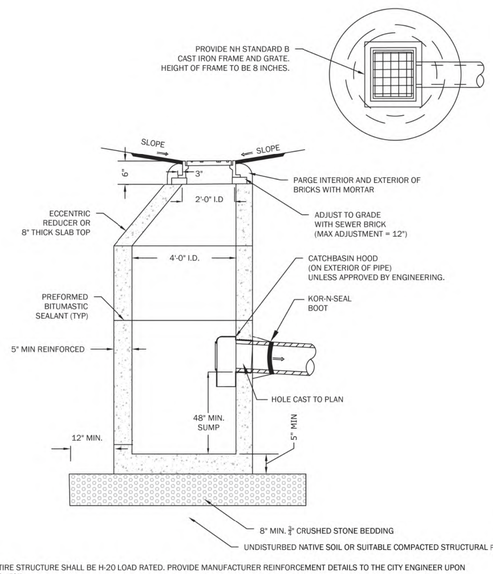
2. A MINIMUM 5 FT DIAMETER MANHOLE IS REQUIRED FOR AN INTERNAL DROP.

3. IF A DROP IS PROPOSED FOR AN EXISTING MANHOLE, THE BRICK SHELF SHALL BE REWORKED TO FORM A NEW CHANNEL FOR NEW DROP CONNECTIONS. IF STRUCTURE IS LESS THAN 5 FT IN DIAMETER, A NEW PRECAST MANHOLE SHALL BE INSTALLED.

3. BRICK INVERT NOT SHOWN ON DETAIL.

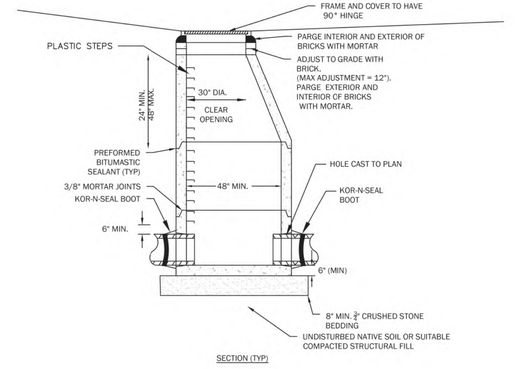
4. EXTERNAL DROPS ARE NOT PERMITTED UNLESSED AUTHORIZED IN WRITING BY COMMUNITY SERVICES.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–18	MANHOLE DROP INLET	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.
2. CONTRACTOR SHALL HAVE OPTION TO USE 6" OR 8" PRECAST GRADE RINGS TO ADJUST GRADE.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–19	CATCHBASIN	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
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SECTION (TYP)

NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–20	DRAIN MANHOLE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

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PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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DRAWING TITLE:
CITY OF DOVER STANDARD DETAILS

SHEET No.
C-506

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SECTION 33 36 00 - SANITARY SEWER SYSTEMS

PART 1 GENERAL

1.01 PRODUCTS

A. GENERAL: MATERIALS SHALL BE AS SPECIFIED HEREIN, EXCEPT THAT CONSIDERATION SHALL BE GIVEN TO OTHER PRODUCTS THAT MEET OR EXCEED THOSE SPECIFIED IF REQUESTED TEN (10) DAYS PRIOR TO DATE OF BID OPENING, IN ACCORDANCE WITH THE GENERAL CONDITIONS.

1.02 DESCRIPTION:

A. THE WORK UNDER THIS SECTION SHALL INCLUDE THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT AND SUPPLIES AND THE PERFORMANCE OF ALL OPERATIONS TO PROVIDE A COMPLETE WORKING SYSTEM AS REQUIRED BY THE DRAWINGS AND DETAILS AND AS SPECIFIED HEREIN, IN GENERAL, TO INCLUDE THE FOLLOWING ITEMS:

1. SANITARY SEWER SYSTEM FROM 5 FEET OUTSIDE THE BUILDING TO POINT OF TERMINATION AS SHOWN ON THE DRAWINGS.

2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE LOCAL DEPARTMENT OF PUBLIC WORKS AND NHDES.

1.03 RELATED WORK:

A. SECTION 31 23 00 – EARTHWORK.

B. SECTION 15401 – PLUMBING.

1.04 RELATED DOCUMENTS:

A. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE MUNICIPALITY.

B. ALL WORK FOR ITEMS NOT OTHERWISE COVERED BY 1.03.A ABOVE SHALL CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION (LATEST EDITION).

C. ALL WORK SHALL CONFORM TO THE PERMITS ISSUED BY THE STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.

1.05 PROJECT CONDITIONS:

A. KNOWN UNDERGROUND AND SURFACE UTILITY LINES ARE INDICATED ON THE DRAWINGS. INFORMATION ON THE DRAWINGS RELATING TO EXISTING UTILITY LINES AND SERVICES IS FROM THE BEST SOURCE PRESENTLY AVAILABLE. ALL SUCH INFORMATION IS FURNISHED ONLY FOR INFORMATION AND IS NOT GUARANTEED. COORDINATE WITH UTILITY COMPANIES, DIG SAFE AND THEIR CONTRACTORS, AND EXCAVATE TEST PITS AS REQUIRED TO DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES.

B. TEST BORINGS HAVE BEEN PERFORMED BY OWNER'S SEPARATE CONTRACTOR. LOCATIONS OF TEST BORINGS ARE SHOWN ON THE DRAWINGS. NEITHER THE OWNER NOR THE ENGINEERS MAKE WARRANTY, EITHER EXPRESSED OR IMPLIED, OF ACCURACY OF BORING DATA AS A REPRESENTATION OF TYPICAL CONDITIONS. THE CONTRACTOR SHALL MAKE HIS/HER OWN INVESTIGATION OF SUBSURFACE CONDITIONS AND SATISFY HER/HIMSELF AS TO CONDITION THEREOF AND SHALL BASE HIS/HER BID IN SOLE RELIANCE THEREON. SUCH INVESTIGATION MAY INCLUDE, BUT IS NOT NECESSARILY LIMITED TO: ADDITIONAL TEST PITS, BORINGS. NO ALLOWANCE WILL BE MADE FOR THE CONTRACTOR'S FAILURE TO PERFORM INVESTIGATION NECESSARY TO FULLY IDENTIFY AND SATISFY HIM/HERSELF AS TO SUBSURFACE CONDITIONS WHICH COULD AFFECT THE WORK.

C. PROTECT EXCAVATIONS BY SHORING, BRACING, SHEETING, UNDERPINNING, OR OTHER METHODS, AS REQUIRED TO PREVENT CAVE-INS OR LOOSE DIRT FROM ENTERING EXCAVATIONS. BARRICADE OPEN EXCAVATIONS AND POST WARNING LIGHTS AT WORK ADJACENT TO PUBLIC STREETS AND WALKS.

D. UNDERPIN ADJACENT STRUCTURE(S), INCLUDING UTILITY SERVICE LINES, WHICH MAY BE DAMAGED BY EXCAVATION OPERATIONS.

E. PROMPTLY REPAIR DAMAGE TO ADJACENT FACILITIES CAUSED BY SITE SEWER AND DRAINAGE OPERATIONS.

F. PROMPTLY NOTIFY THE OWNER OF UNEXPECTED SUB-SURFACE CONDITION

1.06 QUALITY ASSURANCE:

A. STANDARDS: COMPLY WITH STANDARDS SPECIFIED IN THIS SECTION. PROVIDE SHOP DRAWINGS TO THE OWNER OR OWNER'S REPRESENTATIVE.

B. QUALIFICATIONS OF INSTALLERS: USE ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

C. OBTAIN OWNER OR OWNER'S REPRESENTATIVE'S ACCEPTANCE OF INSTALLED AND TESTED SITE DRAINAGE SYSTEM PRIOR TO BACKFILLING.

1.07 SUBMITTALS:

A. PRODUCT DATA:

1. COMPLETE MATERIALS LIST OF ALL ITEMS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION.

2. MANUFACTURER'S SPECIFICATIONS AND OTHER DATA REQUIRED TO DEMONSTRATE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.

3. MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

B. TESTING AND INSPECTION REPORTS.

C. PROVIDE SITE SEWER AND DRAINAGE RECORD DRAWINGS:

1. LEGIBLY MARK DRAWINGS TO RECORD ACTUAL CONSTRUCTION.

2. INDICATE HORIZONTAL AND VERTICAL LOCATIONS REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.

3. IDENTIFY FIELD CHANGES OF DIMENSIONS AND DETAILS AND CHANGES MADE BY CHANGE ORDER.

1.08 COOPERATION AND COORDINATION WITH OTHER TRADES:

A. THE WORK SHALL BE SO PERFORMED THAT THE PROGRESS OF THE ENTIRE PROJECT CONSTRUCTION, INCLUDING ALL OTHER TRADES, SHALL NOT BE DELAYED AND NOT INTERFERED WITH. MATERIALS AND APPARATUS SHALL BE INSTALLED AS FAST AS CONDITIONS WILL PERMIT AND MUST BE INSTALLED PROMPTLY WHEN AND AS DIRECTED.

B. ALL WORK SHALL BE COORDINATED WITH OTHERS TRADES. THE WORK IN THIS SECTION SHALL AT NO TIME INTERRUPT THE NORMAL OPERATIONS OF EXISTING BUILDINGS.

PART 2 PRODUCTS

2.01 POLYVINYL CHLORIDE PIPE (PVC):

A. PVC PIPE SHALL BE MADE FROM VIRGIN PLASTIC AND SHALL CONFORM TO ASTM D1784. SOLID PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D3034 SDR 35.

B. STANDARD NOMINAL LENGTHS OF PIPE SHALL BE A MINIMUM OF 10 FEET.

C. THE PIPE FITTINGS SHALL BE AS UNIFORM AS COMMERCIALLY PRACTICAL IN COLOR, OPACITY, DENSITY AND OTHER PHYSICAL PROPERTIES.

D. PIPE SHALL BE TESTED IN ACCORDANCE WITH SECTION 10 OF ASTM D2412 STANDARD METHOD OF "TEST FOR EXTERNAL LOADING PROPERTIES OF PLASTIC PIPE BY PARALLEL-PLATE LOADING". THE MINIMUM VALUE OF PIPE STIFFNESS AT 5% DEFLECTION COMPUTED FROM DATA OBTAINED FROM THE ABOVE TESTING PROCEDURE SHALL BE IN ACCORDANCE WITH ASTM D2412.

E. EACH PIPE AND ALL COUPLINGS AND FITTINGS SHALL BE CLEARLY MARKED ON THE OUTSIDE SURFACE WITH THE NAME OF THE MANUFACTURER, ASTM DESIGNATION WITH TYPE AND GRADE, AND NOMINAL DIAMETER.

2.02 DUCTILE IRON (D.I.) SEWER PIPE:

A. ANSI/AWWA C151/ A21.51 CLASS 52 WITH CEMENT LINING CONFORMING TO ANSI A21.4. PRESSURE CLASS SHALL BE ANSI PRESSURE CLASS 350. PROTECTIVE COATING ON EXTERIOR SHALL BE APPROVED BITUMASTIC OR COAL TAR ENAMEL CONFORMING TO ANSI A21.4 AND A21.10

B. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON SHORT BODY FITTINGS CONFORMING TO ANSI A21.1 WITH CEMENT LINING CONFORMING TO ANSI A21.4. THICKNESS CLASS SHALL BE ANSI PRESSURE CLASS 350.

C. LENGTH AND JOINTS – DUCTILE IRON PIPE LENGTHS SHALL GENERALLY BE AS LONG AS POSSIBLE BUT SHALL HAVE A BELL-AND-SPIGOT OR SHALL HAVE FURNISHED WITH IT A SEPARATE JOINTING SLEEVE OR COUPLING WITH RUBBER RINGS COMPRESSED INTO PLACE TO MAKE A WATERTIGHT CLOSURE. JOINTS SHALL BE SEALED WITH A RUBBER RING GASKET AND SHALL BE OF A COMPOSITION AND TEXTURE WHICH WILL ENDURE PERMANENTLY UNDER THE CONDITIONS LIKELY TO BE IMPOSED BY THIS USE, AND SHALL CONFORM TO ASTM SPECIFICATIONS C-361 AMENDED TO DATE. JOINTS SHALL BE "PUSH-ON" TYPE COMPLYING WITH ANSI A21.1.

2.04 CAST IRON SOIL PIPE:

A. CAST IRON SOIL PIPE SHALL BE ASTM A 74, EXTRA HEAVY TYPE, INSIDE NOMINAL DIAMETER AS SPECIFIED ON CONSTRUCTION DRAWINGS, BELL AND SPIGOT END. JOINTS SHALL BE IN CONFORMANCE WITH AWWA C111, RUBBER GASKET JOINT DEVICES.

2.05 PIPE JOINTS AND FITTINGS:

A. DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINTS. ALL FITTINGS SHALL BE RESTRAINED OR RODDED.

B. DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI 21.10 AND 21.11 (AWWA C110 AND AWWA C111).

C. HDPE AND PVC FITTINGS SHALL BE WATERTIGHT. STRUCTURAL INTEGRITY AND JOINT CONFIGURATION SHALL BE IDENTICAL TO THAT OF PIPE.

2.06 SEWER MANHOLES:

A. PRECAST CONCRETE MANHOLE BASE SECTIONS, RISER SECTIONS AND CONE SECTIONS SHALL BE CONSTRUCTED OF A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, AIR ENTRAINED CONCRETE WITH HOOP REINFORCING AND LIFTING HOLES. SECTIONS SHALL BE FURNISHED WITH "O" RING RUBBER GASKETS. LIFTING HOLES IN ALL SECTIONS SHALL BE FILLED WITH NONSHRINK MORTAR AFTER SECTIONS ARE IN PLACE.

B. CLASS "A" CONCRETE: ASTM C94. ALL CONCRETE SHALL BE CLASS A UNLESS STATED OTHERWISE.

1. STRENGTH : 3000 PSI @ 28 DAYS
2. CEMENT CONTENT : TYPE II, 6.5 SACKS/CY (MIN)
3. W/C RATIO : 0.464 (MAX)
4. FINE AGGREGATE : ASTM C33
5. COARSE AGGREGATE : ASTM C33 SIZE #67

C. CLASS "B" CONCRETE:

1. STRENGTH : 3000 PSI @ 28 DAYS
2. CEMENT CONTENT : TYPE II, 6.0 SACKS/CY (MIN)
3. W/C RATIO : 0.488 (MAX)
4. FINE AGGREGATE : ASTM C33
5. COARSE AGGREGATE : ASTM C33 SIZE #67

D. REINFORCING STEEL: ASTM A615, A616, OR A185.

E. PRECAST CONCRETE: ASTM C478 EXCEPT AS SPECIFIED OTHERWISE.

F. TABLES AND INVERTS SHALL BE CONSTRUCTED OF BRICK, SHALL HAVE THE SAME SHAPE OF THE PIPE THAT ARE CONNECTED AND ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

G. PRECAST STRUCTURES SHALL BE ABLE TO WITHSTAND H-20 LOADING.

H. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.

I. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:

1. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
2. CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;\
3. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.
4. PIPE TO MANHOLE JOINTS SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
   a. KOR – N – SEAL
   b. LOCK JOINT
   c. PRESS WEDGE II

2.07 BRICK MASONRY:

A. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C 150-05, TYPE H.

B. HYDRATED LIME SHALL BE TYPE S CONFORMING TO THE ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES".

C. SAND SHALL BE CLEAN, HARD, DURABLE PARTICLES AND WITH NOT MORE THAN 5% IN VOLUME OF MICA, CLAY AND OTHER DELETERIOUS MATERIALS. THE SAND SHALL BE GRADED FROM FINE TO COURSE SO THAT WHEN TESTED DRY, IT WILL CONFORM TO THE LIMITS OF ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".

D. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION;

1. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   a. 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   b. 4.5 PARTS SAND, ONE PART CEMENT AND 0.5 PART HYDRATED LIME

E. WATER SHALL BE FREE FROM OILS, ACIDS, ALKALIS OR ORGANIC MATTER, AND SHALL BE CLEAN AND FRESH.

F. BRICK SHALL BE SOUND, HARD AND UNIFORMLY BURNED, REGULAR AND UNIFORM IN SHAPE AND SIZE, OF COMPACT TEXTURE AND SATISFACTORY TO THE OWNER OR OWNER'S REPRESENTATIVE. BRICKS SHALL COMPLY WITH ASTM C32, GRADE SS. ONLY WHOLE BRICK SHALL BE USED UNLESS OTHERWISE PERMITTED.

2.08 MANHOLE STEPS: PLASTIC STEPS ARE REQUIRED BY THE CITY OF DOVER.

2.09 MANHOLE FRAMES AND COVERS:

A. CASTINGS SHALL BE OF GOOD QUALITY, STRONG, TOUGH EVENLY GRAINED, SMOOTH CAST IRON, FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES, AND DEFECTS OF ANY KIND. CASTINGS SHALL BE THOROUGHLY CLEANED AND ALL FINISHED SURFACES SHALL BE MACHINED TO A TRUE PLANED SURFACE AND SHALL SEAT AT ALL POINTS WITHOUT ROCKING.

B. CASTINGS SHALL NOT BE ACCEPTABLE IF THE ACTUAL WEIGHT IS LESS THAN 95% OF THE THEORETICAL WEIGHT OF THE CASTINGS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL FURNISH INVOICES TO THE OWNER SHOWING TRUE WEIGHTS, CERTIFIED BY THE SUPPLIER.

C. CAST IRON SHALL CONFORM TO ASTM A48, CLASS 30 AND FRAMES, COVERS AND GRATES SHALL BE ABLE TO WITHSTAND HS-20 LOADING.

D. PROVIDE A 30 INCH DIAMETER CLEAR OPENING. SEWER MANHOLE COVERS SHALL HAVE THE WORD "SEWER" IN 3" LETTERS CAST INTO THE TOP SURFACE.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS:

A. OBTAIN DETAILED INFORMATION FROM THE MANUFACTURERS OF APPARATUS AS TO THE PROPER METHOD OF INSTALLING AND CONNECTING SAME.

B. CAREFULLY STORE MATERIALS AND EQUIPMENT WHICH ARE NOT IMMEDIATELY INSTALLED AFTER DELIVERY. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL.

C. ANY DEFECTIVE PIPE, FITTING OR DRAIN APPARATUS THAT IS DISCOVERED AFTER IT HAS BEEN INSTALLED OR HAS BEEN INSTALLED IMPROPERLY, SHALL BE REMOVED AND REPLACED WITH NON-DEFECTIVE PARTS TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

D. TRENCHES SHALL BE KEPT FREE OF WATER AND AS DRY AS POSSIBLE DURING THE INSTALLATION OF THE BEDDING MATERIAL, PIPE AND JOINTING FOR AS LONG A PERIOD AS REQUIRED. PIPE SHALL NOT BE LAID IN WATER OR WHEN TRENCH CONDITIONS ARE UNSUITABLE FOR THE WORK.

E. PROVIDE ALL INSPECTION AGENTS AT LEAST 24 HOURS NOTICE PRIOR TO WORK BEGINNING. INSPECTOR SHALL BE ON-SITE DURING ANY/ALL EXCAVATION, INSTALLATION, BACKFILL, AND TESTING OF ALL SEWERAGE PIPES, MANHOLES, AND APPURTENANCES.

F. NO BACKFILLING SHALL TAKE PLACE, UNLESS OTHERWISE ORDERED BY THE OWNER OR OWNER'S REPRESENTATIVE, UNTIL THE INSPECTION HAS BEEN COMPLETED.

G. EXCAVATION, BACKFILL AND PIPE BEDDING MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK.

3.02 LAYING PIPE:

A. THIS WORK SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF DRAIN LINES IN ACCORDANCE WITH THESE SPECIFICATIONS, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION.

B. ALL PIPE SHALL BE SOUND AND CLEAN BEFORE INSTALLING. WHEN LAYING OF PIPE IS NOT IN PROGRESS, INCLUDING LUNCH TIME, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR OTHER APPROVED MEANS.

C. THE FULL LENGTH OF PIPE SHALL REST SOLIDLY ON THE UNDISTURBED TRENCH BOTTOM, WITH RECESSES EXCAVATED TO ACCOMMODATE BELLS, COUPLINGS AND JOINTS. BLOCKING WILL NOT BE PERMITTED.

D. PIPE SHALL BE LAID TRUE TO THE SPECIFIED LINES AND GRADES. THE BELL END SHALL BE TOWARD THE RISING GRADE AND EACH SECTION OF PIPE SHALL HAVE A FIRM BEARING THROUGHOUT ITS LENGTH. MATERIAL PLACED AROUND AND UNDER THE PIPE SHALL BE FREE OF STONES. ROCKS SHALL NOT BE ROLLED INTO TRENCHES AND ALLOWED TO DROP ONTO PIPES. PIPE SHALL BE BEDDED IN ¾" STONE TO SPRING LINE OF PIPE AND THEN BURIED IN CLEAN SAND FREE OF STONES. STONE AND SAND SHALL BE IN ACCORDANCE WITH ENV-WQ 704.11(a) AND (b).

E. WHEN PIPE CUTTING IS REQUIRED AND APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE PIPE MATERIAL SHALL BE CUT BY USING A SAW OR MILLING PROCESS, APPROVED BY THE PIPE MANUFACTURER AND NOT BY ANY IMPACT DEVICE, SUCH AS A HAMMER AND CHISEL, TO BREAK THE PIPE. THE PIPE SHALL BE CUT, NOT BROKEN. THE CUT END OF THE PIPE SHALL BE SQUARE TO THE AXIS OF THE PIPE AND ANY ROUGH EDGES GROUND SMOOTH.

F. INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321 AND AS RECOMMENDED BY THE PIPE MANUFACTURER. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK. BACKFILL SHALL BE PLACED IN SIX INCH LIFTS AND COMPACTED TO 95% MINIMUM DENSITY AS PER AASHTO T99. CARE SHOULD BE TAKEN TO AVOID ANY USE OF FRACTURED STONE IN BACKFILL EXCEEDING TWO INCHES (2").

G. THE CONTRACTOR MAY USE A LASER BEAM TO ASSIST IN SETTING THE PIPE, PROVIDED HE CAN DEMONSTRATE SATISFACTORY SKILL IN ITS USE. THE USE OF STRING LEVELS, HAND LEVELS, CARPENTERS LEVELS OR OTHER RELATIVELY CRUDE DEVICES FOR TRANSFERRING GRADE OR SETTING PIPE WILL NOT BE PERMITTED.

H. WHEN LAYING REINFORCED CONCRETE PIPE, BEDDING SHALL CONSIST OF CAREFULLY PREPARING AND SHAPING A BED OF FINE GRANULAR MATERIAL TO FIT THE LOWER 15 PERCENT OF THE EXTERNAL HEIGHT OF THE PIPE WITH A MINIMUM OF 4 IN. UNDER THE BOTTOM OF THE PIPE. RECESS SHALL BE EXCAVATED FOR THE BELLS OF THE PIPE. AS SOON AS THE EXCAVATION IS COMPLETED AND THE SPECIFIED PIPE BEDDING PROVIDED, THE CONTRACTOR SHALL FIRMLY BED THE PIPE TO CONFORM ACCURATELY TO THE LINE AND GRADE INDICATED ON THE PLANS. NO BLOCKING WILL BE PERMITTED UNDER THE PIPE. AS SOON AS THE PIPE IS IN PLACE, FINE GRANULAR MATERIAL SHALL BE PLACED AND COMPACTED TO THE MID-DIAMETER OF THE PIPE. THE REMAINING BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK. BACKFILL SHALL BE PLACED IN SIX INCH LIFTS AND COMPACTED TO 95% MINIMUM DENSITY AS PER AASHTO T99.

3.03 SEWER MANHOLES:

A. SEWER MANHOLES, DRAIN MANHOLES, CATCH BASINS AND INSPECTION MANHOLES SHALL BE BUILT TO THE LINES, GRADES, DIMENSIONS AND DESIGN SHOWN ON THE PLANS WITH THE NECESSARY FRAMES, COVERS AND GRATES.

B. MANHOLE AND CATCH BASIN BASES SHALL BE PLACED ON 6 INCHES OF COMPACTED BEDDING MATERIAL.

C. PRECAST SECTIONS SHALL BE SET SO AS TO BE VERTICAL AND IN TRUE ALIGNMENT WITH A 1/4 INCH MAXIMUM TOLERANCE TO BE ALLOWED. THE PRECAST SECTIONS SHALL BE INSTALLED IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT.

D. WHERE HOLES MUST BE CUT IN THE PRECAST SECTIONS TO ACCOMMODATE PIPES, CUTTING SHALL BE DONE PRIOR TO SETTING THEM IN PLACE TO PREVENT ANY SUBSEQUENT JARRING WHICH MAY LOOSEN THE JOINTS.

3.04 BRICKWORK:

A. MORTAR SHALL BE MIXED ONLY IN SUCH QUANTITY AS MAY BE REQUIRED FOR IMMEDIATE USE AND USED BEFORE THE INITIAL SET HAS TAKEN PLACE. MORTAR SHALL NOT BE RETAINED FOR MORE THAN ONE HOUR AND SHALL BE CONSISTENTLY WORKED OVER WITH A SHOVEL OR HOE UNTIL USED.

B. BRICK MASONRY SHALL BE PROTECTED FROM TOO RAPID DRYING BY APPROVED MEANS AND SHALL BE PROTECTED FROM WEATHER AND FROST AS REQUIRED.

C. BRICKS SHALL BE CLEANED AND THOROUGHLY WETTED SHORTLY BEFORE THEY ARE PUT INTO THE WORK, AND EACH BRICK SHALL BE LAID IN A FULL BED OF MORTAR WITHOUT REQUIRING SUBSEQUENT GROUTING OR FILLING. JOINTS BETWEEN BRICKS SHALL NOT EXCEED 1/2 INCH AND SHALL BE POINTED.

3.05 FRAMES AND COVERS:

A. MANHOLE FRAMES – SHALL BE SET WITH THE TOPS CONFORMING ACCURATELY TO THE GRADE OF THE PAVEMENT OR FINISHED GROUND SURFACE OR AS INDICATED ON THE DRAWINGS. FRAMES SHALL BE SET CONCENTRIC WITH THE TOP OF THE MASONRY AND IN A FULL BED OF MORTAR SO THAT THE SPACE BETWEEN THE TOP OF THE MANHOLE MASONRY AND THE BOTTOM FLANGE OF THE FRAME SHALL BE COMPLETELY FILLED AND MADE WATERTIGHT. A THICK RING OF MORTAR EXTENDING TO THE OUTER EDGE OF THE MASONRY SHALL BE PLACED ALL AROUND AND ON THE TOP OF THE BOTTOM FLANGE. THE MORTAR SHALL BE SMOOTHLY FINISHED AND HAVE A SLIGHT SLOPE TO SHED WATER AWAY FROM THE FRAME.

B. MANHOLE COVERS SHALL BE LEFT IN PLACE IN THE FRAMES ON COMPLETION OF OTHER WORK AT THE MANHOLES.

C. A MAXIMUM OF 12" OF BRICK AND MORTAR SHALL BE ALLOWED FOR GRADE ADJUSTMENT.

D. COVERS AND GRATES SHALL BE SET IN THE FRAMES, SEATING BEING CLEANED BEFORE COVERS AND GRATES ARE SET.

3.06 SEWER SERVICE CONNECTIONS:

A. THE MINIMUM SIZE FOR THE BUILDING SEWER SERVICE CONNECTION SHALL BE 6".

B. THE MINIMUM SLOPE FOR THE BUILDING SEWER SERVICE SHALL BE 1/4" PER, FOOT, UNLESS OTHERWISE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.

C. BEFORE BACKFILLING, THE CONTRACTOR SHALL NOTIFY THE INSPECTOR SO THAT HE CAN MAKE THE NECESSARY MEASUREMENTS TO LOCATE THE OPENING LATER. IN ADDITION, AN APPROVED FERROUS ROD OR PIPE SHALL BE PLACED OVER THE PLUGGED OPENING AT THE PROPERTY LINE, EXTENDING TO WITHIN 2 INCHES OF THE FINAL GROUND SURFACE.

1. PROXIMITY TO WATER LINES:
   a. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
      1) NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.
      2) SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
      3) A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (1) OR (2) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.08.
   b. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
   c. VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
   d. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.
   e. HOWEVER, SHOULD CONSTRUCTION OPERATIONS REVEAL OR EXPOSE A WATERLINE MAIN OR SERVICE RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FEET HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED:
      1) IF THE ABOVE SEPARATION CANNOT BE ACHIEVED, THE SEWER SHALL BE DUCTILE IRON PIPE OF THE SAME SIZE SHALL BE UTILIZED. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE.
      2) WHENEVER THE WATERLINE CROSSES OVER THE NEW SEWER WITH LESS THAN 18 INCHES OF SEPARATION, THE SEWER PIPE FOR A DISTANCE OF 6 FEET ON EACH SIDE OF THE WATERLINE SHALL BE CLASS 52 DUCTILE IRON PIPE. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE. AS AN ALTERNATIVE, THE WATERLINE MAY BE RAISED, IF FEASIBLE, TO ACHIEVE THE REQUIRED SEPARATION.
      3) SHOULD THE WATERLINE IN EITHER SITUATION BE AT OR BELOW THE SEWER ELEVATION, THE WATERLINE OR THE SEWER MUST BE RELOCATED TO ACHIEVE 10 FT. SEPARATION OR THE WATERLINE RAISED.

3.07 GRAVITY SEWER PIPE TESTING:

A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

B. LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

1. ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR"; OR
2. UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE" (1998).

C. ALL NEW GRAVITY SEWERS SHALL BE:

1. CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND
2. TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.

D. ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.

E. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.

F. INSPECTION AND TESTING: – UPON COMPLETION OF THE INSTALLATION AND BACKFILLING PORTIONS OF THE SANITARY SEWER, THE PIPE SHALL BE INSPECTED BY THE VISUAL AND AIR TEST METHODS SUBSEQUENTLY DESCRIBED, OR AS REQUIRED BY THE TOWN DPW AND THE NHDES. THIS INSPECTION AND TESTING SHALL BE UNDERTAKEN AS THE WORK PROGRESSES. THE ENGINEER SHALL BE NOTIFIED IN ADVANCE OF SUCH INSPECTION AND TESTING AND THE CONTRACTOR SHALL PROVIDE ALL FACILITIES, MATERIALS, EQUIPMENT AND LABOR REQUIRED FOR SUCH TESTING. SUCH INSPECTION AND TESTING SHALL BE A PREREQUISITE FOR ACCEPTANCE OF ALL WORK.

1. VISUAL INSPECTION: – AN INSPECTION OF THE INTERIOR OF THE COMPLETED SANITARY SEWER PIPE BY DIRECT VISUAL INSPECTION SHALL BE MADE FOR ALL PIPE INSTALLED FROM MANHOLE TO MANHOLE AND FOR SERVICE LATERALS. ANY LIGHTS, EQUIPMENT OR LABOR NECESSARY FOR SUCH INSPECTION SHALL BE PROVIDED BY THE CONTRACTOR. CAMERA WORK TO BE PERFORMED BY NASSCO CERTIFIED CONTRACTOR.

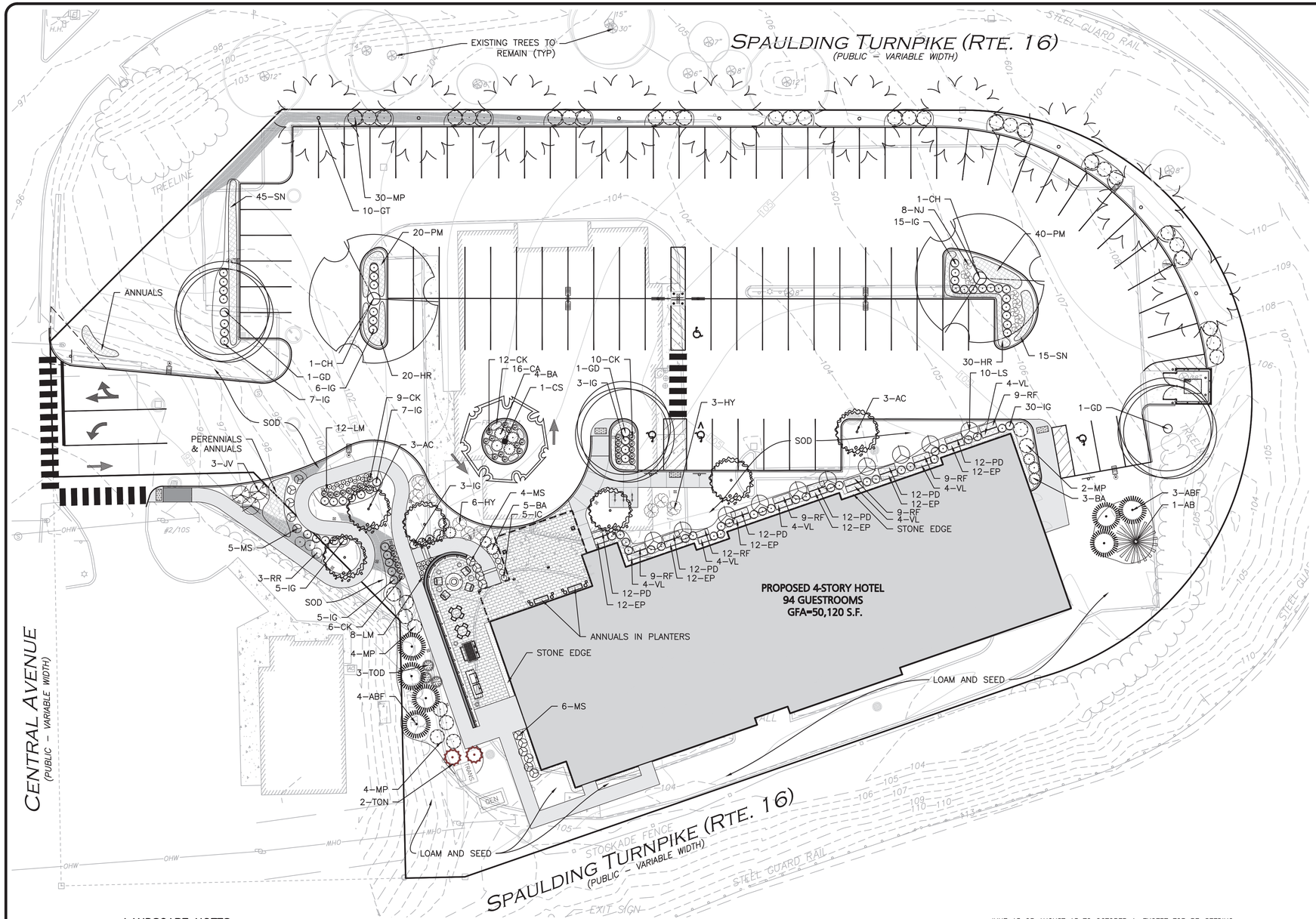
   ANY FOREIGN MATERIAL FOUND IN THE INTERIOR OF THE SEWER, ANY DIRT, DEBRIS OR OTHER OBJECTS SHALL BE REMOVED BY THE CONTRACTOR. VISIBLE DEFECTS SUCH AS BROKEN PIPE SECTIONS, IMPROPERLY INSTALLED GASKETS, PROJECTING CONNECTIONS, CRACKS, VISIBLE LEAKS OR OTHER DEFECTS SHALL BE NOTED, CORRECTED AND THE PIPE RE-INSPECTED.

2. AIR TESTING OF MAIN LINE GRAVITY SEWERS:

   METHOD: ASTM F1417-92(2005)

   PROCEDURE:

   a. PLUG PIPE OUTLETS WITH SUITABLE TEST PLUGS. BRACE EACH PLUG SECURELY.
   b. PIPE AIR SUPPLY TO PIPELINE TO BE TESTED IN SUCH MANNER THAT AIR SUPPLY MAY BE SHUT OFF, PRESSURE OBSERVED, AND AIR PRESSURE RELEASED FROM PIPE WITHOUT WORKMEN ENTERING MANHOLE.
   c. ADD AIR SLOWLY TO PORTION OF PIPE UNDER TEST UNTIL INTERNAL PRESSURE OF LINE IS RAISED TO APPROXIMATELY 4 PSIG, BUT LESS THAN 5 PSIG.
   d. SHUT AIR SUPPLY OFF AND ALLOW AT LEAST 2 MINUTES FOR AIR PRESSURE TO STABILIZE.
   e. WHEN PRESSURE HAS STABILIZED AND IS AT



LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING TREE
- SHRUBS
- MULCH BED
- PERENNIALS/GROUNDCOVER
- STONE EDGE

GENERAL NOTES:

1. SNOW SHALL BE TAKEN OFF–SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE OR BLOCKS THE USE OF ON–SITE PARKING. ANY EXCESS WILL BE BE TRUCKED OFF–SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
2. CONTRACTOR TO PROVIDE ALL–WEATHER ACCESS FOR CITY OF DOVER FIRST RESPONDERS DURING CONSTRUCTION.

PLAN NOTES:

1. THE PURPOSED OF THIS PLAN IS TO DEPICT THE PROPOSED LANDSCAPE PLANTINGS AND PROVIDE INFORMATION REGARDING THE INSTALLATION.
2. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF DOVER, NH.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG–SAFE" (1–888–344–7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF NAY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
5. ANY TREES NOTED AS "SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
6. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
7. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
8. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
9. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT (LATEST EDITION).
10. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE. ANY PLANT MATERIALS WHICH DIE WITHIN THE ONE YEAR PLANT GUARANTEE PERIOD WILL BE REPLACED BY THE LANDSCAPE CONTRACTOR. OWNERS TO COORDINATE DIRECTLY WITH THE LANDSCAPE CONTRACTOR FOR REPLACEMENT PLANTINGS.
11. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED.
12. LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
13. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
14. TREES SHALL HAVE A MINIMUM CALIPER (DBH) AS INDICATED ON THE PLANTING SCHEDULE TAKEN FOUR FEET ABOVE THE ROOT CROWN.
15. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUNDCOVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH.
16. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
17. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
18. CONTRACTOR RESPONSIBLE FOR WATERING AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
19. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE SLOPED TO SIX INCHES (6") ABOVE THE TOP OF CURB.
20. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
21. SLOPES AT 2:1 SHOULD HAVE 6" LOAM & SEED. SEEDING OF 2:1 SLOPES SHALL OCCUR IN THE DRY & AFTER SLOPES ARE COMPACTED.
22. ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 2 FEET MINIMUM DEPTH OF TOPSOIL. TWO FEET OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL DEMOLITION, AND LANDSCAPE CONTRACTORS TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 2 FEET MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET. SEE TOPSOIL DETAIL.
23. PRIOR TO LAYING TOPSOIL, ALL SUBSOIL (BELOW PROPOSED TOPSOIL) TO BE TILLED TO A DEPTH OF AT LEAST 18" TO REMOVE CONSTRUCTION COMPACTION AND ALLOW FOR PROPER DRAINAGE OF TOPSOILS.
24. ALL SEEDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RE–SEEDING OF BARE SPOTS. AT ALL SLOPED AREAS CONTRACTOR TO INSTALL COCONUT FIBER JUTE MESH NETTING ON ALL SLOPES 3:1 AND GREATER, HYDROSEED ALL EXPOSED AREAS. ADD SOIL STABILIZER "FLEXTERRA HP–FGM" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE). CONTRACTOR TO ALSO BE RESPONSIBLE FOR RE–GRADING AND RE–SEEDING ALL DISTURBED, ERODED, OR BARE SPOTS & UNTIL SLOPES ARE FULLY STABLE. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING.
25. AFTER SEEDING, ALL AREAS TO BE LIGHTLY MULCHED WITH WEED FREE STRAW & CONTINUALLY WATERED EVERY DAY SO THAT SEED IS KEPT MOIST UNTIL SEED IS ESTABLISHED & APPROVED BY A&M LANDSCAPE ARCHITECT (USE NO HAY).
26. IF THERE IS NO PROPOSED IRRIGATION SYSTEM AFTER PLANTINGS & LAWNS & SEEDED AREAS HAVE BEEN INSTALLED, LANDSCAPE CONTRACTOR RESPONSIBLE TO TEMPORARILY WATER ALL INSTALLED PLANTINGS, SEEDED AREAS, & LAWN AREAS MIN. 2 TIMES A WEEK DURING INITIAL ESTABLISHMENT PERIOD OF 6 MONTHS AFTER ALL LANDSCAPING IS INSTALLED.
27. AFTER PROVISIONAL ACCEPTANCE THE CONTRACTOR WILL WATER THE PLANTINGS AT A MINIMUM ONCE PER WEEK DURING THE MONTHS OF JUNE 30TH, TO SEPTEMBER 1ST, PLANTINGS WILL BE WATERED ON A BIWEEKLY SCHEDULE FOR THE TIME PERIOD MARCH 1ST TO JUNE 30TH AND SEPTEMBER 1ST TO THE FIRST FROST, REGARDLESS OF PLANTING DATE. IN LIEU OF WATERING ON A WEEKLY/BI–WEEKLY SCHEDULE THE CONTRACTOR CAN USE A GATOR BAG. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REFILL THE GATOR BAG AS NECESSARY. THE GATOR BAG WILL BE REMOVED BY THE CONTRACTOR AT THE TIME OF THE FIRST FORECASTED FROST.

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1–888–DIG–SAFE
1–888–344–7233

LICENSED LANDSCAPE ARCHITECT
JACQUELINE B. TRAINER
00169
STATE OF NEW HAMPSHIRE

01/30/2026

PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:

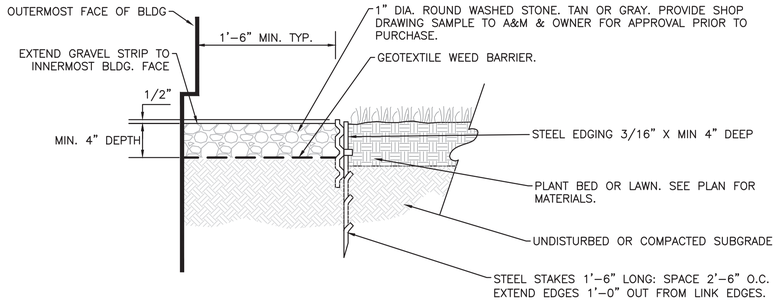
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DRAWING TITLE: LANDSCAPE PLAN

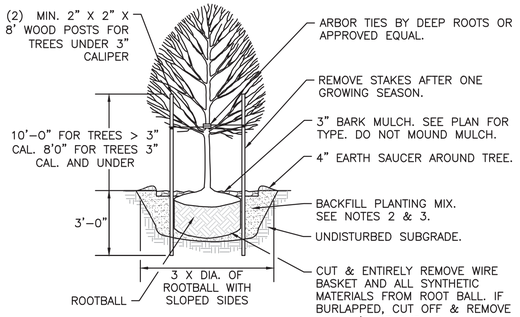
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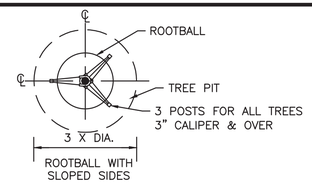


NOTES:
1. STONE STRIP IS TO BE INSTALLED CONTINUOUS ADJACENT TO THE ENTIRE FACE OF BUILDINGS EXCEPT WHERE OTHER HARD SURFACING MATERIALS ARE SPECIFIED OR IF SHOWN OTHERWISE ON PLAN.
2. STONE STRIP TO BE INSTALLED UNDER ALL BUILDING OVERHANGS.
3. COORDINATE INSTALLATION OF STONE STRIP WITH INSTALLATION OF FOUNDATION DRAIN & TO BE LOCATED BEYOND ROOF OVERHANG.

STONE DRIP STRIP 7
NOT TO SCALE



SECTION VIEW



PLAN VIEW

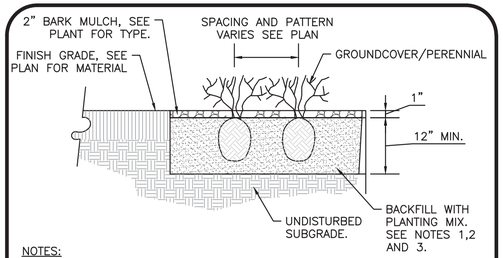
NOTES:
1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

DECIDUOUS TREE 6
NOT TO SCALE



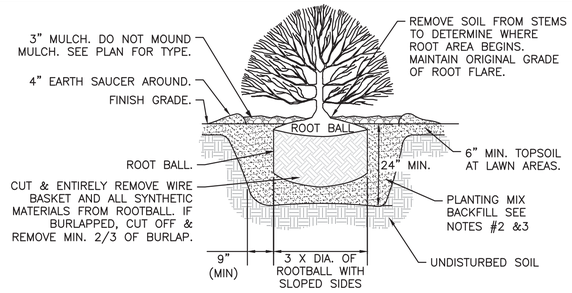
NOTES:
1. ANNUALS TO BE "NEPTUNE" MIX BY PROVEN WINNERS
2. PROVIDE SHOP DRAWING FOR APPROVAL PRIOR TO PURCHASE.

ANNUALS 5
NOT TO SCALE



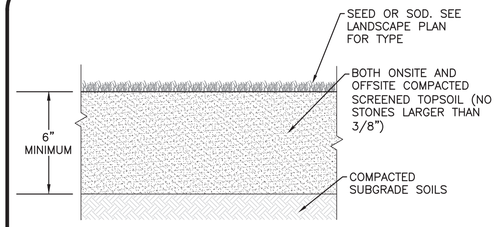
NOTES:
1. ALL GROUNDCOVER/PERENNIALS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM STEM OF GROUND COVER/ PERENNIAL TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

GROUNDCOVER/PERENNIAL PLANTING 4
NOT TO SCALE



NOTES:
1. ALL SHRUBS ROOT FLARE SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED. WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.

SHRUB 3
NOT TO SCALE

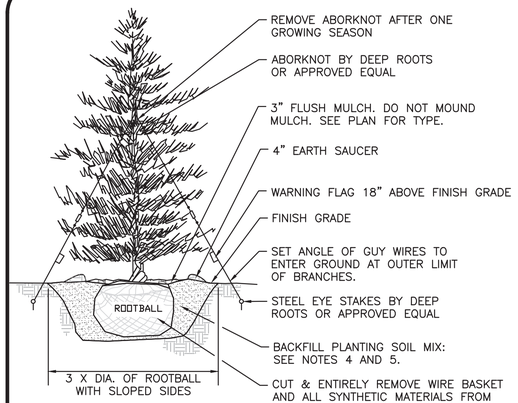


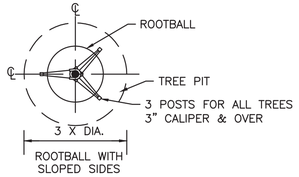
TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% – 65%
SILT	15% – 35%
CLAY	5% – 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85–100
NO. 40	60–85
NO. 100	38–60
NO. 200	28–40

NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL–DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLODS, STICKS, TRASH, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL 2
NOT TO SCALE





PLAN VIEW

NOTES
1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. ATTACH GUY WIRES AT 2/3 HEIGHT OF TREE.
3. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
4. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

EVERGREEN TREE 1
NOT TO SCALE

R: \PROJECTS \1173–31 \CIVIL \DRAWINGS \CURRENT \L–1173–31_LANDSCAPE.DWG

LICENSED LANDSCAPE ARCHITECT
JACQUELINE B. TRAINER
00169
STATE OF NEW HAMPSHIRE
01/30/2026
PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:
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DRAWING TITLE:
LANDSCAPE DETAILS

SHEET No.
L-501

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EROSION CONTROL/RESTORATION DRY SEED MIX:

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES
(BY NEW ENGLAND WETLAND PLANTS INC. – NEWP.COM)
APPLICATION RATE: 35LBS/ACRE | 1250 SQ FT/LB

ITEM	BOTANICAL NAME	COMMON NAME	INDICATOR
1.	ELYMUS RIPARIUS	RIVERBANK WILD RYE	FACW
2.	ELYMUS CANADENSIS	CANADA WILD RYE	FACU+
3.	FESTUCA RUBRA	RED FESCUE	FACU
4.	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	
5.	LOLIUM PERENNE	PERRENIAL RYEGRASS	
6.	PANICUM VIRGATUM	SWITCH GRASS	FAC
7.	SORGHASTRUM NUTANS	INDIAN GRASS	UPL
8.	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
9.	AGROSTIS PERENNANS	UPLAND BENTGRASS	FACU

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES PROVIDES AN APPROPRIATE SELECTION OF NATIVE AND NATURALIZED GRASSES TO ENSURE THAT DRY AND RECENTLY DISTURBED SITES WILL BE QUICKLY REVEGETATED AND THE SOIL SURFACE STABILIZED. IT IS AN APPROPRIATE SEED MIX FOR ROAD CUTS, PIPELINES, STEEPER SLOPES, AND AREAS REQUIRING QUICK COVER DURING THE ECOLOGICAL RESTORATION PROCESS. THE MIX MAY BE APPLIED BY HYDRO–SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL–SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE SPRING THROUGH MID–SUMMER SEEDING WILL BENEFIT FROM A LIGHT MULCHING OF WEED–FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING WILL BE REQUIRED. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE. PREPARATION OF A CLEAN WEED FREE SEED BED IS NECESSARY FOR OPTIMAL RESULTS.

SEED MIX
NOT TO SCALE

4

LANDSCAPE MANAGEMENT NOTES:

LANDSCAPE MANAGEMENT PLAN
IT SHOULD BE RECOGNIZED THAT THIS IS A GENERAL GUIDELINE TOWARDS ACHIEVING HIGH QUALITY AND WELL GROOMED LANDSCAPED AREAS. THE GROUNDS STAFF / LANDSCAPE CONTRACTOR MUST RECOGNIZE THE SHORTCOMINGS OF A GENERAL MAINTENANCE PROGRAM SUCH AS THIS, AND MODIFY AND/OR AUGMENT IT BASED ON WEEKLY, MONTHLY, AND YEARLY OBSERVATIONS. IN ORDER TO ASSURE THE HIGHEST QUALITY CONDITIONS, THE STAFF MUST ALSO RECOGNIZE AND APPRECIATE THE NEED TO BE AWARE OF THE CONSTANTLY CHANGING CONDITIONS OF THE LANDSCAPING AND BE ABLE TO RESPOND TO THEM ON A PROACTIVE BASIS.
FERTILIZER

- MAINTENANCE PRACTICES SHOULD BE AIMED AT REDUCING ENVIRONMENTAL, MECHANICAL AND PEST STRESSES TO PROMOTE HEALTHY AND VIGOROUS GROWTH. WHEN NECESSARY, PEST OUTBREAKS SHOULD BE TREATED WITH THE MOST SENSITIVE CONTROL MEASURE AVAILABLE. SYNTHETIC CHEMICAL CONTROLS SHOULD BE USED ONLY AS A LAST RESORT TO ORGANIC AND BIOLOGICAL CONTROL METHODS. FERTILIZER, SYNTHETIC CHEMICAL CONTROLS AND PEST MANAGEMENT APPLICATIONS (WHEN NECESSARY) SHOULD BE PERFORMED ONLY BY LICENSED APPLICATORS IN ACCORDANCE WITH THE MANUFACTURER'S LABEL INSTRUCTIONS WHEN ENVIRONMENTAL CONDITIONS ARE CONDUCIVE TO CONTROLLED PRODUCT APPLICATION.
- ONLY SLOW–RELEASE ORGANIC FERTILIZERS SHOULD BE USED IN THE LANDSCAPED AREAS TO LIMIT THE AMOUNT OF NUTRIENTS THAT COULD ENTER DOWNSTREAM RESOURCE AREAS. FERTILIZATION OF DEVELOPED AREAS ON SITE WILL BE PERFORMED WITHIN MANUFACTURERS LABELING INSTRUCTIONS AND SHALL NOT EXCEED AN NPK RATIO OF 1:1:1 (I.E. TRIPLE 10 FERTILIZER MIX), CONSIDERED A LOW NITROGEN MIXTURE. ADDITIONALLY, THE FERTILIZER WILL INCLUDE A SLOW RELEASE ELEMENT.

LANDSCAPE MAINTENANCE PROGRAM PRACTICES:
SHRUBS

- MULCH NOT MORE THAN 3" DEPTH WITH SHREDDED PINE OR FIR BARK.
- HAND PRUNE ANNUALLY, IMMEDIATELY AFTER BLOOMING, TO REMOVE 1/3 OF THE ABOVE–GROUND BIOMASS (OLDER STEMS). STEM REMOVALS TO OCCUR WITHIN 6" OF THE GROUND TO OPEN UP SHRUB AND MAINTAIN TWO–YEAR WOOD (THE BLOOMING WOOD).
- FERTILIZE WITH 1/2 LB. SLOW–RELEASE FERTILIZER (SEE ABOVE SECTION ON FERTILIZER) EVERY SECOND YEAR.
- HAND PRUNE EVERGREEN SHRUBS ONLY AS NEEDED TO REMOVE DEAD AND DAMAGED WOOD AND TO MAINTAIN THE NATURALISTIC FORM OF THE SHRUB. NEVER MECHANICALLY SHEAR EVERGREEN SHRUBS.

TREES

- PROVIDE AFTERCARE FOR NEW TREE PLANTINGS FOR THE FIRST THREE YEARS.
- DO NOT FERTILIZE TREES, IT ARTIFICIALLY STIMULATES THEM (UNLESS TREE HEALTH WARRANTS).
- WATER ONCE A WEEK FOR THE FIRST YEAR; TWICE A MONTH THE SECOND, ONCE A MONTH THE THIRD YEAR.
- PRUNE TREES ON A FOUR–YEAR CYCLE.

ORNAMENTAL GRASSES/PERENNIALS

- APPLY LOW– NITROGEN 10–10–10 FERTILIZER AS GROWTH RESUMES IN THE SPRING.
- WATER THOROUGHLY.
- GRASSES/PERENNIALS DO NOT NEED TO BE CUT DOWN BEFORE WINTER. IN FACT, THEY ARE ATTRACTIVE WHEN LEFT STANDING AND THE FOLIAGE HELPS TO INSULATE THE CROWN OF THE PLANT.
- CUT BACK THE FOLIAGE TO ABOUT 4–6 INCHES IN THE SPRING BEFORE GROWTH RESUMES. WHEN FOLIAGE IS REMOVED, SPRING GROWTH WILL BEGIN EARLIER. OLD FOLIAGE LEFT ON THE PLANT CAN DELAY THE CROWN'S WARMING AND SUBSEQUENT GROWTH BY AS MUCH AS 3 WEEKS.

WATERING

- WATERING TREES, SHRUBS AND PERENNIALS SHOULD BE DONE WEEKLY UPON ESTABLISHMENT FOR 6 MONTHS.

LANDSCAPE MAINTENANCE NOTES
NOT TO SCALE

3

PLANTING SCHEDULE -TREES, SHRUBS, PERENNIALS, & GRASSES

	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
DECIDUOUS SHADE AND FLOWERING TREES							
* ~ ^	CS	1	CATALPA SPECIOSA	NORTHERN CATALPA	3" CAL.	AS SHOWN	B&B, SPECIMEN
* ~ ^	CH	2	CELTIS OCCIDENTALIS	COMMON HACKBERRY	3" CAL.	AS SHOWN	B&B
* ~ ^	GT	10	GLEDITSIA TRIACANTHOS F. INERMIS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST	3" CAL.	AS SHOWN	B&B
* ~ ^	GD	3	GYMNOCLADUS DIOICUS 'ESPRESSO–JFS'	ESPRESSO KENTUCKY COFFEETREE	3" CAL.	AS SHOWN	B&B
* ~ ^	LS	10	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	'SLENDER SILHOUETTE' SWEETGUM	3" CAL.	AS SHOWN	B&B
ORNAMENTAL TREES							
*~^	AC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	6–7' HT.	AS SHOWN	B&B
EVERGREEN TREES							
*	AB	1	ABIES BALSAMEA	BALSAM FIR	#10	15' O.C.	POT
*	ABF	7	ABIES FRASERI	FRASER FIR	7–8' HT.	10' O.C.	B&B
* ^	TON	2	THUJA OCCIDENTALIS 'NIGRA'	AMERICAN ARBORVITAE	7–8' HT.	5' O.C.	B&B
* ^	TOD	3	THUJA OCCIDENTALIS 'DEGROOT'S SPIRE'	DEGROOT'S SPIRE ARBORVITAE	7–8' HT.	4' O.C.	B&B
SHRUBS							
* ~ ^	NJ	8	CEANOTHUS AMERICANUS	NEW JERSEY TEA	#3, 24" HT. MIN	36" O.C.	POT
* ~ ^	RR	3	CLETHRA ALNIFOLIA 'RUBY RED'	RUBY SPICE SUMMERSWEET	#5, 24" HT. MIN.	48" O.C.	POT
^	HY	9	HYDRANGEA PANICULATA 'LITTLE LIME'	LITTLE LIME PANICLE HYDRANGEA	#5, 24" HT. MIN.	5' O.C.	POT
~	IC	5	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL HOLLY	#5, 24" HT. MIN.	24" O.C.	POT
* ~ ^	IG	81	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	#7, 24" HT. MIN.	36" O.C.	POT
* ~ ^	JV	3	JUNIPERUS VIRGINIANA 'BAR HARBOR'	BAR HARBOR JUNIPER	#3, 24" HT. MIN.	6' O.C.	POT
* ~ ^	MP	40	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	#5, 24" HT. MIN.	5' O.C.	POT
PERENNIALS/GRASSES							
* ~ ^	BA	12	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO	#1	48" O.C.	STAGGERED
~ ^	CK	37	CALAMAGROSTIS 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#2	24" O.C	STAGGERED
* ~ ^	CA	16	CAREX AMPHIBOLA	CREEK SEDGE	#1	18" O.C.	STAGGERED
~ ^	PM	60	HEMEROCALLIS 'PARDON ME'	PARDON ME DAYLILY	#1	18" O.C.	STAGGERED
~ ^	HR	50	HEMEROCALLIS 'ROSY RETURNS'	ROSY RETURNS DAYLILY	#1	18" O.C.	STAGGERED
~ ^	LM	20	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LIRIOPE	2 GAL.	18" O.C.	STAGGERED
* ^	EP	72	ECHINACEA PURPUREA 'CHEYENNE SPIRIT'	CHEYENNE SPIRIT CONEFLOWER	#1	12" O.C.	STAGGERED
~ ^	MS	15	MISCANTHUS SINENSIS 'MORNING LIGHT'	SILVER VARIEGATED MAIDEN GRASS	#2	36" O.C.	STAGGERED
* ^	PD	72	PHLOX DIVARICATA 'BLUE MOON'	BLUE MOON PHLOX	#1	12" O.C.	STAGGERED
* ~ ^	RF	57	RUDBECKIA FULGIDA VAR. SPECIOSA 'VIETTE'S LITTLE SUZY'	VIETTE'S LITTLE SUZY BLACK EYED SUSAN	#1	12" O.C.	STAGGERED
* ~ ^	SN	60	SYMPHYOTRICHUM NOVAE–ANGLIAE	NEW ENGLAND ASTER	#1	24" O.C.	STAGGERED
* ~ ^	VL	24	VERNONIA LETTERMANNII	IRON BUTTERFLY	#1	24" O.C.	STAGGERED
ANNUALS							
		TBD SF	ASSUMING A SPRING PLANTING, UTILIZE "PROVEN WINNERS" ANNUALS – "NEPTUNE MIX" #1 POTS, SUPERBENA® STORMBURST VERBENA, SUPERBELLS® YELLOW CHIFFON™ CALIBRACHOA, LAGUNA® SKY BLUE™ LOBELIA				
*	DENOTES NATIVE SPECIES OR NATIVE CULTIVAR						

PLANT SCHEDULE
NOT TO SCALE

2

DOVER ZONING SUMMARY - LANDSCAPE

REGULATION	ITEM	REQUIRED / ALLOWED	PROPOSED
§153–14.G(1)(C)	SHRUBS AND HEDGES SHALL BE A MINIMUM OF 24 INCHES IN HEIGHT WHEN MEASURED IMMEDIATELY AFTER PLANTING. GROUND COVERS AND PERENNIALS MAY BE LESS.	SHRUBS MINIMUM 24" HT.	SEE PLANT SCHEDULE
§153–14.G(1)(H)	A MAINTENANCE PLAN SHALL BE PROVIDED WITH THE SITE PLAN APPLICATION. ALL LANDSCAPED AREAS SHALL RECEIVE REGULAR MAINTENANCE AND UPKEEP. SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH). BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS, SUCH AS THE USE OF LOW–PHOSPHORUS FERTILIZER AND SLOW–RELEASE NITROGEN, SHALL BE INCLUDED IN THE MANAGEMENT PLAN. IF OWNERSHIP OF A SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.	OPERATION AND MAINTENANCE PLAN	SEE SHEET L–502
§153–14.G(2)(A)	MINIMUM INTERIOR PARKING LOT LANDSCAPING REQUIREMENTS.	FOR 51–200 PARKING SPACES, THERE SHALL BE 8% MINIMUM OF INTERIOR LANDSCAPING	35,993 SF PARKING LOT / 3,099 LANDSCAPE = 8.6% LANDSCAPE AREA PROVIDED
§153–14.G(2)(C)	ISLANDS AT THE END OF A ROW OF PARKING SPACES ARE ENCOURAGED TO PROTECT PARKED VEHICLES, INCREASE SAFETY IN PARKING LOTS, AND PROVIDE SPACE FOR LANDSCAPING. THE MINIMUM SIZE FOR LANDSCAPED ISLANDS SHALL BE 250 SQUARE FEET IN TOTAL AREA AND SHOULD INCLUDE TREES WITH SHRUBS, PERENNIALS, AND GROUND COVERS PLANTED EN MASSE AMONG THE TREES.	PARKING ISLANDS MIN. 250 SF LANDSCAPED	875± SF LANDSCAPE ISLANDS
§153–14.G(3)(A)	ALONG THE PERIMETER OF PARKING LOTS WITH 10 OR MORE SPACES, DECIDUOUS AND/OR EVERGREEN SHADE TREES SHALL BE PLANTED AT 35 FEET ON CENTER WITHIN THE BUFFER AREA REQUIRED BY § 153–17C. TREES SHALL BE SPECIES TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM CALIPER OF 3 INCHES (MEASURED AT FOUR FEET ABOVE GRADE LEVEL). WITHIN THE PERIMETER BUFFER, SHRUBS SHALL BE PLANTED BETWEEN THE TREES AT FIVE FEET ON CENTER. THE SHRUBS SHALL BE A MIX OF DECIDUOUS AND EVERGREEN SPECIES, TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM HEIGHT OF TWO FEET AT THE TIME OF PLANTING. ALL TREES, SHRUBS AND LANDSCAPING MATERIALS SHALL BE MAINTAINED IN GOOD CONDITION SO AS TO PRESENT A HEALTHY, NEAT, AND ORDERLY APPEARANCE.	SHADE TREES ALONG PERIMETER OF PARKING LOT 35' O.C. AND 3" MIN. DBH, SHRUBS MIN. 5' O.C AND MIN. HT OF 24"	SEE PLAN AND PLANT SCHEDULE
§153–14.G(3)(B)	TREES SHALL BE SALT–AND DROUGHT –TOLERANT, NATIVE OR NONINVASIVE SPECIES, AND HAVE A STRUCTURE AND GROWTH FORM WHICH PREVENTS THEM FROM OBSTRUCTING SIDEWALKS AND WALKWAYS.	TREES SHALL BE SALT–AND DROUGHT –TOLERANT, NATIVE OR NONINVASIVE SPECIES,	SEE PLANT SCHEDULE

ZONING SUMMARY
NOT TO SCALE

1

LICENSED LANDSCAPE ARCHITECT
JACQUELINE B. TRAINER
00169
STATE OF NEW HAMPSHIRE
01/30/2026

PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:
LANDSCAPE NOTES

SHEET No.
L-502

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R: \PROJECTS\1173–31\CIVIL\DRAWINGS\CURRENT\L–1173–31_LANDSCAPE.DWG

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MATERIAL LEGEND

TAG	HATCH	MATERIAL	TYPE & COLOR
EF-1		EIFS	FINE FINISH COLOR: TO MATCH BEN MOORE "MANOR BLUE 1627"
EF-2		EIFS	FINE FINISH COLOR: TO MATCH BM "NOVEMBER RAIN 2142-60"
SP-1		FIBER CEMENT SIDING PANEL	NICHIHA : ILLUMINATION SERIES "BAY BLUE"
SP-2		FIBER CEMENT SIDING PANEL	NICHIHA : ROUGH SAWN SERIES "SMOKE"
M-01		PAINTED METAL (FACTORY FINISH)	GALVANIZED PAINT. SHERWIN WILLIAMS EXTRA WHITE SW 7005

TAG	HATCH	MATERIAL	TYPE & COLOR
TR-1		PRE-PRIMED 1x12 FIBER CEMENT TRIM	PAINT: SHERWIN WILLIAMS EXTRA WHITE SW 7005
TR-2		PRE-PRIMED 1x8 & 1x12 FIBER CEMENT TRIM	PAINT: SHERWIN WILLIAMS EXTRA WHITE SW 7005
TR-3		PRE-PRIMED 1x10 & 1x12 FIBER CEMENT TRIM	PAINT: SHERWIN WILLIAMS EXTRA WHITE SW 7005
A-1		ALUMINUM COPING	COLOR TO MATCH ADJACENT SURFACE



1 NORTH ELEVATION
1/8" = 1'-0"



2 SOUTH ELEVATION
1/8" = 1'-0"

OPECHEE
CONSTRUCTION CORPORATION
11 CORPORATE DRIVE ★ BELMONT ★ NH 03220
PHONE (603) 527-9090 ★ WWW.OPECHEE.COM

LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
01-30-25
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:

Project Architect: DLS
Drawn by: RTC
Revised by:

EXTERIOR ELEVATIONS

sheet number:
A3.01

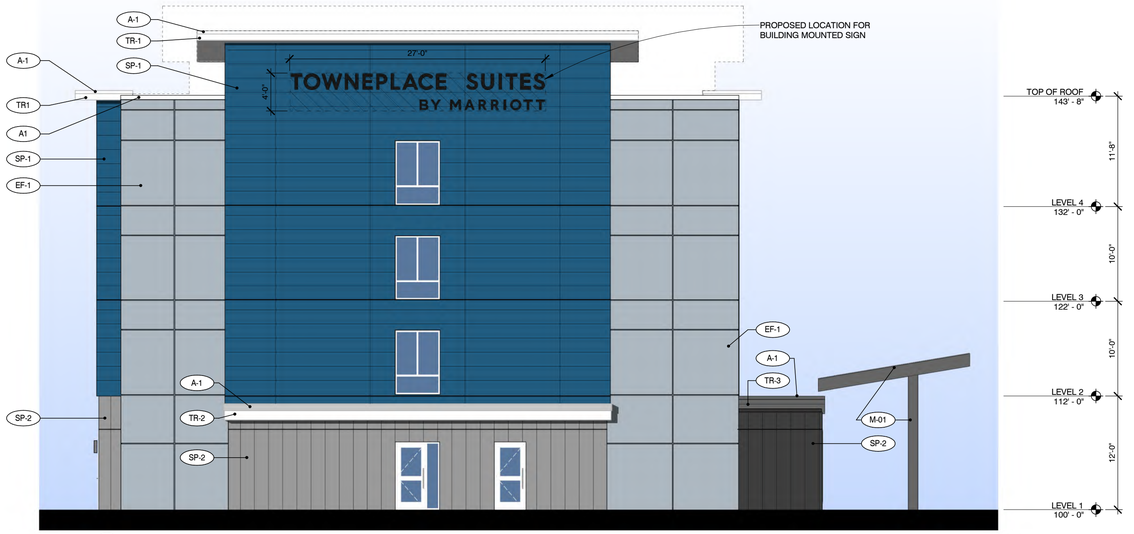
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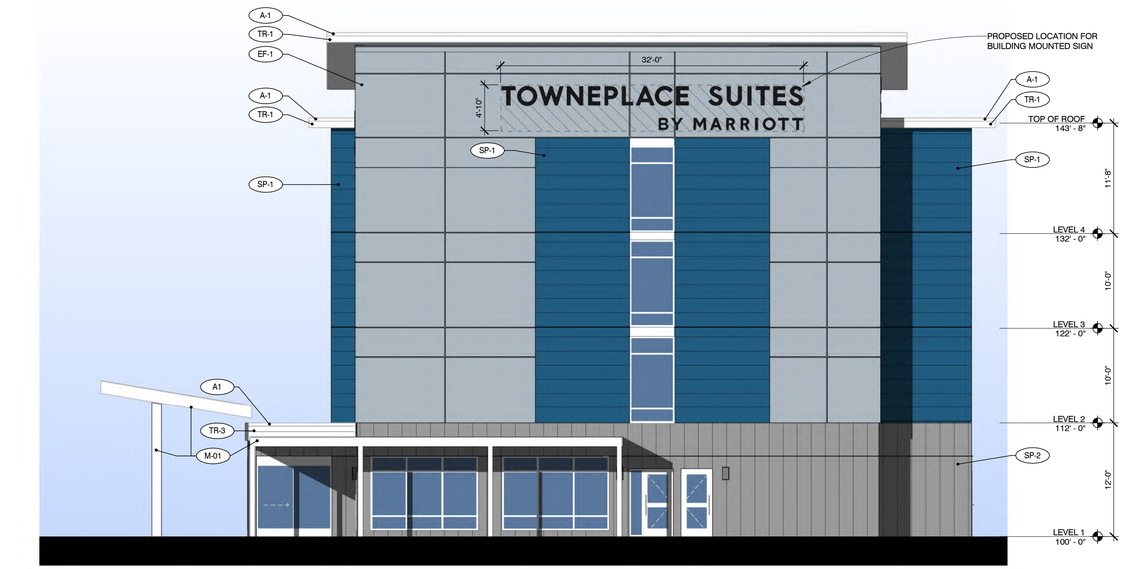
MATERIAL LEGEND

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1 EAST ELEVATION
1/8" = 1'-0"



2 WEST ELEVATION
1/8" = 1'-0"

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LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
01-30-25
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:

Project Architect: DLS
Drawn by: RTC
Revised by:

EXTERIOR ELEVATIONS

sheet number:

A3.02

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1 CENTRAL AVENUE PERSPECTIVE
1 1/2" = 1'-0"

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No. 04114
01-30-26
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[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:

Project Architect: DLS
Drawn by: RTC
Revised by:

EXTERIOR RENDERING

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A3.03

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MATERIAL LEGEND

TAG	HATCH	MATERIAL	TYPE & COLOR
EF-1		EIFS	FINE FINISH COLOR: TO MATCH BEN MOORE "MANOR BLUE 1627"
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1/8" = 1'-0"



2 SOUTH ELEVATION
1/8" = 1'-0"

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LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:
01-30-26 SITE PLAN APPLICATION
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

EXTERIOR ELEVATIONS

sheet number:
A3.01

2/25/2026 4:28:42 PM

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MATERIAL LEGEND

TAG	HATCH	MATERIAL	TYPE & COLOR
EF-1		EIFS	FINE FINISH COLOR: TO MATCH BEN MOORE "MANOR BLUE 1627"
EF-2		EIFS	FINE FINISH COLOR: TO MATCH BM "NOVEMBER RAIN 2142-60"
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1/8" = 1'-0"



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1/8" = 1'-0"

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LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
[s t a m p]

PROPOSED TOWNEPLACE
SUITES BY MARRIOTT
47 Central Ave Dover, NH

REVISION:

ISSUED:
01-30-26 SITE PLAN APPLICATION
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

EXTERIOR ELEVATIONS

sheet number:
A3.02

2/25/2026 4:27:52 PM

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1 FIRST FLOOR PLAN
1/8" = 1'-0"

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LICENSED ARCHITECT
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No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
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PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

FIRST FLOOR PLAN

sheet number:
A1.01

2/25/2026 5:26:42 PM

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1 UPPER FLOOR PLAN
1/8" = 1'-0"

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LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

UPPER FLOOR PLAN

sheet number:
A1.02

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1 STREETSCAPE (VIEW FROM CENTRAL AVENUE)
1 1/2" = 1'-0"

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PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

ISSUED:
01-30-26 SITE PLAN APPLICATION
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

CENTRAL AVE. RENDERING

sheet number:
A3.03

2/25/2026 4:25:38 PM

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1 STREETSCAPE (VIEW FROM EXIT 7 HEADING NORTH ON SPAULDING TURNPIKE)
1 1/2" = 1'-0"

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CONSTRUCTION CORPORATION
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PHONE (603) 527-9090 ▪ WWW.OPECHEE.COM

LICENSED ARCHITECT
DAVID L SHERBORNE
No. 04114
02-25-26
STATE OF NEW HAMPSHIRE
[stamp]

PROPOSED TOWNEPLACE SUITES BY MARRIOTT

47 Central Ave Dover, NH

REVISION:

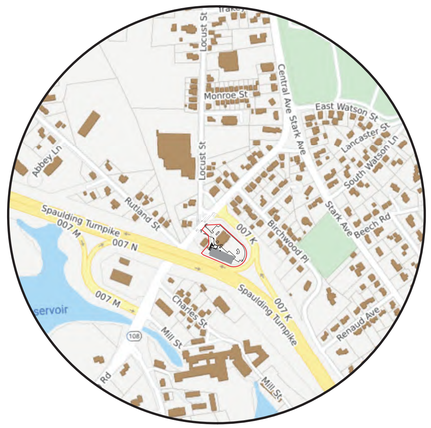
ISSUED:
02-25-26 TRC REVIEW

Project Architect: DLS
Drawn by: RTC
Revised by:

SPAULDING TPK. RENDERING

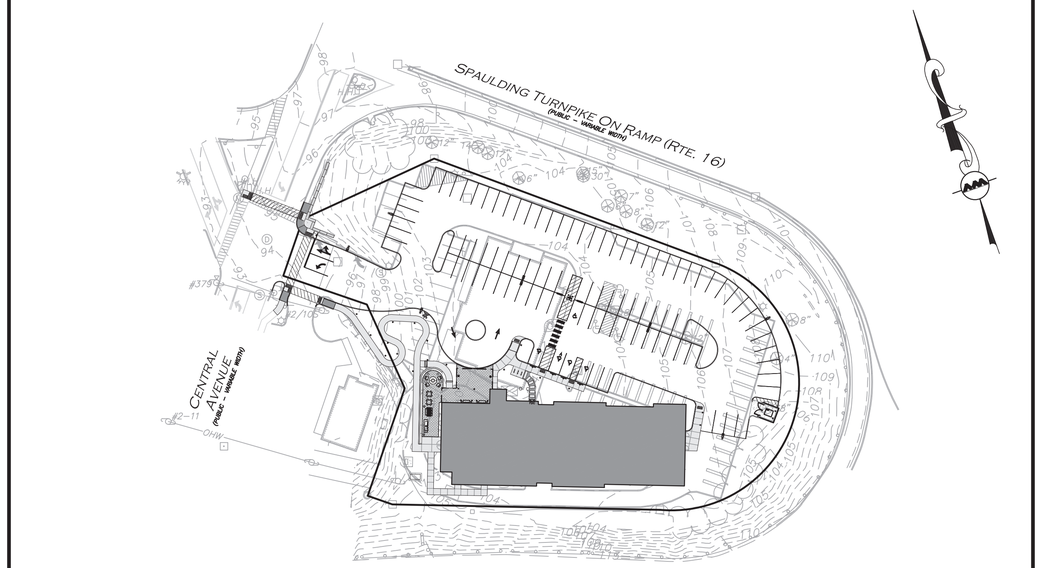
sheet number:
A3.04

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LOCUS MAP
SCALE: 1" = 600'

SITE DEVELOPMENT PLANS FOR
TOWNPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
(MAP 17, LOT 76)
DOVER, NEW HAMPSHIRE 03820



GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

LIST OF DRAWINGS					
DRAWING TITLE	SHEET NO.	ISSUED	REV 1	REV 2	REV 3
EXISTING CONDITIONS	V-101	01-22-26	-	-	-
SITE PREPARATION PLAN	C-101	01-30-26	02-25-26	03-12-26	-
LAYOUT & MATERIALS PLAN	C-102	01-30-26	02-25-26	03-12-26	-
GRADING & DRAINAGE	C-103	01-30-26	02-25-26	03-12-26	-
UTILITIES PLAN	C-104	01-30-26	02-25-26	03-12-26	-
LIGHTING PLAN	C-105	01-30-26	02-25-26	03-12-26	-
NEIGHBORHOOD PLAN	C-106	01-30-26	02-25-26	03-12-26	-
TRUCK TURNING PLAN	C-107	01-30-26	02-25-26	03-12-26	-
SEWER PLAN & PROFILE	C-201	01-30-26	02-25-26	03-12-26	-
DETAILS	C-501	01-30-26	02-25-26	-	-
DETAILS	C-502	01-30-26	02-25-26	-	-
DETAILS	C-503	01-30-26	02-25-26	-	-
DETAILS	C-504	01-30-26	02-25-26	-	-
CITY OF DOVER STANDARD DETAILS	C-505	01-30-26	02-25-26	-	-
CITY OF DOVER STANDARD DETAILS	C-506	01-30-26	02-25-26	03-12-26	-
SEWER SPECIFICATIONS	C-507	01-30-26	02-25-26	-	-
LANDSCAPING PLAN	L-101	01-30-26	02-25-26	03-12-26	-
LANDSCAPING DETAILS	L-501	01-30-26	02-25-26	-	-
LANDSCAPING NOTES	L-502	01-30-26	02-25-26	-	-
FIRST FLOOR PLAN	A1.01	02-25-26	-	-	-
UPPER FLOOR PLAN	A1.02	02-25-26	-	-	-
EXTERIOR ELEVATIONS	A3.01	01-30-26	02-25-26	-	-
EXTERIOR ELEVATIONS	A3.02	01-30-26	02-25-26	-	-
CENTRAL AVE RENDERING	A3.03	01-30-26	02-25-26	-	-
SPAULDING TURNPIKE RENDERING	A3.04	02-25-26	-	-	-

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130
PHONE:

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

DESIGN-BUILD FIRM/ARCHITECT:
OPECHEE CONSTRUCTION CORPORATION
11 CORPORATE DRIVE
BELMONT, NH 03220
PHONE: (603) 527-9090

CIVIL ENGINEER / SURVEYOR / LANDSCAPE ARCHITECT:
ALLEN & MAJOR ASSOCIATES, INC.
400 HARVEY ROAD
MANCHESTER, NH 03103
PHONE: 603.627.5500

TRAFFIC ENGINEER:
VANASSE ASSOCIATES, INC.
35 NEW ENGLAND BUSINESS CENTER DRIVE, SUITE 140
ANDOVER, MA 01810

PERMITS/APPROVALS	PERMIT NUMBER	APPROVED DATE	EXPIR. DATE
CITY OF DOVER SITE PLAN REVIEW	SITE-2026-0001	TBD	TBD
CITY OF DOVER CONDITIONAL USE PERMIT	COND-2026-0015	TBD	TBD
CITY OF DOVER CONDITIONAL USE PERMIT	COND-2026-0016	TBD	TBD
CITY OF DOVER CONDITIONAL USE PERMIT	COND-2026-0017	TBD	TBD
CITY OF DOVER CONDITIONAL USE PERMIT	COND-2026-0018	TBD	TBD
NH DES SEWER CONNECTION PERMIT	TBD	TBD	TBD

STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER
03.12.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

OWNER'S SIGNATURE DATE

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501

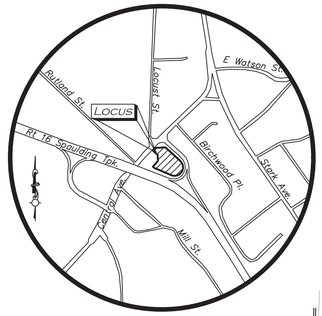
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ISSUED FOR CITY OF DOVER T.R.C. REVIEW: JANUARY 30, 2026
ISSUED FOR PLANNING BOARD REVIEW: FEBRUARY 25, 2026
ISSUED FOR PLANNING BOARD REVIEW: MARCH 12, 2026

PLANNING BOARD FILE NUMBER: SITE-2026-0001

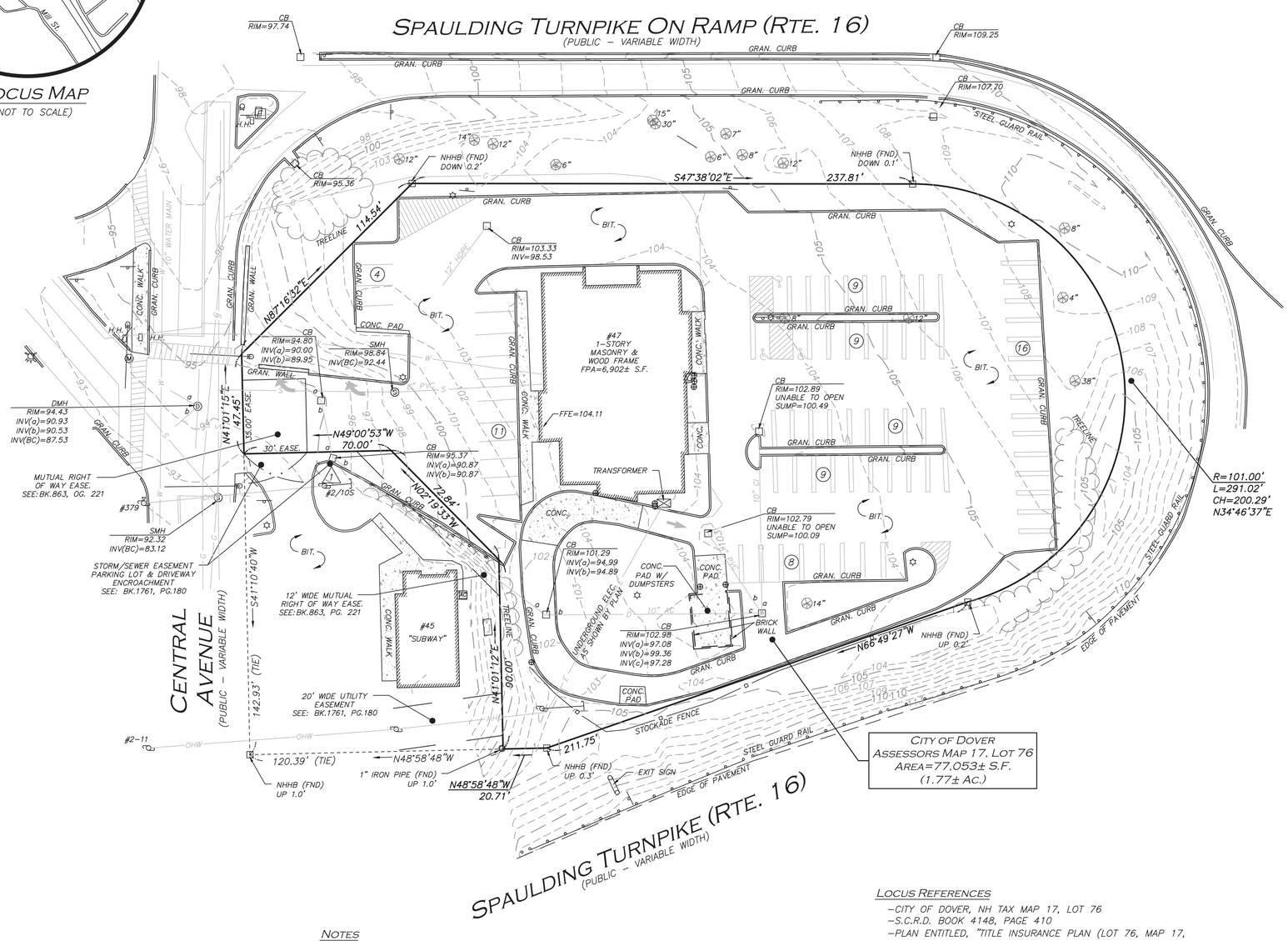
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LOCUS MAP
(NOT TO SCALE)

PARKING SUMMARY	
STANDARD STALLS	72
HANDICAPPED STALLS	3
TOTAL STALLS	75

BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	SPIKE IN UTILITY POLE #2/10S	95.63



LEGEND

CONCRETE BOUND (CB)	⊡
IRON PIPE (IP)	○
IRON ROD (IR)	◦
DRAIN MANHOLE (DMH)	Ⓓ
SEWER MANHOLE (SMH)	Ⓢ
MISC. MANHOLE (MH)	Ⓜ
CATCH BASIN (CB)	□
ROUND CATCH BASIN (RCB)	⊞
UTILITY POLE	
UTILITY POLE W/LIGHT	
GUY WIRE	
FIRE HYDRANT	
WATER GATE	
GAS GATE	
BOLLARD	
TREE	
BUSH / SHRUB	
SIGN	
MAILBOX	MB
TRANSFORMER	⊠
HAND HOLE	H.H.
AIR CONDITIONER	AC
HANDICAPPED PARKING SPACE	
TRAFFIC MAST	
PAINTED ARROW	
PARKING SPACE COUNT	16
CONCRETE	
BUILDING	
BUFFER ZONE	
EASEMENT LINE	
1' CONTOUR	53
5' CONTOUR	55
PROPERTY LINE	
ABUTTERS LINE	
STONE RETAINING WALL	
TREE LINE	
EDGE OF PAVEMENT	
CURB	
CHAIN LINK FENCE	x
STOCKADE FENCE	□
GUARDRAIL	
WATER LINE	W
SEWER LINE	S
DRAIN LINE	D
OVERHEAD WIRES	OHW
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
FOUND	FND
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.

NEW HAMPSHIRE GRID (NAD 83)

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

NOTES

1. NORTH ARROW IS BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM THE STRAFFORD COUNTY REGISTRY OF DEEDS IN DOVER, NH
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0320E, EFFECTIVE DATE, 9/30/2015
6. PER WETLAND DELINEATION REPORT PREPARED BY STONEY RIDGE ENVIRONMENTAL, LLC DATED DECEMBER 29, 2025, THERE ARE NOT WETLANDS ON THE PROPERTY. FIELD EVALUATION PERFORMED BY CYNTHIA M. BALCIUS, CSS 061.

LOCUS REFERENCES

–CITY OF DOVER, NH TAX MAP 17, LOT 76
–S.C.R.D. BOOK 4148, PAGE 410
–PLAN ENTITLED, "TITLE INSURANCE PLAN (LOT 76, MAP 17, CENTRAL AVENUE DOVER, NEW HAMPSHIRE PREPARED FOR BURGER KING CORPORATION", SCALE: 1"=20', DATED: JUNE 04, 1990, PREPARED BY: ALLAN H. SWANSON, INC., AND ON FILE AT THE S.C.R.D. AS PLAN BK. 38A, PG. 3.

PLAN REFERENCES

–PLAN ENTITLED, "PLAN OF LOTS DOVER, NEW HAMPSHIRE FOR: PAUL H. & LILLIAN S. DANTOS & C. JEANNINE LORD", SCALE: 1"=20', DATED: APRIL, 1984, PREPARED BY: JOHN W. DURGIN ASSOCIATES, INC., AND ON FILE AT THE S.C.R.D. AS PLAN NO. 24A–21.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

R:\PROJECTS\1173-31\SURVEY\DRAWINGS\CURRENT\S-1173-31-EC.DWG
FB# ???? PG. ???

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN DECEMBER 18, 2025 AND DECEMBER 22. 2025 AND HAD AN ERROR OF CLOSURE OF NO GREATER THAN 1/10,000.

ALLEN & MAJOR ASSOCIATES, INC.

STATE OF NEW HAMPSHIRE — No. 908 JAMES P. SMITH — SIGNATURE — LAND SURVEYOR

JAMES P. SMITH NH LLS #908 — 1-22-2026 DATE

REV	DATE	DESCRIPTION

APPLICANT\OWNER:

OPEECHEE CONSTRUCTION
11 CORPORATE DRIVE
BELMONT, NH 03220

PROJECT:

TAX MAP 17 LOT 76
47 CENTRAL AVE, DOVER, NH

PROJECT NO.	1173-31	DATE:	01-22-2026
SCALE:	1" = 30'	DWG. NAME:	S-1173-31-EC
DRAFTED BY:	SRP/CTP	CHECKED BY:	JPS

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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MANCHESTER, NH 03103
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DRAWING TITLE:

EXISTING CONDITIONS PLAN

SHEET No.

V-101

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EROSION CONTROL AND SEDIMENT CONTROL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED EROSION CONTROL MEASURES AND THE WORK REQUIRED TO PREPARE THE SITE FOR CONSTRUCTION.

2. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA NEW ENGLAND. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI IS REQUIRED TO BE SUBMITTED AT LEAST 14 DAYS PRIOR TO COMMENCING CONSTRUCTION.

3. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. COPIES OF ALL SWPPP REPORTS SHALL BE PROVIDED TO THE CITY OF DOVER WITHIN 3 DAYS OF EACH INSPECTION.

4. APPLICABLE WORK AND MATERIALS SHALL COMPLY WITH ALL CITY OF DOVER, NH DES, NH REGULATIONS AND CODES AND O.S.H.A. STANDARDS. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SITE PLAN REGULATIONS FROM THE CITY OF DOVER, NH PLANNING BOARD, AND THE PUBLIC WORKS DEPARTMENT SPECIFICATIONS, USDA SOIL CONSERVATION SERVICE VEGETATIVE PRACTICES IN SITE DEVELOPMENT.

5. AREAS WITH OVER 3:1 SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC150BN).

6. SILT CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 1992 "STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES" MANUAL. ANY SUCH MODIFICATIONS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.

7. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED WITHIN 7 DAYS OF EXPOSURE SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL MEASURES WITHIN 7 DAYS OF DISTURBANCE. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF HAY OR STRAW MULCH IS USED IT SHALL BE APPLIED AT THE RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS AND IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.

8. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY SEPTEMBER 15 OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 2 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS, ON VEGETATED SLOPES IN EXCESS OF 15%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.

9. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 3LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.

10. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED ACCORDING TO THE STORMWATER POLLUTION PREVENTION PLANS. THESE SHALL BE MAINTAINED DURING CONSTRUCTION TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85–90% VIGOROUS PERENNIAL COVER OF GRASSES.

11. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED IN ACCORDANCE WITH ENV–A1000.

12. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. CATCH BASIN INLETS SHALL ALSO BE PROTECTED DURING CONSTRUCTION BY THE USE OF STONE INLET PROTECTION AROUND EACH INLET. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85–90% OF VIGOROUS PERENNIAL GROWTH.

13. REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION. FOLLOWING SEED BED PREPARATION ALL AREAS NOT NOTED TO RECEIVE COVER SHALL BE LOAM AND SEEDED. AREAS SEEDED BETWEEN MAY 15 TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15TH. HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F.

14. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS FOR TEMPORARY SEEDED AREAS MAY BE APPLIED AS FOLLOWS:
    - 10–10–10 FERTILIZER (N–P205–K20 OR EQUAL)- APPLICATION RATE= 25 LBS/1,000 S.F.
    - GROUND LIMESTONE (85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE. APPLICATION RATE= 100 LB/1,000 S.F.
    - WHEN FERTILIZER IS APPLIED WITHIN 100' OF ANY RIVER, STREAM, POND, OR LAKE IT SHALL BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER.

15. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY NH DES AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER.

16. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED DURING THE ENTIRE CONSTRUCTION CYCLE. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED IN THE CONTRACTORS FIELD OFFICE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL AT A MINIMUM OF (1/4" OR GREATER OF RAINFALL) OR RUNOFF EVENT, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS. THE CONTRACTOR SHALL MAINTAIN A LOG IN ACCORDANCE WITH THE PLANS, NHDES, AND CITY OF DOVER, NH.

17. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED IN THE INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.

18. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA BIMONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85–90% VEGETATED VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVEN OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.

19. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT–OF–WAY MUST BE REMOVED IMMEDIATELY.

20. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.

21. ALL EXISTING & PROPOSED CATCH BASINS SUBJECT TO STORMWATER RUNOFF DURING CONSTRUCTION SHALL HAVE STONE INLET PROTECTION AND SILT SACKS INSTALLED OR AS DIRECTED BY THE OWNER/ENGINEER. NO SEDIMENTATION SHALL ENTER THE ON–SITE OR OFF–SITE DRAINAGE SYSTEMS AT ANY TIME.

22. CONTRACTOR TO CONTROL FUGITIVE DUST IN ACCORDANCE WITH ENV–A 1002. CONTRACTOR TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST, INCLUDING BUT NOT LIMITED TO THE FOLLOWING METHODS: WETTING, COVERING, SHIELDING OR VACUUMING.

23. IF DEWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION. ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED, IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DEWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR ITS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL–VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.

GENERAL NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

3. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.

4. GRADING / DEMOLITION OUTSIDE OF THE PROJECT BOUNDARIES (IF ANY) REQUIRES A TEMPORARY CONSTRUCTION/GRADING EASEMENT FROM THE LANDOWNER (BY OTHERS).

5. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.

6. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.

7. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.

8. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM TO 6PM, SATURDAY AND SUNDAY 9AM TO 4PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON THE SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

9. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

10. THE APPLICANT (OR ASSIGNEE) SHALL COMPLETE THE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
HTTPS://WWW.UNK.EDU/UNHSC/PTAPP

CITY OF DOVER EROSION CONTROL INSPECTION NOTES:

1. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 CALENDAR DAYS UNLESS CONDITIONS DICTATE OTHERWISE.

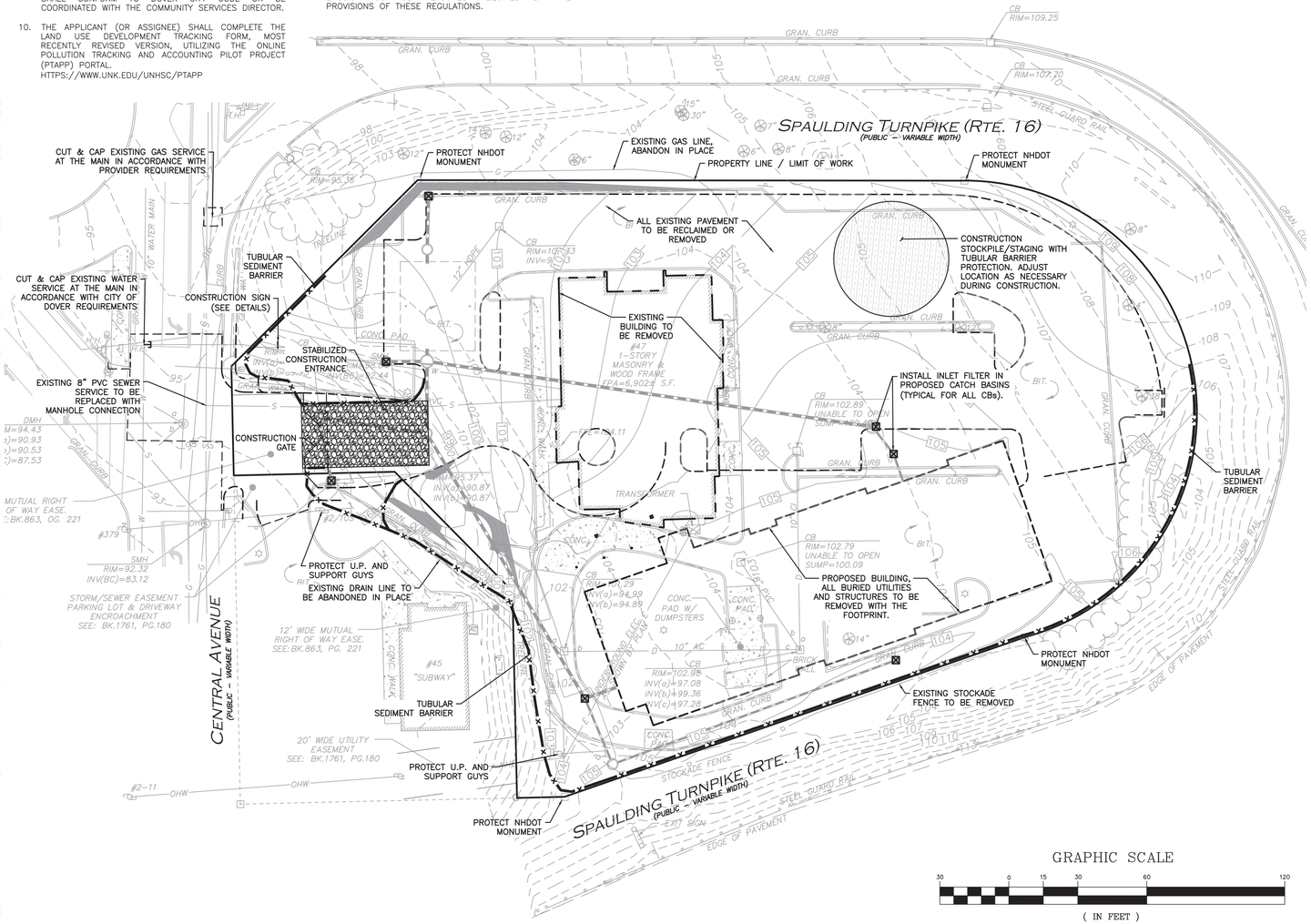
2. THE COMMUNITY SERVICES DEPARTMENT OR ITS DESIGNATED AGENT SHALL HAVE ACCESS TO THE SITE TO COMPLETE ROUTINE INSPECTIONS.

3. THE COMMUNITY SERVICES DEPARTMENT SHALL BE NOTIFIED 24 HOURS PRIOR TO INSTALLATION OF A STORMWATER BMP IN ORDER TO SCHEDULE AN INSPECTION. THESE INSPECTIONS SHALL BE COMPLETED DURING NORMAL WORKING HOURS.

4. THE PLANNING BOARD OR COMMUNITY SERVICES DEPARTMENT MAY REQUIRE THE DESIGN ENGINEER AND/OR AN INDEPENDENT THIRD PARTY TO PROVIDE INSPECTION AND OVERSIGHT OF THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES AND EROSION AND SEDIMENT CONTROL MEASURES AT ITS DISCRETION. SUCH OVERSIGHT MAY BE ESPECIALLY IMPORTANT FOR IMPLEMENTING TECHNIQUES SUCH AS POROUS PAVEMENT OR SUBSURFACE STORMWATER INFILTRATION SYSTEMS. THE OWNER/APPLICANT SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THIRD–PARTY INSPECTIONS.

5. ALL SWPPP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORMWATER INSPECTOR (CESSWI), OR A CERTIFIED PROFESSIONAL IN STORMWATER QUALITY (CPSWQ). INSPECTION REPORTS SHALL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.

6. THE OWNER IS ULTIMATELY RESPONSIBLE FOR THE INSTALLATION, CONSTRUCTION, INSPECTION, AND DISPOSITION OF ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES REQUIRED BY THE PROVISIONS OF THESE REGULATIONS.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

- LIMIT OF DISTURBANCE
- LIMIT OF 'CLEAR AND GRUB'
- BUILDING TO BE REMOVED
- PAVEMENT TO BE REMOVED
- UTILITY CUT AND CAP
- TEMPORARY FENCE

DIG SAFE

BEFORE YOU DIG CALL 811 OR 1–888–DIG–SAFE 1–888–344–7233

R:\PROJECTS\1173–31\CIVIL\DRAWINGS\CURRENT\C–1173–31_SITE–PREP.DWG

STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER

03.12.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 30'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

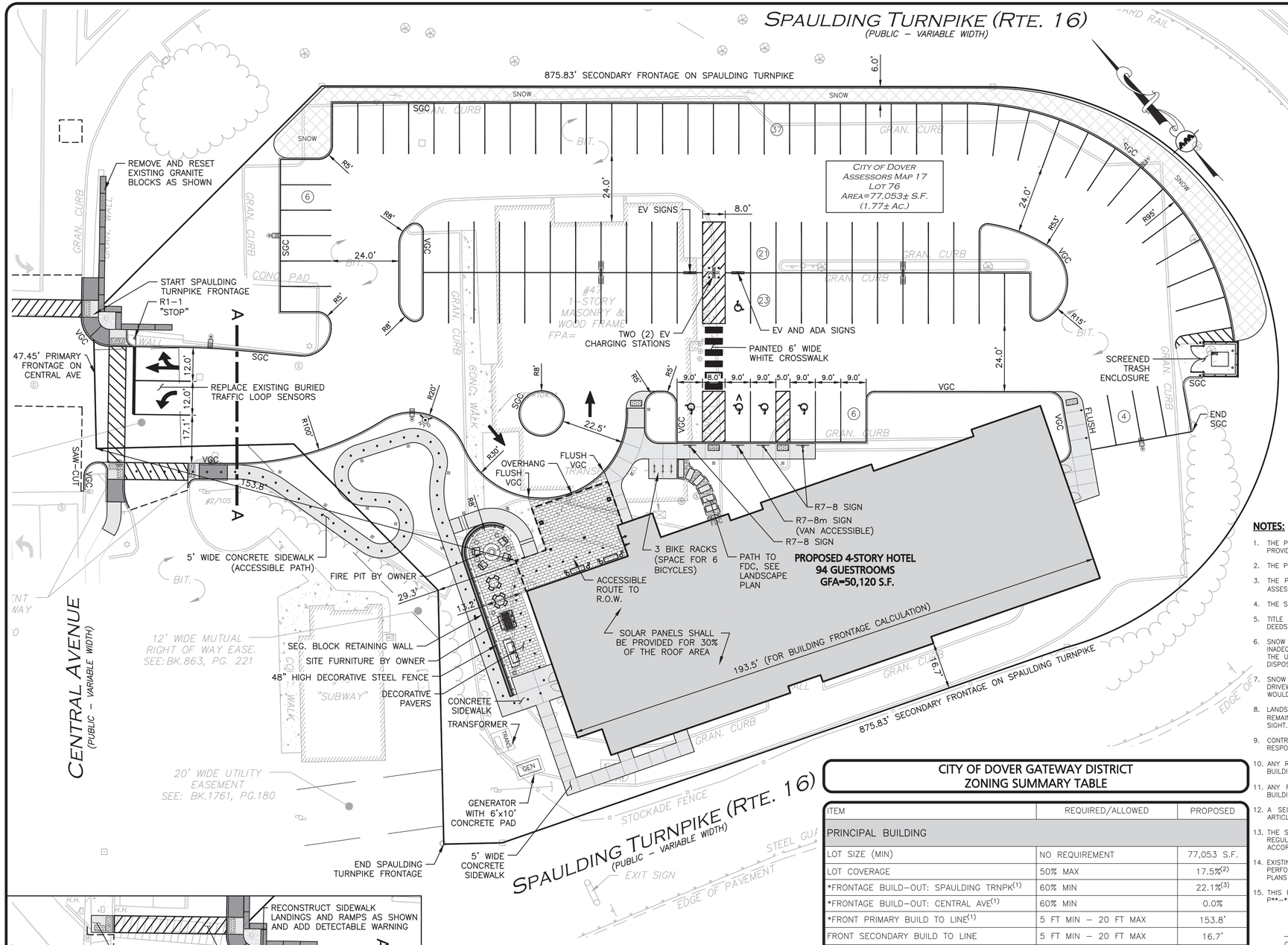
PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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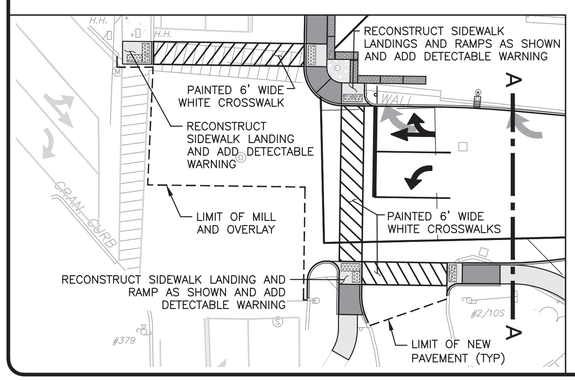
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DRAWING TITLE: SITE PREPARATION PLAN

SHEET No. C-101

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LEGEND

PROPERTY LINE	
SIGN	
BOLLARD	
BUILDING	
BUILDING ARCHITECTURE	
CURB	
PARKING STRIPING	
ROADWAY STRIPING	
TRAFFIC ARROWS	
CONCRETE PAD	
CONCRETE SIDEWALK	
DECORATIVE PAVERS	
ADA ACCESSIBLE RAMP	
ADA DET. WARNING SURFACE	
SNOW STORAGE	
SETBACK LINE	
SAW-CUT LINE	
PARKING COUNT	(10)
STEEL GUARDRAIL	
WOOD FENCE	
TRANSFORMER	T
GENERATOR	GEN
BOLLARD LIGHT	
POLE LIGHT	
ACCESSIBLE ROUTE	
VERTICAL GRANITE CURB	VGC
SLOPED GRANITE CURB	SGC

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SITE LAYOUT AND MATERIALS AND PROVIDE A PARKING AND ZONING SUMMARY TABLE.
2. THE PROPOSED USE OF THE STRUCTURE IS A HOTEL.
3. THE PARCEL IS SHOWN AS LOT NO. 76, MAP 17 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL CONTAINS 1.77 ACRES OR 77,053 SQ. FT. AREA OF LAND.
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 4148, PAGE 410.
6. SNOW SHALL BE TAKEN OFF-SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE, AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE OR BLOCKS THE USE OF ON-SITE PARKING. ANY EXCESS WILL BE BE TRUCKED OFF-SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
7. SNOW WINDROWS WITHIN SIGHT TRIANGLE AREAS OF THE PROJECT SITE DRIVEWAY SHOULD BE PROMPTLY REMOVED WHERE SUCH ACCUMULATIONS WOULD IMPEDE SIGHTLINES.
8. LANDSCAPING ADJACENT TO THE SITE DRIVEWAY SHALL BE MAINTAINED TO REMAIN BELOW 24" ABOVE THE DRIVEWAY SO AS NOT TO RESTRICT LINES OF SIGHT.
9. CONTRACTOR TO PROVIDE ALL-WEATHER ACCESS FOR CITY OF DOVER FIRST RESPONDERS DURING CONSTRUCTION.
10. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.
11. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.
12. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
13. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
14. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
15. THIS PLAN REFERENCES SITE PLAN APPROVAL P**-** AND CUPs P**-** AND P**-**.

CITY OF DOVER GATEWAY DISTRICT ZONING SUMMARY TABLE

ITEM	REQUIRED/ALLOWED	PROPOSED
PRINCIPAL BUILDING		
LOT SIZE (MIN)	NO REQUIREMENT	77,053 S.F.
LOT COVERAGE	50% MAX	17.5%(2)
*FRONTAGE BUILD-OUT: SPAULDING TRNPK(1)	60% MIN	22.1%(3)
*FRONTAGE BUILD-OUT: CENTRAL AVE(1)	60% MIN	0.0%
*FRONT PRIMARY BUILD TO LINE(1)	5 FT MIN – 20 FT MAX	153.8'
FRONT SECONDARY BUILD TO LINE	5 FT MIN – 20 FT MAX	16.7'
SIDE SETBACK	10 FT MIN	29.3'
REAR SETBACK	15 FT MIN	N/A
HEIGHT OF BUILDING		
PRINCIPAL BUILDING	4 STORY MAX, 2 STORY MIN	4 STORIES
USE		
*LODGING(1)	13 OR MORE ROOMS ARE PERMITTED WITH C.U.P.	94

TABLE NOTES:

1. "*" INDICATES DIMENSIONAL CONDITIONAL USE PERMIT REQUIRED.
2. LOT COVERAGE: (13,506 S.F. FOOTPRINT INCLUDING OVERHANG/77,053 S.F. LOT)=17.5%
3. FRONTAGE BUILD-OUT FOR SPAULDING TURNPIKE (875.83' OF FRONTAGE) (193.5' OF BUILDING LENGTH ON SPAULDING TURNPIKE)/(875.83' FRONTAGE) = 22.1%

OFF-STREET PARKING SUMMARY

USE	MAX ALLOWED CALCULATION	MAX ALLOWED	TOTAL(1) PROVIDED
LODGING (NON CBD-G)	1.0 SPACE/UNIT+1.0 SPACE/EMPLOYEE (1.0x94 GUESTROOMS)+(1.0x13 EMPLOYEES)	104	97

TABLE NOTES:

1. NUMBER OF TOTAL EMPLOYEES = 20
2. NUMBER OF EMPLOYEES DURING MAXIMUM SHIFT = 13
3. NUMBER OF OVERNIGHT EMPLOYEES DURING PEAK PARKING DEMAND = MAX. 2
4. FOR 76–100 SPACES, 4 SHALL BE ACCESSIBLE, ONE SHALL BE VAN ACCESSIBLE.
5. 6 BICYCLE SPACES PROVIDED (REQUIRED: 5% OF TOTAL PARKING OF 97 = 4.9)

OWNER'S SIGNATURE DATE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03-12-26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
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400 HARVEY ROAD
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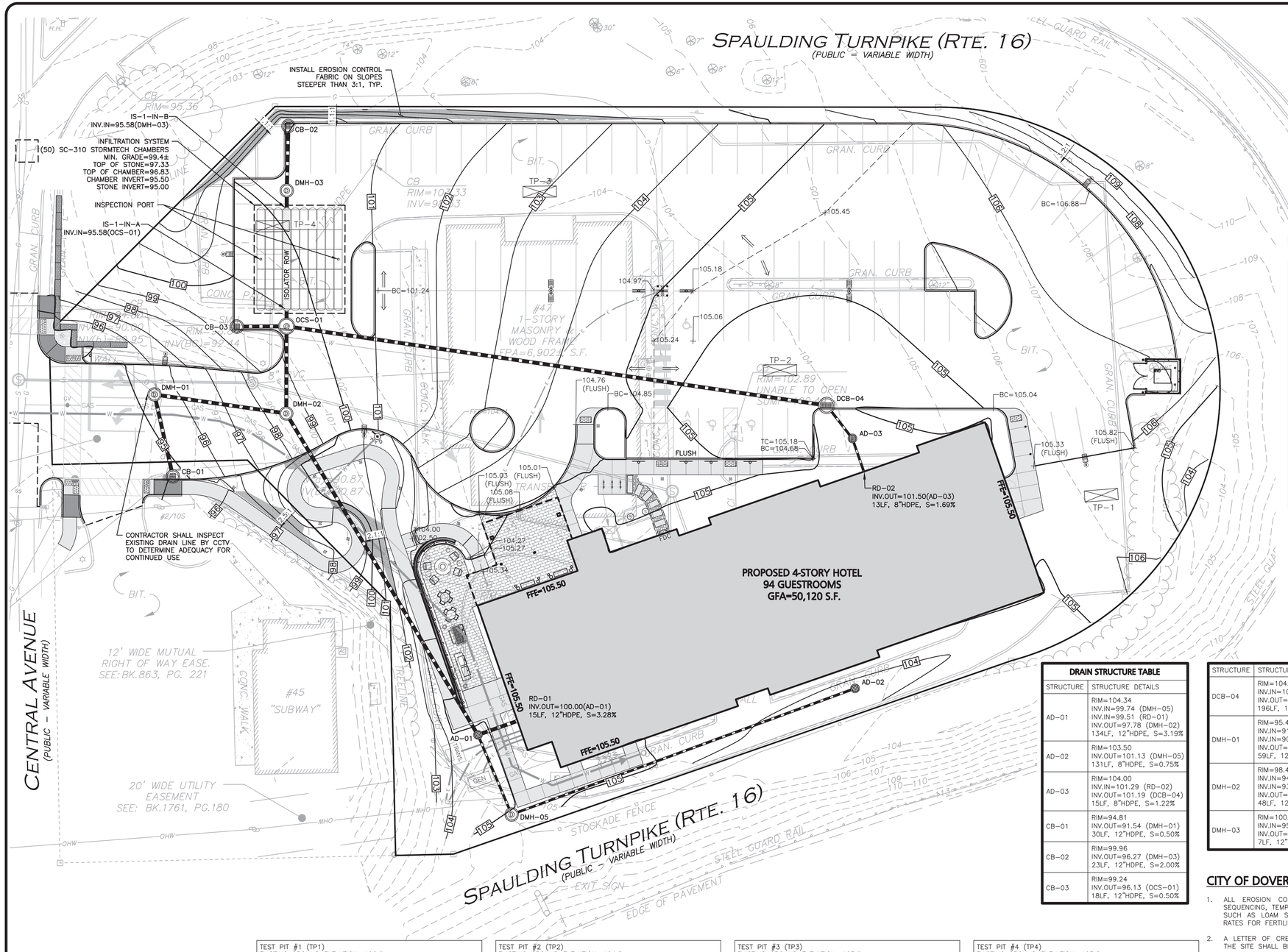
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DRAWING TITLE: LAYOUT & MATERIALS PLAN

SHEET No. C-102

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LEGEND

- DRAIN MANHOLE (DMH)
- CATCH BASIN (CB)
- CATCH BASIN – DOUBLE GRATE
- OUTLET CONTROL STRUCTURE (OCS)
- AREA DRAIN (AD)
- DRAIN LINE
- EROSION CONTROL FABRIC
- 5' CONTOUR
- 1' CONTOUR
- SPOT GRADE ×55.50
- INFILTRATION SYSTEM
- INFILTRATION CHAMBER
- ISOLATOR ROW
- FLOW DIRECTION

DRAIN STRUCTURE TABLE

STRUCTURE	STRUCTURE DETAILS
AD–01	RIM=104.34 INV.IN=99.74 (DMH–05) INV.IN=99.51 (RD–01) INV.OUT=97.78 (DMH–02) 134LF, 12"HDPE, S=3.19%
AD–02	RIM=103.50 INV.OUT=101.13 (DMH–05) 131LF, 8"HDPE, S=0.75%
AD–03	RIM=104.00 INV.IN=101.29 (RD–02) INV.OUT=101.19 (DCB–04) 15LF, 8"HDPE, S=1.22%
CB–01	RIM=94.81 INV.OUT=91.54 (DMH–01) 30LF, 12"HDPE, S=0.50%
CB–02	RIM=99.96 INV.OUT=96.27 (DMH–03) 23LF, 12"HDPE, S=2.00%
CB–03	RIM=99.24 INV.OUT=96.13 (OCS–01) 18LF, 12"HDPE, S=0.50%

STRUCTURE	STRUCTURE DETAILS
DCB–04	RIM=104.40 INV.IN=101.00 (AD–03) INV.OUT=100.90 (OCS–01) 196LF, 12"HDPE, S=2.35%
DMH–01	RIM=95.43 INV.IN=91.39 (CB–01) INV.IN=90.10 (DMH–02) INV.OUT=90.00 (EX) 59LF, 12"EXISTING, S=3.42%
DMH–02	RIM=98.49 INV.IN=94.75 (OCS–01) INV.IN=93.50 (AD–01) INV.OUT=93.40 (DMH–01) 48LF, 12"HDPE, S=6.91%
DMH–03	RIM=100.19 INV.IN=95.80 (CB–02) INV.OUT=95.70 (IS–1–IN–B) 7LF, 12"HDPE, S=1.89%

STRUCTURE	STRUCTURE DETAILS
DMH–05	RIM=105.25 INV.IN=100.15 (AD–02) INV.OUT=100.05 (AD–01) 31LF, 8"HDPE, S=1.00%
OCS–01	RIM=99.41 INV.IN=96.30 (DCB–04) INV.IN=96.05 (CB–03) INV.OUT=95.70 (IS–1–IN–A) 6LF, 12"HDPE, S=2.00% INV.OUT=95.00 (DMH–02) 31LF, 12"HDPE, S=0.80%

CITY OF DOVER NOTES:

1. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
2. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
3. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
4. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTIONAL SERVICES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

TEST PIT #1 (TP1)
EXISTING GROUND ELEVATION: 106.2
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–3"	–	–	–	BIT. PAVEMENT
HTM	3–12"	–	–	–	GRAVEL BASE
C	12–100"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	REDOX. 10YR 3/6 RED. 2.5YR 4/8 OX.

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: 68" (ELEV.=100.5)
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

TEST PIT #2 (TP2)
EXISTING GROUND ELEVATION: 104.8
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–6"	–	–	–	BIT. PAVEMENT
HTM	6–12"	–	–	–	GRAVEL BASE
C	12–60"	LOAM	10YR 4/4	SUBANGULAR BLOCKY	

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: 60" (APPEARED TO BE LARGE FRACTURED BOULDER)

TEST PIT #3 (TP3)
EXISTING GROUND ELEVATION: 103.9
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–8"	–	–	–	BIT. PAVEMENT
HTM	8–18"	–	–	–	GRAVEL BASE
HTM	18–84"	SAND	10YR 6/6	SINGLE GRAIN, LOOSE	CLEAN FILL
C	84–88"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	–

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

TEST PIT #4 (TP4)
EXISTING GROUND ELEVATION: 103.2
PERFORMED BY: BRIAN D. JONES, PE
DATE: 01–20–2026

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0–8"	–	–	–	BIT. PAVEMENT
HTM	8–12"	–	–	–	GRAVEL BASE
C_1	12–48"	LOAM	10YR 4/2	SUBANGULAR BLOCKY	–
C_2	48–96"	FINE SANDY LOAM	10YR 6/6	SUBANGULAR BLOCKY	–

HTM: HUMAN TRANSPORTED MATERIAL
ESHGW: NONE
WEEP: NONE
GROUNDWATER: NONE
REFUSAL: NONE

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1–888–344–7233

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STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER
03.12.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
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41 OLD BEDFORD ROAD
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DRAWING TITLE:
GRADING & DRAINAGE PLAN

SHEET No.
C-103

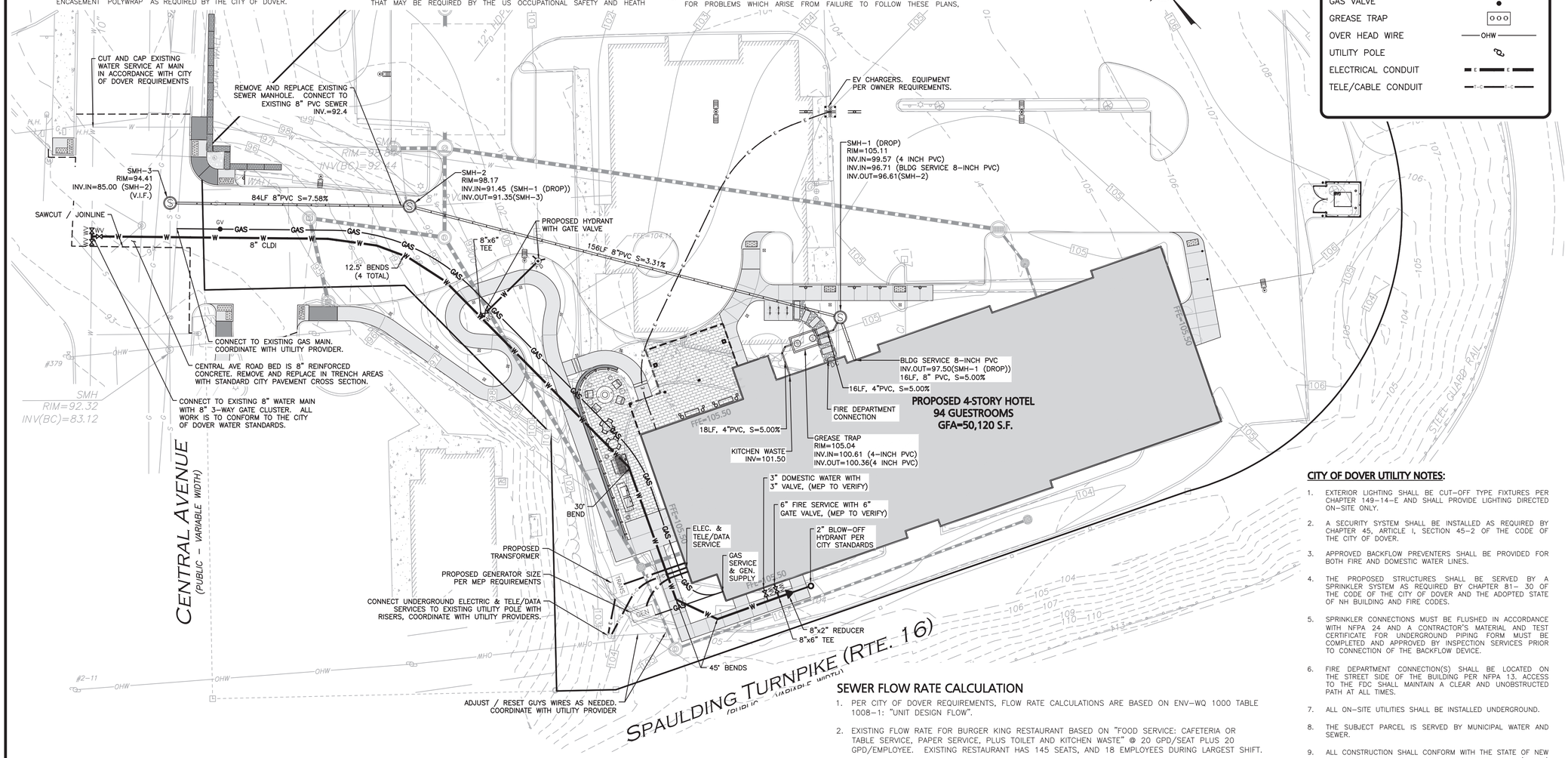
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NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED SITE UTILITIES AND PROVIDE INFORMATION REGARDING THEIR INSTALLATION.
2. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND/OR STORM DRAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
3. IN THE CASE THAT WATER MAINS CROSS SANITARY SEWER MAINS AND ARE SEPARATED BY LESS THAT 18" OF VERTICAL CLEARANCE, THE SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 8 LINEAR FEET CENTERED ON THE CROSSING.
4. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 147 – SEWERS" SHALL BE FOLLOWED WHEN PERFORMING ANY SANITARY SEWER WORK. SEWER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 148 – WATER SYSTEMS" SHALL BE FOLLOWED WHEN PERFORMING ANY WATER DISTRIBUTION WORK. WATER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL DUCTILE IRON MAINS SHALL BE PROVIDED WITH POLYETHYLENE ENCASEMENT "POLYWRAP" AS REQUIRED BY THE CITY OF DOVER.
7. THE CONTRACTOR SHALL REFER TO ARCHITECTS PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL ROOF DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELEPHONE, AND CAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND COORDINATE WITH THE PROPER AGENCY THE LOCATION AND SCHEDULING OF CONNECTIONS WITH THEIR FACILITIES.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION. THE ENGINEER WILL THEN PROVIDE RESOLUTION TO UTILITY CONFLICTS WITHOUT DELAY.
9. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE CITY OF DOVER, NHDOT, NHDES, MUTCD, AND AASHTO.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS OF THE SITE. THESE PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC., DO NOT EXTEND TO, NOR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THE EMPLOYEES, AGENTS OF REPRESENTATIVES IN PERFORMANCE OF THE WORK. THE SEAL OF THE ARCHITECT OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OF OBTAIN THE APPROPRIATE SAFETY SYSTEMS THAT MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEATH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
11. ALL ELEVATIONS REFER TO NAVD 88.
12. PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE FACE OF THE STRUCTURE.
13. LOCATION OF PROPOSED ELECTRICAL/COMMUNICATION SERVICE IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE. PROPOSED ELECTRICAL SERVICE TO BE BURIED IN ACCORDANCE WITH THE CITY OF DOVER REGULATIONS AND ELECTRIC COMPANY.
14. LOCATION OF PROPOSED GAS MAIN IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE.
15. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
16. THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
17. POWER FEEDS AND INTERCONNECTIONS FOR SITE LIGHTING TO BE COORDINATED WITH THE ELECTRICAL ENGINEER.
18. EXISTING UTILITY STUBS WHICH WILL NOT BE USED SHALL BE SHUT OFF AND DISCONNECTED AS APPROPRIATE.

LEGEND

- SEWER MANHOLE
- SEWER CLEANOUT
- SEWER VENT
- SEWER LINE
- CONCRETE PIPE ENCASEMENT
- WATER LINE — W
- WATER VALVE — WV
- HYDRANT
- FIRE DEPARTMENT CONNECTION — FDC
- WATER LINE REDUCER
- GAS LINE — GAS
- GAS VALVE — GV
- GREASE TRAP
- OVER HEAD WIRE — OHW
- UTILITY POLE
- ELECTRICAL CONDUIT — E
- TELE/CABLE CONDUIT — T-C



SEWER PIPE CAPACITY CALCULATION

1. PROPOSED HOTEL FLOW RATE = 18,930 GPD (SEE SEWER FLOW RATE CALCULATION HEREON).
2. INFLOW AND INFILTRATION (I/I) CALCULATION: PER ENV-WQ 704.03(f)(2), THE I/I IS 300 GAL./INCH DIA. PER MILE PER DAY: ((172'/5280')(8")*300=78 GPD
3. TOTAL FLOW RATE = 18,930 GPD + 78 GPD = 19,008 GPD
4. PEAK FLOW RATE IS CALCULATED USING A 6x PEAKING FACTOR
   = (19,008 GPD/24 HOURS/60 MINUTES/60 SECONDS)*6x PEAKING FACTOR + (78 I/I GPD/24/60/60)
   = 1.32 GALLONS PER SECOND = 0.2 CUBIC FEET PER SECOND.
1. THE FINAL SECTION OF 8" SEWER PIPE (LENGTH OF 82 FEET, SLOPE OF 9%) CAPACITY AT 60% DEPTH IS 1.9 CFS, WHICH EXCEEDS THE PEAK FLOW RATE OF 0.2 CFS.

SEWER FLOW RATE CALCULATION

1. PER CITY OF DOVER REQUIREMENTS, FLOW RATE CALCULATIONS ARE BASED ON ENV-WQ 1000 TABLE 1008-1: "UNIT DESIGN FLOW".
2. EXISTING FLOW RATE FOR BURGER KING RESTAURANT BASED ON "FOOD SERVICE: CAFETERIA OR TABLE SERVICE, PAPER SERVICE, PLUS TOILET AND KITCHEN WASTE" @ 20 GPD/SEAT PLUS 20 GPD/EMPLOYEE. EXISTING RESTAURANT HAS 145 SEATS, AND 18 EMPLOYEES DURING LARGEST SHIFT.

   EXISTING FLOW RATE = (20 GPD/SEAT)*(145 SEATS) + (20 GPD/EMPLOYEE)*(18 EMPLOYEES)
   = 2,900 GPD + 360 GPD
   = 3,260 GPD
3. PROPOSED FLOW RATE FOR HOTEL BASED ON "HOTELS AND MOTELS" @ 200 GPD/ROOM PLUS 10 GPD/EMPLOYEE. PROPOSED HOTEL HAS 94 ROOMS AND 13 EMPLOYEES DURING THE MAXIMUM SHIFT.

   PROPOSED FLOW RATE = (200 GPD/ROOM)*(94 ROOMS) + (10 GPD/EMPLOYEE)*(13 EMPLOYEES)
   = 18,800 GPD + 130 GPD
   = 18,930 GPD
4. TOTAL INCREASE IN SEWER FLOW RATE FOR THE PROPOSED PROJECT

   = (PROPOSED HOTEL FLOW OF 18,930 GPD) – (EXISTING BK RESTAURANT FLOW OF 3,260 GPD)

   = 15,670 GPD INCREASE

CITY OF DOVER UTILITY NOTES:

1. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
2. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
3. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
4. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
5. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
6. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
7. ALL ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
8. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
9. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND THE CITY OF DOVER COMMUNITY SERVICE REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
03-12-26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

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TEL: (603) 627-5500
FAX: (603) 627-5501

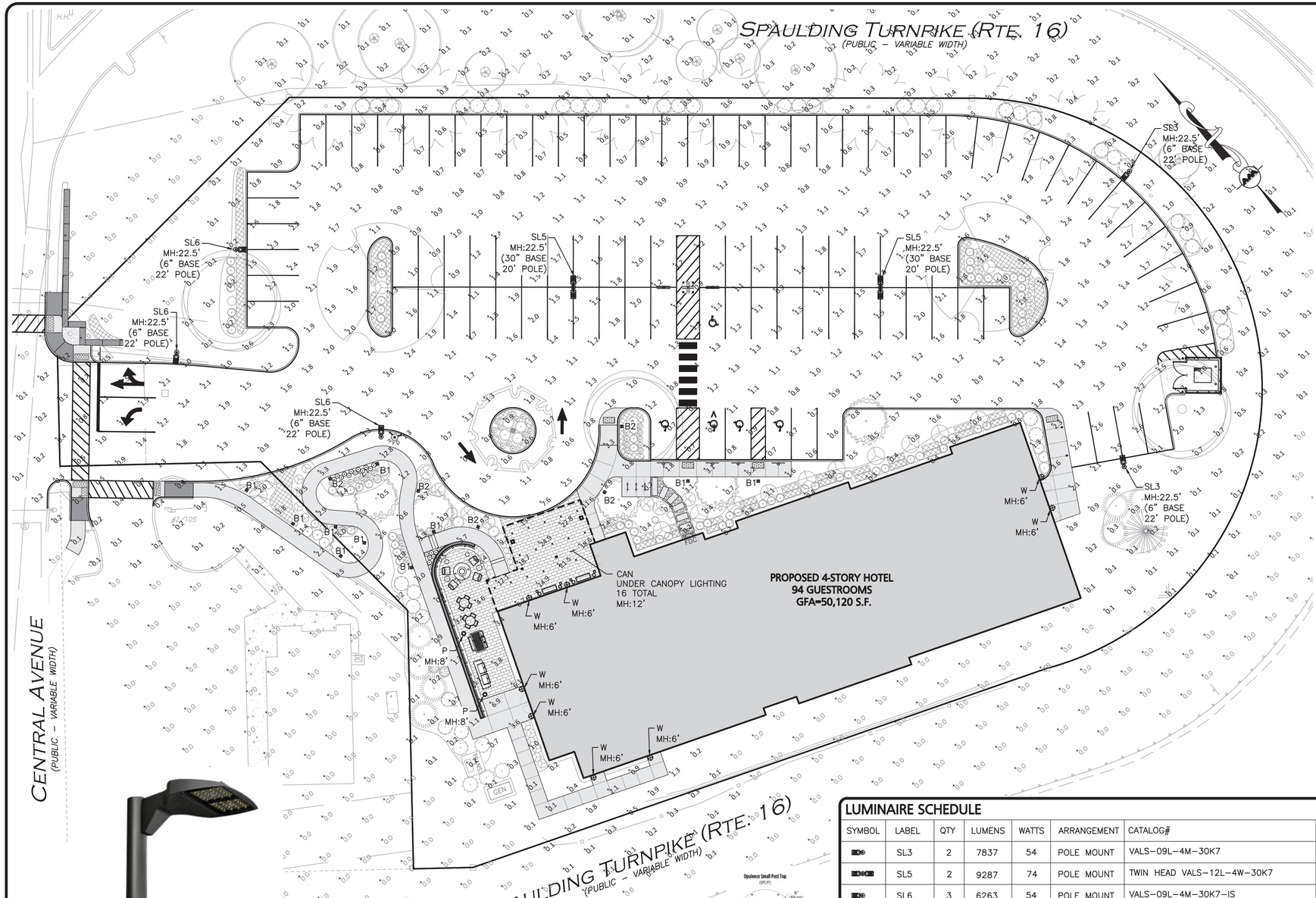
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: UTILITIES PLAN

SHEET No. C-104

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LEGEND

SINGLE POLE LIGHT	
DOUBLE POLE LIGHT	
BOLLARD LIGHT	
CANOPY LIGHT	
WALL SCONCE	
LIGHTING LEVELS GIVEN IN FOOT CANDLES	0.0 1.0 2.0 3.0

NOTES:

1. THE PURPOSE OF THIS PLAN IS DEPICT THE PROPOSED SITE LIGHTING FIXTURES AND PROVIDE THE PHOTOMETRIC LIGHTING LEVELS.
2. LIGHTING VENDOR INFORMATION:
   EXPOSURE LIGHTING
   CONTACT: CHRIS PECHALK
   Cpechalk@exposure2lighting.com
   603-540-7345
3. BUILDING MOUNTED LIGHTS AND LIGHTS WITHIN THE PARKING AREA SHALL OPERATE ON A PROGRAMMABLE TIMER. CONTROLS, OPTIONS, AND ACCESSORIES SHALL BE SELECTED BY THE OWNER.
4. CONTROLS FOR ALL EXTERIOR BUILDING MOUNTED LIGHTING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
5. WIRING FOR ALL BUILDING MOUNTED FIXTURES SHALL BE PROVIDED BY THE BUILDING ELECTRICAL CONTRACTOR.
6. SIZING AND LAYOUT OF THE WIRING OF THE SITE LIGHTING FIXTURES SHALL BE PROVIDED BY THE SITE ELECTRICAL CONTRACTOR.
7. LIGHT POLES ADJACENT TO PARKING SHALL HAVE THE 3'-0" REVEAL FOOTING. LIGHT POLES ADJACENT TO SIDEWALKS SHALL HAVE FOOTING IN A FLUSH CONDITION.
8. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
9. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. NO SUBSTITUTIONS, ADDITIONS, OR CHANGES MAY BE MADE WITHOUT PRIOR APPROVAL BY THE OWNER/ARCHITECT.
11. EXACT MOUNTING DETAILS TO BE DETERMINED AT THE JOBSITE BY ELECTRICAL CONTRACTOR.
12. ALL PROPOSED LIGHTING FIXTURES SHALL BE DARK SKY COMPLIANT.
13. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL LIGHTING INFORMATION AND COORDINATION WITH BUILDING ELECTRICAL.
14. FOOT CANDLE VALUES SHOWN ON THE PLAN ARE PRODUCED UTILIZING DESIGN MASTER PHOTOMETRICS SOFTWARE AND ASSOCIATED IES FILES BY THE MANUFACTURER FOR THE PROPOSED LIGHT FIXTURE.
15. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
16. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION, ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

LUMINAIRE SCHEDULE

SYMBOL	LABEL	QTY	LUMENS	WATTS	ARRANGEMENT	CATALOG#	HEIGHT	MANUFACTURER
	SL3	2	7837	54	POLE MOUNT	VALS-09L-4M-30K7	22'-6"	LSI INDUSTRIES
	SL5	2	9287	74	POLE MOUNT	TWIN HEAD VALS-12L-4W-30K7	22'-6"	LSI INDUSTRIES
	SL6	3	6263	54	POLE MOUNT	VALS-09L-4M-30K7-IS	22'-6"	LSI INDUSTRIES
	W	8	1655	11	WALL MOUNT	512-12LED19-BRZ 2MB 30K	6'-0"	INDESSA LIGHTING
	CAN	16	1613	15	CANOPY	RBC6-LL16-3000K-UNV	12'-0"	RAYON LIGHTING
	B1	10	1200	12	SIDEWALK BOLLARD	QUE-B-XX-12W-U-3K-T3-IBP-XX	3'-6"	ZUMA LIGHTING
	B2	5	1224	12	SIDEWALK BOLLARD	QUE-B-XX-12W-U-3K-T5-IBP-XX	3'-6"	ZUMA LIGHTING
	P	2	2361	20	PATIO LIGHT	OPS-PT-03L-3W-30K8-U0-EHS	8'-0"	LSI INDUSTRIES

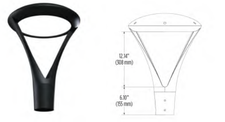
LIGHTING LEVEL SUMMARY

AREA	UNITS	AVERAGE	MAX.	MIN.	AVG/MIN	MAX/MIN
SITE WIDE	Fc	0.9	24.9	0.0	N.A.	N.A.
PARKING	Fc	1.3	3.0	0.4	3.4	7.5
PATIO	Fc	4.1	7.0	1.1	3.7	6.4
UNDER CANOPY	Fc	16.9	24.9	6.7	2.5	3.7

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

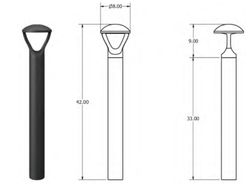


POLE LIGHT FIXTURE (LED)
LSI LIGHTING: V-LOCITY SMALL (VALS)

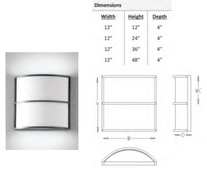


PATIO LIGHT FIXTURE (LED)
LSI LIGHTING: OPULANCE SMALL

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CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233



SIDEWALK BOLLARD FIXTURE (LED)
ZUMA LIGHTING



WALL MOUNT FIXTURE (LED)
INDESSA LIGHTING: 512



UNDER CANOPY (LED)
RAYON LIGHTING: RBC6-FN

STATE OF NEW HAMPSHIRE
BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03-12-26
PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: LIGHTING PLAN
SHEET No. C-105

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R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_LIGHTING.DWG



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

R: \PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_NEIGHBORHOOD PLAN.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER
03-12-26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = ##'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

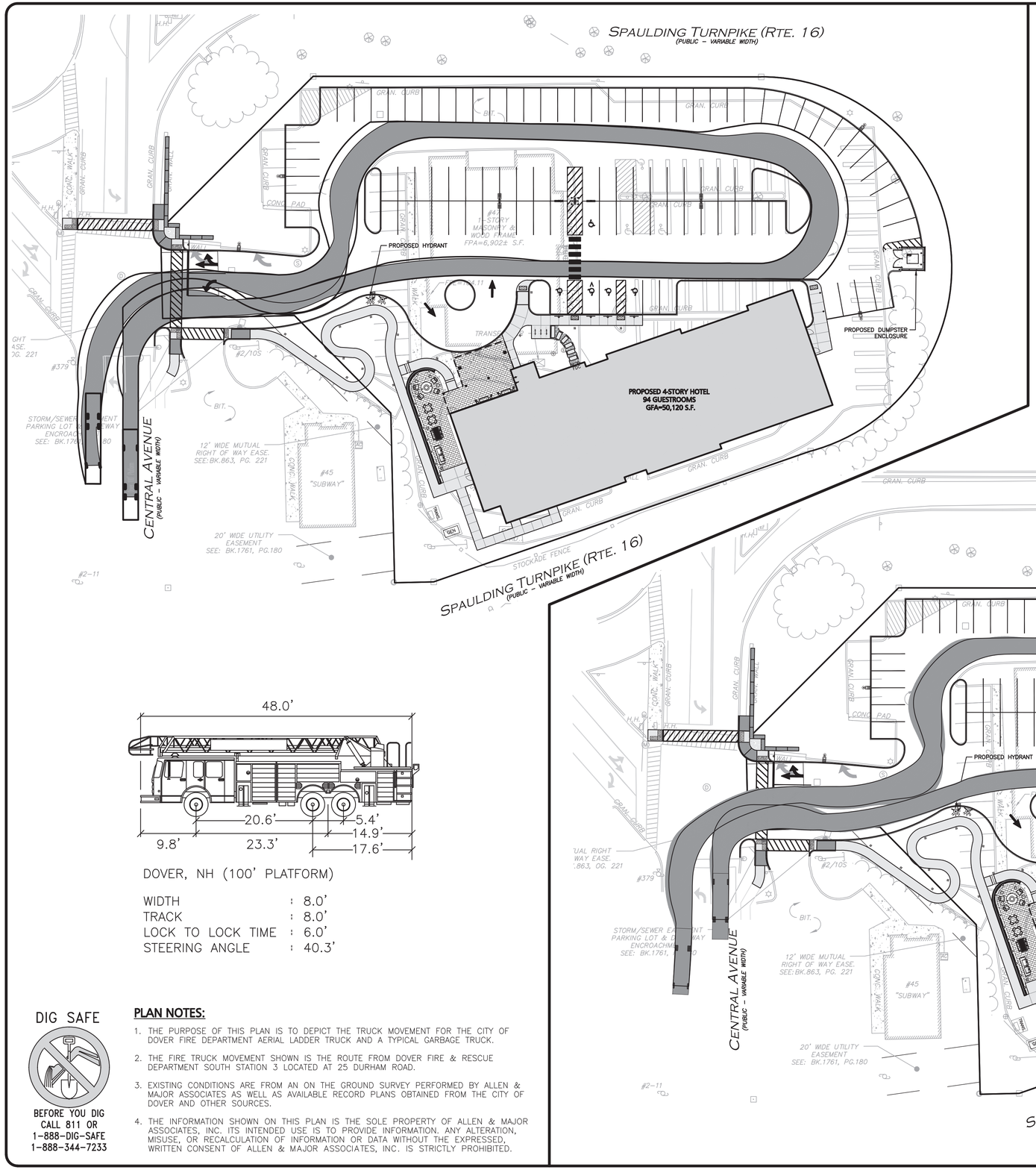
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environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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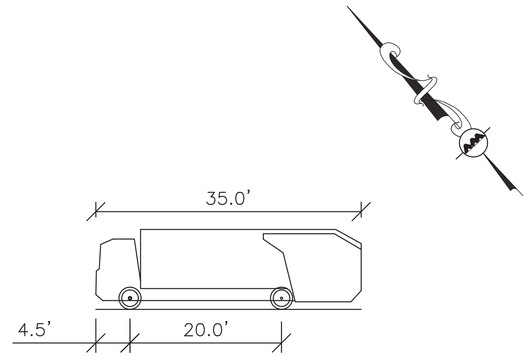
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DRAWING TITLE:
NEIGHBORHOOD PLAN

SHEET No.
C-106

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GARBAGE TRUCK

OVERALL LENGTH	: 35.0'
OVERALL WIDTH	: 8.4'
OVERALL BODY HEIGHT	: 10.5'
TRACK WIDTH	: 8.4'
LOCK–TO–LOCK TIME	: 6.0s
CURB TO CURB TURNING RADIUS	: 29.3'

DOVER, NH (100' PLATFORM)

WIDTH	: 8.0'
TRACK	: 8.0'
LOCK TO LOCK TIME	: 6.0'
STEERING ANGLE	: 40.3'

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

PLAN NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE TRUCK MOVEMENT FOR THE CITY OF DOVER FIRE DEPARTMENT AERIAL LADDER TRUCK AND A TYPICAL GARBAGE TRUCK.
2. THE FIRE TRUCK MOVEMENT SHOWN IS THE ROUTE FROM DOVER FIRE & RESCUE DEPARTMENT SOUTH STATION 3 LOCATED AT 25 DURHAM ROAD.
3. EXISTING CONDITIONS ARE FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
4. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

R: \PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_TRUCK TURNING.DWG

STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03-12-26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 30'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

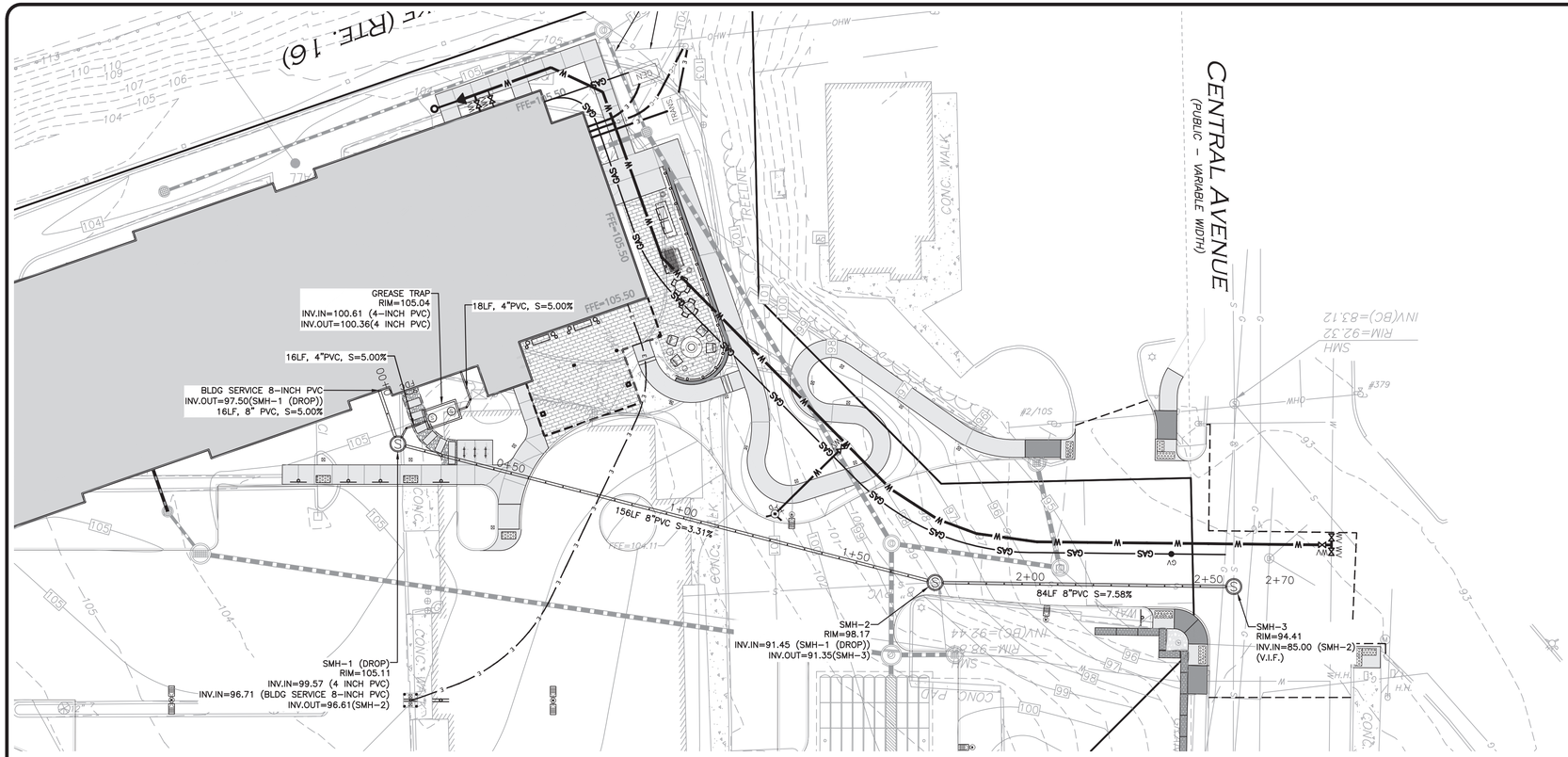
PREPARED BY:
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DRAWING TITLE:
TRUCK TURNING PLAN

SHEET No.
C-107

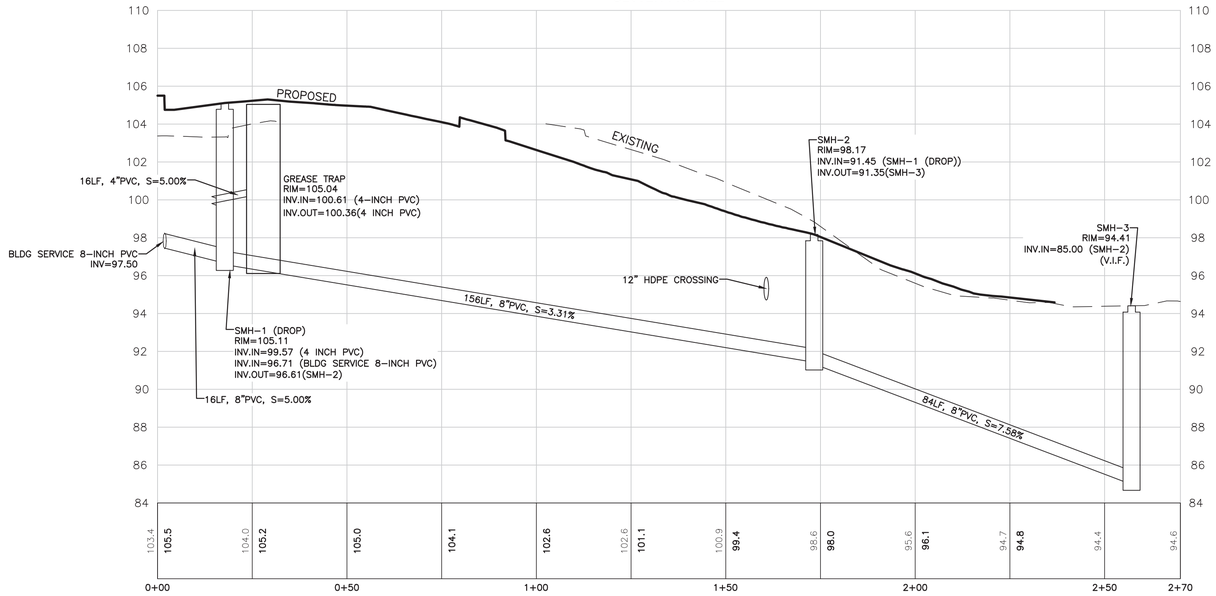
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LEGEND

SEWER MANHOLE	S
SEWER CLEANOUT	
SEWER VENT	V
SEWER LINE	
CONCRETE PIPE ENCASEMENT	
WATER LINE	W
WATER VALVE	WV
HYDRANT	
FIRE DEPARTMENT CONNECTION	FDC
WATER LINE REDUCER	
GAS LINE	GAS
GAS VALVE	GV
GREASE TRAP	
OVER HEAD WIRE	OHW
UTILITY POLE	
ELECTRICAL CONDUIT	E
TELE/CABLE CONDUIT	T/C

SEWER PROFILE



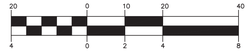
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1-888-DIG-SAFE
1-888-344-7233

PLAN NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SEWER PROFILE AND PROVIDE INFORMATION REGARDING THE SEWER STRUCTURES AND PIPES.
2. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

GRAPHIC SCALE



Horizontal: 1 inch = 20 ft.
Vertical: 1 inch = 4 ft.

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_UTILITIES.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES
No. 13809
LICENSED PROFESSIONAL ENGINEER
03-12-26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:

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11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES BY MARRIOTT

47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

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civil engineering ◆ land surveying
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MANCHESTER, NH 03103
TEL: (603) 627-5500
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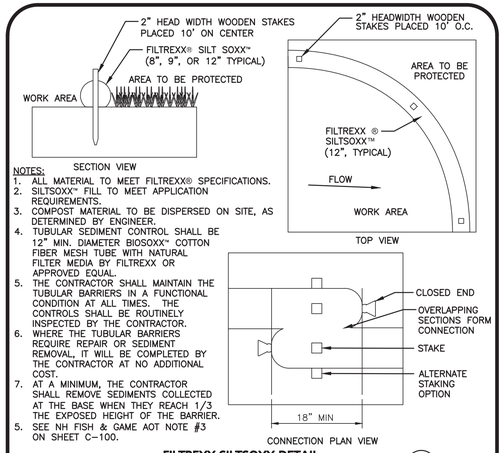
DRAWING TITLE:

SEWER PLAN & PROFILE

SHEET No.

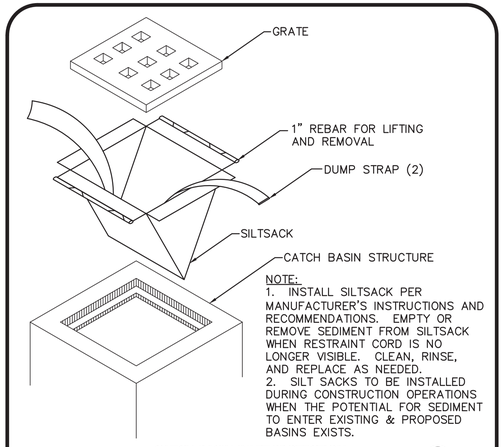
C-201

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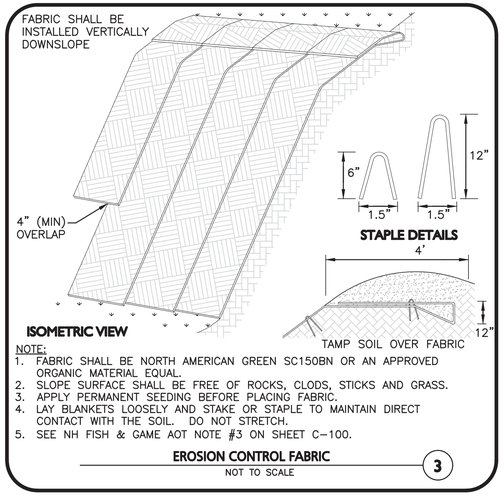
NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILTSOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. TUBULAR SEDIMENT CONTROL SHALL BE 12" MIN. DIAMETER BIOSOXX™ COTTON FIBER MESH TUBE WITH NATURAL FILTER MEDIA BY FILTREXX OR APPROVED EQUAL.
5. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
6. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
7. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.
5. SEE NH FISH & GAME AOT NOTE #3 ON SHEET C-100.

FILTREXX SILTSOXX DETAIL (1)
NOT TO SCALE



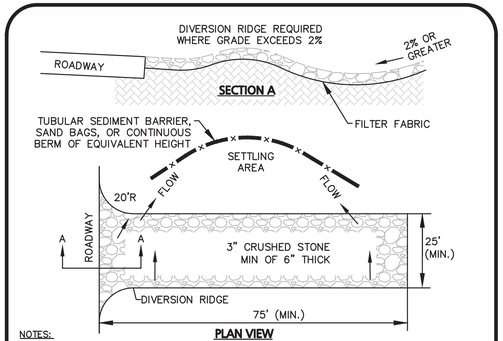
NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

CATCH BASIN INLET PROTECTION (2)
NOT TO SCALE



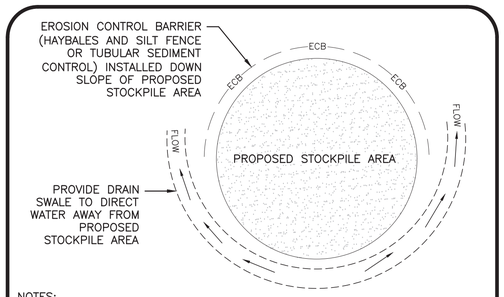
NOTE:
1. FABRIC SHALL BE NORTH AMERICAN GREEN SC150BN OR AN APPROVED ORGANIC MATERIAL EQUAL.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.
3. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. SEE NH FISH & GAME AOT NOTE #3 ON SHEET C-100.

EROSION CONTROL FABRIC (3)
NOT TO SCALE



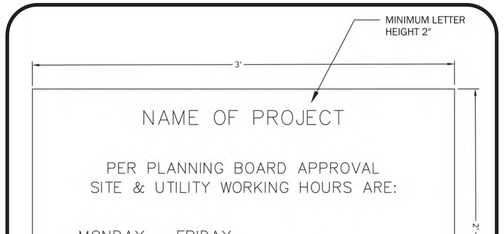
NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

STABILIZED CONSTRUCTION ENTRANCE (4)
NOT TO SCALE



NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 3LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCKPILE PROTECTION (5)
NOT TO SCALE



1. MINIMUM LETTER HEIGHT SHALL BE 2".
2. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND.
3. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND.
4. HOURS OF THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

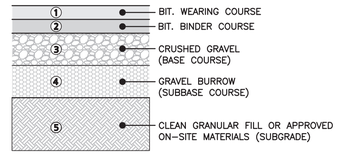
CONSTRUCTION SIGN (6)
NOT TO SCALE

FLEXIBLE PAVEMENT DESIGN SECTION

LAYER NUMBER	LAYER DESCRIPTION	LAYER THICKNESS (INCHES)
1	BITUMINOUS WEARING COURSE (¾" AGGREGATE – NHDOT PRE-APPROVED MIX DESIGN)	1.5"
2	BITUMINOUS BINDER COURSE (¾" AGGREGATE – NHDOT PRE-APPROVED MIX DESIGN)	2.0"
3	CRUSHED GRAVEL (BASE COURSE) (NHDOT ITEM 304.3)	6"
4	GRAVEL BORROW (SUBBASE COURSE) (NHDOT ITEM 304.2)	12"
5	CLEAN GRANULAR FILL MATERIAL OR APPROVED ON-SITE MATERIALS (SUBGRADE)	AS NECESSARY

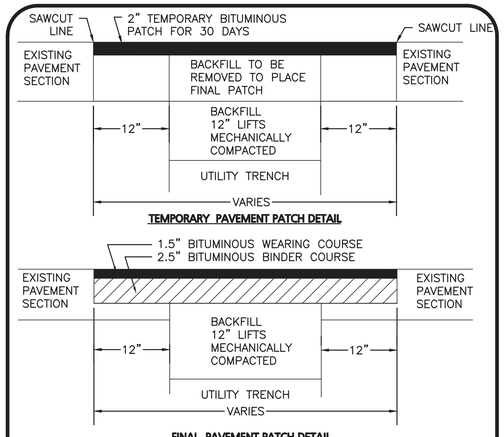
TABLE 304-1: NHDOT GRADATION SPECIFICATIONS

SIEVE SIZE	PERCENT PASSING BY WEIGHT		
	BASE COURSE	SUBBASE COURSE	SELECT GRANULAR FILL
3"	100	–	70–100
2"	95–100	–	–
1½"	–	–	–
¾"	55–85	–	–
No. 4	27–52	25–70	25–80
No. 200	0–12	0–12	0–12

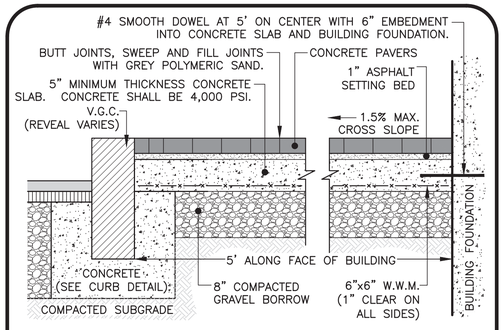


NOTES:
1. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ANY RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER.
2. TOPSOIL SHALL BE REMOVED BENEATH ALL PAVEMENT AREAS TO EXPOSE THE NATURALLY-OCCURRING SOILS OR ACCEPTABLE ON-SITE FILL MATERIALS.
3. THE SUBGRADE SHOULD BE PROOFROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER USING AT LEAST 4 PASSES OF A 10-TON VIBRATORY ROLLER. AREAS OF THE SUBGRADE THAT 'WEAVE' OR 'ROLL' EXCESSIVELY SHOULD BE OVEREXCAVATED AND REPLACED WITH DRIER CLEAN GRANULAR FILL MATERIAL.
4. THE PAVEMENT SUBGRADE CONSISTING OF THE SPECIFIED CLEAN GRANULAR FILL SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM DESIGNATION D-1557.

PAVEMENT SECTION (7)
NOT TO SCALE

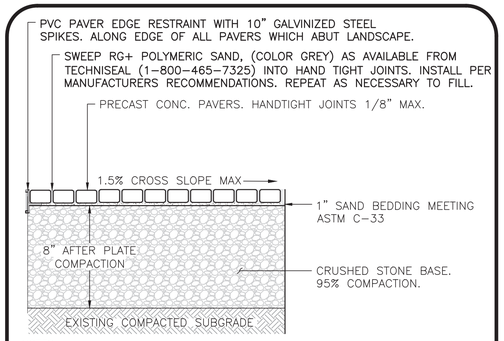


PAVEMENT TRENCH PATCH DETAIL (8)
NOT TO SCALE



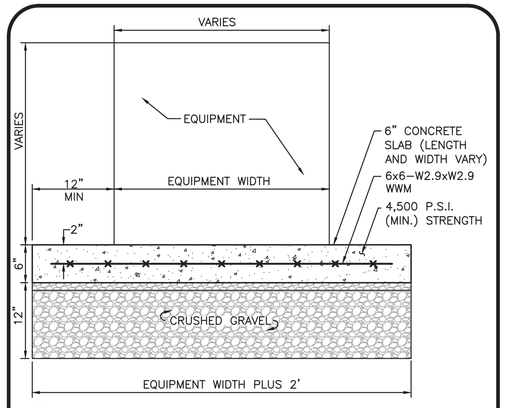
NOTES:
1. UNLOCK PRECAST CONCRETE PAVER MODEL: HOLLANDSTONE (4" X 8" X 2 3/8") OR SIMILAR. HAND-TIGHT JOINTS 1/8" MAX. COLOR TO BE SELECTED BY OWNER. PROVIDE SAMPLES AND SHOP DRAWINGS OF PAVERS TO OWNER FOR APPROVAL PRIOR TO ORDERING.
2. SUBMIT SAMPLES & SHOP DRAWING OF PAVERS AND COLOR CHART FOR APPROVAL PRIOR TO ORDERING.
3. SUBMIT SHOP DRAWING FOR APPROVAL OF SAND & CRUSHER RUN SIEVE ANALYSIS PRIOR TO ORDERING.

CONCRETE PAVERS SIDEWALK AREA (9)
NOT TO SCALE



NOTES:
1. PAVERS TO BE UNILOCK ARTLINE OR EQUAL,
2. SUBMIT SAMPLES & SHOP DRAWING OF PAVERS AND COLOR CHART FOR APPROVAL PRIOR TO ORDERING.
3. SUBMIT SHOP DRAWING FOR APPROVAL OF SAND & CRUSHER RUN SIEVE ANALYSIS PRIOR TO ORDERING.

CONCRETE PAVERS AT PATIO AREA (10)
NOT TO SCALE



NOTE:
1. CONFIRM DIMENSIONS WITH GENEROTOR SUPPLIER PRIOR TO CONSTRUCTION.
2. REFER TO MEP DRAWINGS FOR ANY PIPE, CONDUIT AND GROUND WIRE LOCATIONS

GENERATOR PAD (11)
NOT TO SCALE

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: DETAILS

SHEET No. C-501

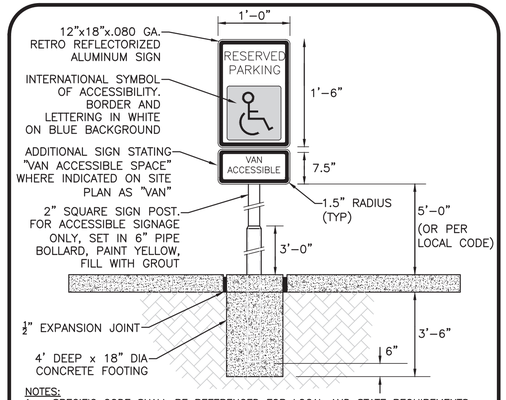
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MUTCD NUMBER	SIGN	SIZE (MIN)	MOUNTING HEIGHT	DESCRIPTION	RETRO-FLECTIVE
R1-1	STOP	30"x30"	7' - 0"	WHITE ON RED	YES
R7-8(M) (MODIFIED)	RESERVED PARKING / VAN ACCESSIBLE	12"x24"	7' - 0"	RED ON WHITE	YES
R7-8	RESERVED PARKING	12"x18"	7' - 0"	GREEN & BLUE ON WHITE	YES

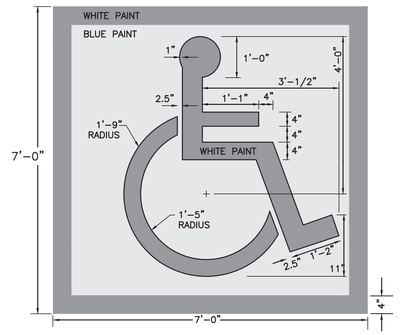
NOTES:
1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH MUTCD STANDARDS.
2. WHERE APPLICABLE THE SIGN SUPPORT SHALL COMPLY WITH THE BREAKAWAY REQUIREMENTS OF THE LATEST EDITION OF AASHTO'S "SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRIES, AND TRAFFIC SIGNALS".

SIGN TABLE (1)
NOT TO SCALE



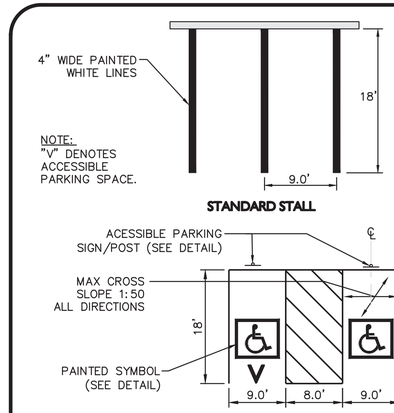
NOTES:
1. SPECIFIC CODE SHALL BE REFERENCED FOR LOCAL AND STATE REQUIREMENTS.
2. PROVIDE (1) SIGN PER ACCESSIBLE SPACE. SEE SITE PLAN FOR EXACT LOCATION.
3. EXPANSION JOINT MATERIAL NOT REQUIRED WITH FLEXIBLE PAVEMENT.

ACCESSIBLE PARKING SIGN POST (2)
NOT TO SCALE



SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

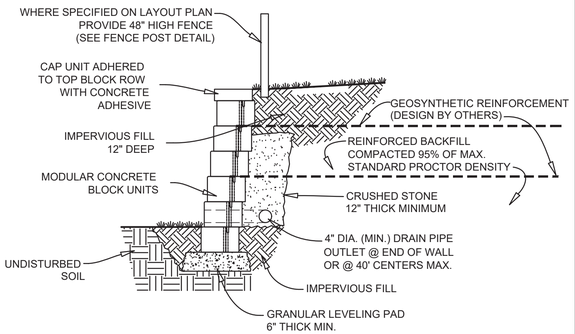
ACCESSIBLE PARKING STALL PAVEMENT MARKING (3)
NOT TO SCALE



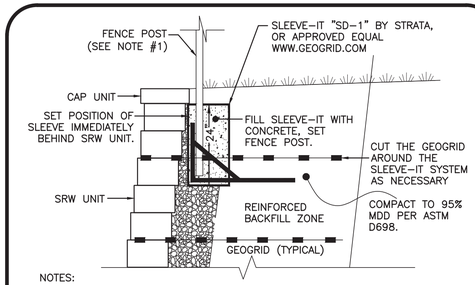
ACCESSIBLE & STANDARD PARKING STRIPING (4)
NOT TO SCALE

NOTES:

1. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE STRUCTURAL DESIGN OF THE MODULAR BLOCK RETAINING WALLS. REFER TO GEOTECHNICALREPORT FOR SOIL DESIGN PARAMETERS
2. WALLS THREE FEET OR GREATER IN HEIGHT SHALL BE DESIGNED BY A NEW HAMPSHIRE REGISTERED PROFESSIONAL STRUCTURAL ENGINEER.
3. STAMPED WALLS DESIGNS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE CITY OF DOVER BUILDING DEPARTMENT.
4. WALL DESIGNS AND CALCULATIONS SHALL BE PROVIDED TO THE PROJECT GEOTECHNICAL ENGINEER TO CONFIRM THAT GEOTECHNICAL RECOMENDATIONS HAVE BEEN PROPERLY INCLUDED.
5. WALL DESIGNS AND CALCULATIONS SHALL BE PROVIDED TO THE PROJECT CIVIL ENGINEER TO CONFIRM ELEVATIONS AND ALIGNMENT HAVE BEEN PROPERLY INCLUDED.
6. SMALL BLOCK UNITS SHALL BE THE SQUARE FOOT PRODUCT BY VERSA-LOK OR APPROVED EQUAL.
7. WALL HEIGHT WITHOUT REINFORCEMENT SHALL BE LIMITED TO 3' EXPOSED FACE.
8. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. REFER TO GEOTECHNICAL ENGINEER'S REPORT FOR SUBGRADE PREPARATION CRITERIA.



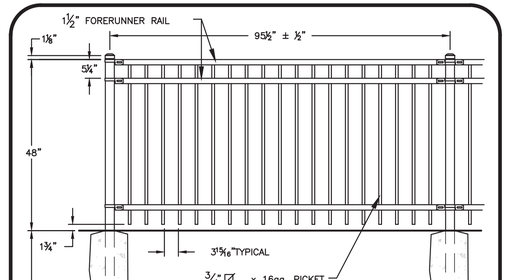
TYPICAL "SMALL BLOCK" RETAINING WALL (5)
NOT TO SCALE



NOTES:

1. FENCE POSTS SHALL BE FOR A 48" HIGH, BLACK VINYL COATED CHAIN LINK FENCE.
2. INSTALL SLEEVE-IT DURING THE CONSTRUCTION OF THE SEGMENTAL BLOCK RETAINING WALL.
3. GEO-GRID SHALL ONLY BE CUT AS ALLOWED BY THE STRUCTURAL ENGINEER FOR THE SEGMENTAL BLOCK RETAINING WALL.
4. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

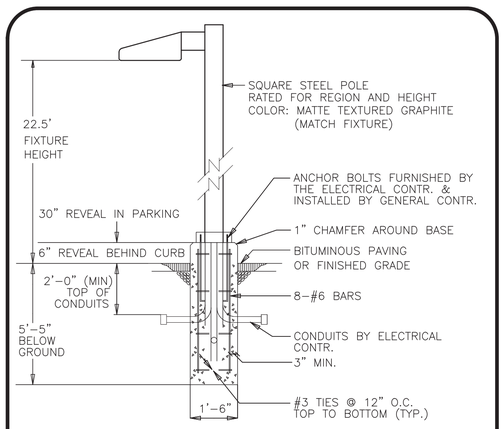
FENCE POST AT TOP OF BLOCK RETAINING WALL (6)
NOT TO SCALE



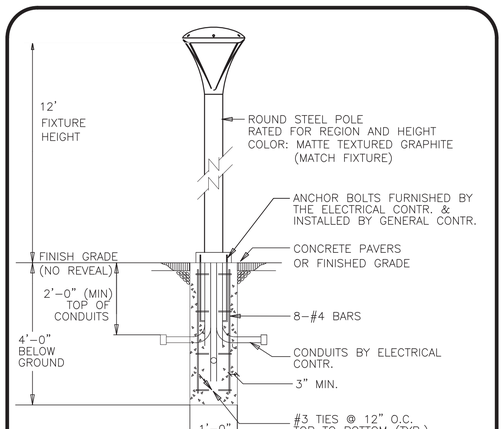
AMERISTAR®
1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422

NOTES:
1. FENCE MATERIAL SHALL BE AMERISTAR, AEGIS PLUS MAJESTIC, COLOR BLACK.
2. POST SIZE SHALL BE PER AEGIS PLUS SIZING CHART

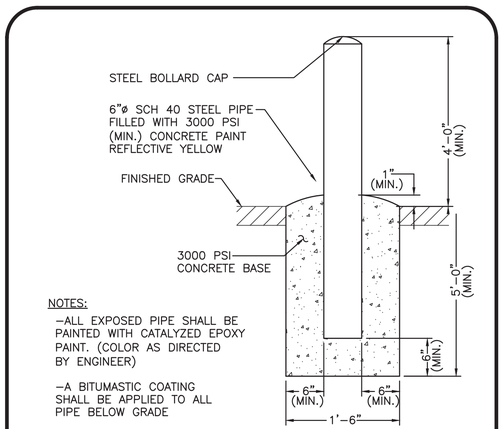
48" HIGH DECORATIVE STEEL FENCE (7)
NOT TO SCALE



PRE-CAST LIGHT POLE BASE - 22.5' FIXTURE HEIGHT (8)
NOT TO SCALE

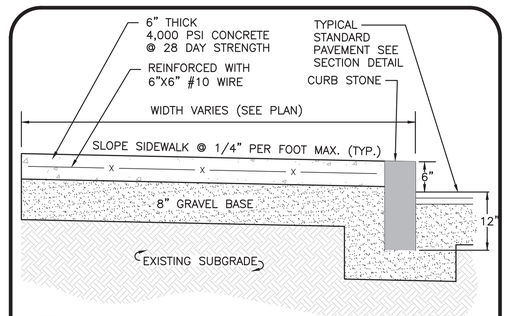


PRE-CAST LIGHT POLE BASE - 12' FIXTURE HEIGHT (9)
NOT TO SCALE



NOTES:
-ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY ENGINEER)
-A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

FIXED PIPE BOLLARD (11)
NOT TO SCALE



NOTES:
1. MAXIMUM SIDEWALK LONGITUDINAL SLOPE IS 4.5%.
2. MAXIMUM SIDEWALK CROSS SLOPE IS 1.5%
3. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' X 5' (TYP) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER.
4. TOOLED JOINT 6" FROM FACE OF CURB.
5. SEE PLAN FOR ELEVATIONS AT CURB.
6. LIFT WWF TO CENTER OF SLAB WITH HOOKS AFTER CONCRETE PLACEMENT.
7. DOWEL SIDEWALK INTO FOUNDATION AT DOORS.

CONCRETE SIDEWALK WITH VERTICAL GRANITE CURB (12)
NOT TO SCALE

R:\PROJECTS\1173-31\CIVIL\DRAWINGS\CURRENT\C-1173-31_DETAILS.DWG

STATE OF NEW HAMPSHIRE
BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03.12.26

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

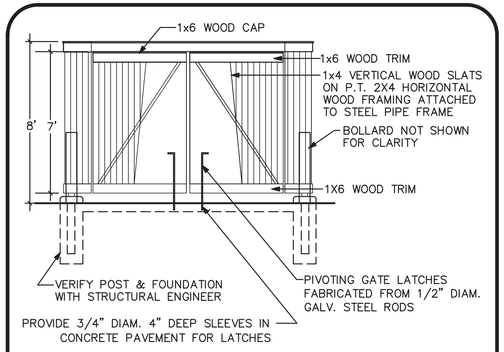
PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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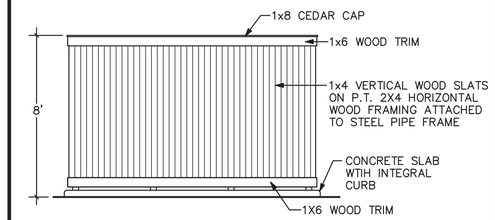
DRAWING TITLE: DETAILS
SHEET No. C-502

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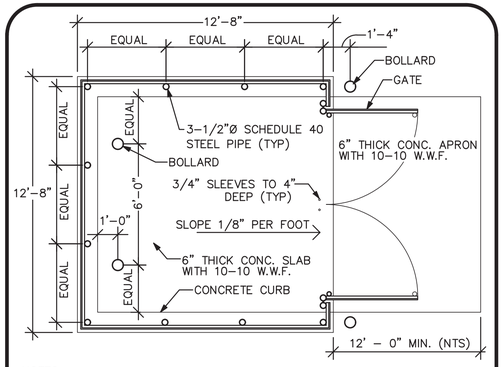
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE GATE (1)
NOT TO SCALE



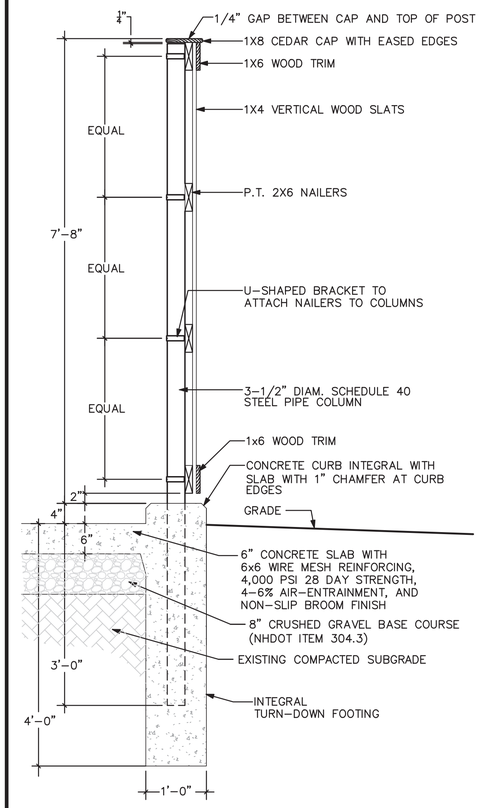
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE ELEVATION (2)
NOT TO SCALE



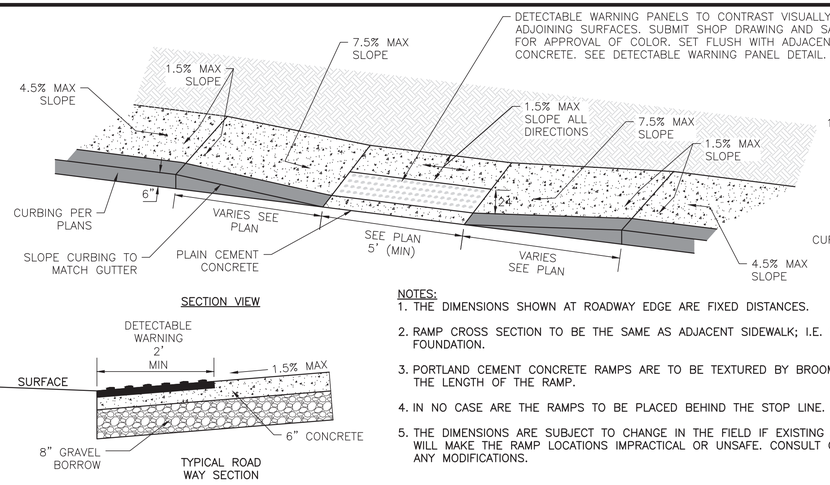
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE PLAN VIEW (3)
NOT TO SCALE



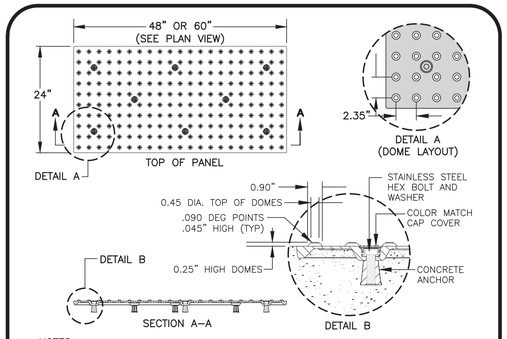
NOTES:
1. THIS DETAIL HAS BEEN PROVIDED BY TOWNEPLACE SUITES BY MARRIOT DESIGN GUIDLINES AND IS PROTOTYPICAL.
2. ALL WOOD TO BE FINISHED PER ARCHITECT/OWNER REQUIREMENTS.

TRASH ENCLOSURE SECTION (5)
NOT TO SCALE



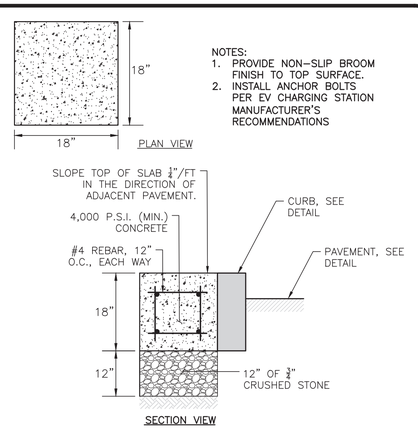
NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

ADA ACCESSIBLE CURB CUT AND TRANSITION (4)
NOT TO SCALE



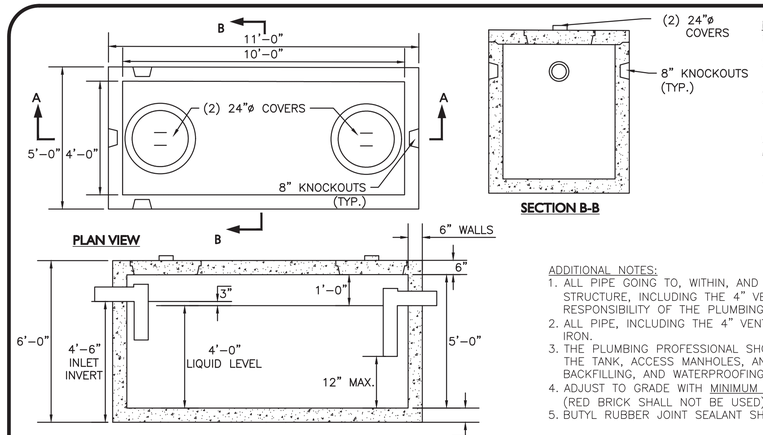
NOTES:
1. VENDOR INFORMATION: "ADATILE" WET SET ADA REPLACEABLE TACTILE (OR APPROVED EQUAL) AS MANUFACTURED BY ADATILE, PHONE: 1-800-372-0519, WWW.ADATILE.COM, EMAIL: INFO@ADATILE.COM
2. COLOR SHALL BE BLACK.
3. INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES.

WET SET ADA REPLACEABLE TACTILE PANEL (6)
NOT TO SCALE



NOTES:
1. PROVIDE NON-SLIP BROOM FINISH TO TOP SURFACE.
2. INSTALL ANCHOR BOLTS PER EV CHARGING STATION MANUFACTURER'S RECOMMENDATIONS

CONCRETE PAD FOR EV CHARGING STATION (7)
NOT TO SCALE



MANUFACTURER'S NOTES:
1. CONCRETE: 5,000 PSI MINIMUM STRENGTH @ 28 DAYS.
2. STEEL REINFORCING-ASTM A-615, GRADE 60.
3. COVER TO STEEL-1" MINIMUM.
4. TANKS ARE DESIGNED TO MEET ASTM C858 AND ACI 318 WITH ASHHTO HS-20 LOADING.
5. EARTH COVER: 1 TO 5 FEET MAX.
6. CONSTRUCTION JOINT SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVILENT.
7. APPROX. WEIGHTS: TOP SLAB = 2.3 TONS; BOTTOM SECTION = 8.5 TONS.

ADDITIONAL NOTES:
1. ALL PIPE GOING TO, WITHIN, AND TO 10 FEET BEYOND THE CONCRETE STRUCTURE, INCLUDING THE 4" VENT PIPE, SHALL BE THE RESPONSIBILITY OF THE PLUMBING PROFESSIONAL.
2. ALL PIPE, INCLUDING THE 4" VENT PIPE TO THE ROOF, SHALL BE CAST IRON.
3. THE PLUMBING PROFESSIONAL SHOULD COORDINATE INSTALLATION OF THE TANK, ACCESS MANHOLES, AND DETAILS OF EXCAVATION, BACKFILLING, AND WATERPROOFING WITH THE CIVIL ENGINEER.
4. ADJUST TO GRADE WITH MINIMUM 12" OF CONCRETE BRICK AND MORTAR (RED BRICK SHALL NOT BE USED).
5. BUTYL RUBBER JOINT SEALANT SHALL BE USED AT ALL JOINTS.

GREASE TRAP (1,000 GAL) (8)
NOT TO SCALE

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STATE OF NEW HAMPSHIRE - BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03.12.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

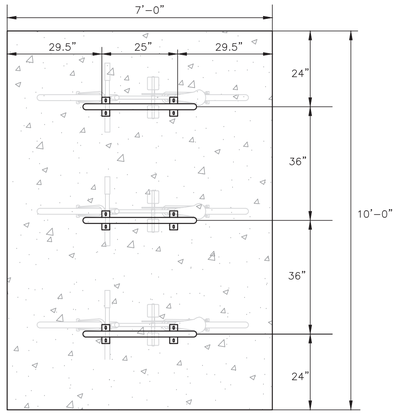
PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

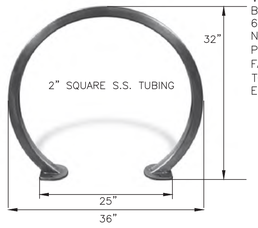
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DRAWING TITLE: DETAILS
SHEET No. C-503

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PLAN VIEW

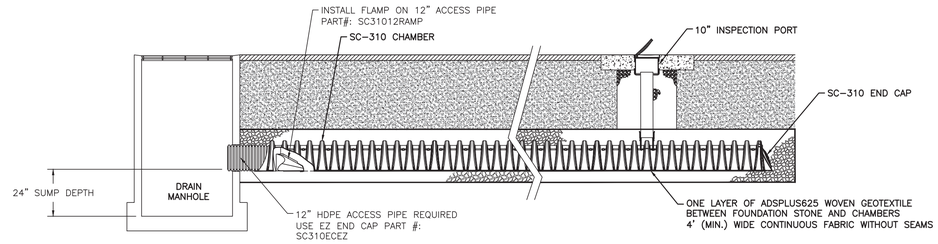


VENDOR INFORMATION:
BELSON OUTDOORS, LLC
627 AMERSALE DRIVE
NAPERVILLE, IL 60563
PHONE:(630) 897-8489
FAX:(630) 897-0573
TOLL FREE:(800) 323-5664
EMAIL: SALES@BELSON.COM

NOTES:

1. MODEL: CBBR-2CS-SS
2. THREE (3) RINGS TOTAL
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
4. SPACE RINGS 36" ON CENTER.

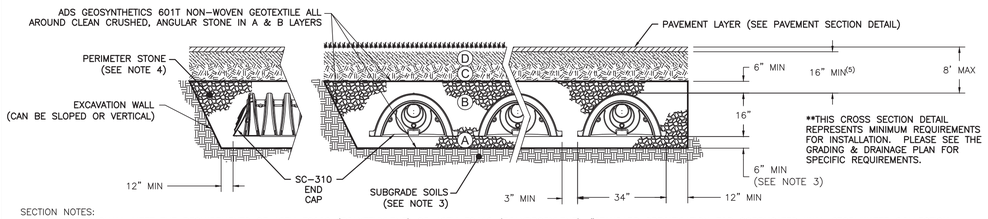
BICYCLE RACK (1)
NOT TO SCALE



STORMTECH SC-310 ISOLATOR PLUS ROW (2)
NOT TO SCALE

	MATERIAL LOCATION	DESCRIPTION	AASHTO CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	SEE PAVEMENT SECTION DETAIL FOR REQUIREMENTS.	3.25	DRY DENSITY OF AT LEAST 95 PERCENT AS DETERMINED BY ASTM DESIGNATION D-1557 (SEE PAVEMENT SECTION DETAIL FOR ADDITIONAL INFORMATION)
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 16" (400 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2][3]

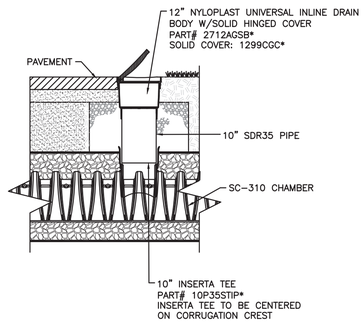
TABLE NOTES:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SECTION NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER SHALL BE NOTIFIED WHEN A "BOTTOM BED" INSPECTION IS READY. THE FABRIC, STONE, AND CHAMBERS AND CHAMBERS SHALL NOT BE PLACED WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 22"

NOTES FOR CONSTRUCTION EQUIPMENT:
1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 CHAMBERS IS LIMITED:
   A. NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   B. NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
   C. WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
3. FULL 36" OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
4. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
5. CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

STORMTECH SC-310 CROSS SECTION (3)
NOT TO SCALE



NOTE: THE PART# 2712AG10IPKIT CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

STORMTECH SC-310 10" INSPECTION PORT (4)
NOT TO SCALE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT

A. INSPECTION PORTS (IF PRESENT)
   A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
   A.2. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
   A.3. IF SEDIMENT IS AT, OR ABOVE, 3" PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

B. ALL ISOLATOR PLUS ROWS
   B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
   B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
      i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
      ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
   B.3. IF SEDIMENT IS AT, OR ABOVE, 3" PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
   A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° OR MORE IS PREFERRED
   B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
   C. VACUUM STRUCTURE SUMP AS REQUIRED

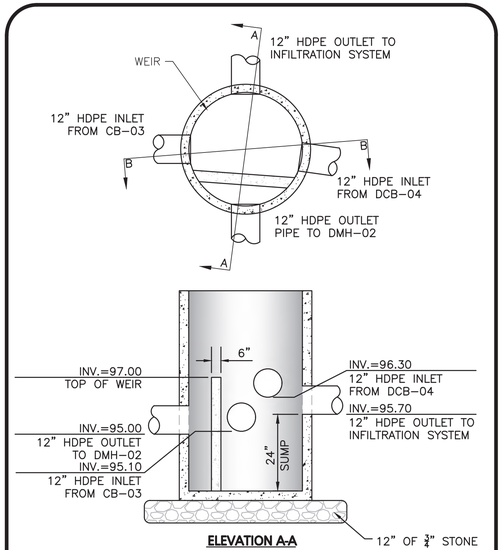
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

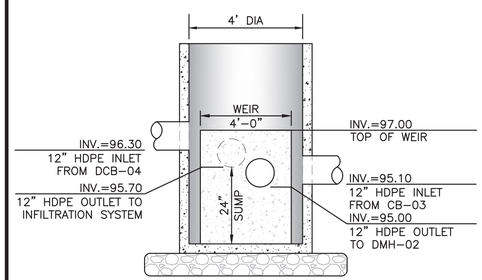
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

STORMTECH SC-310 INSPECTION AND MAINTENANCE (5)
NOT TO SCALE



ELEVATION A-A



ELEVATION B-B

NOTES:
SEE CITY OF DOVER DRAIN MANHOLE DETAIL FOR ADDITIONAL INFORMAITON.

4' DIAMETER OUTLET CONTROL STRUCTURE (6)
NOT TO SCALE

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

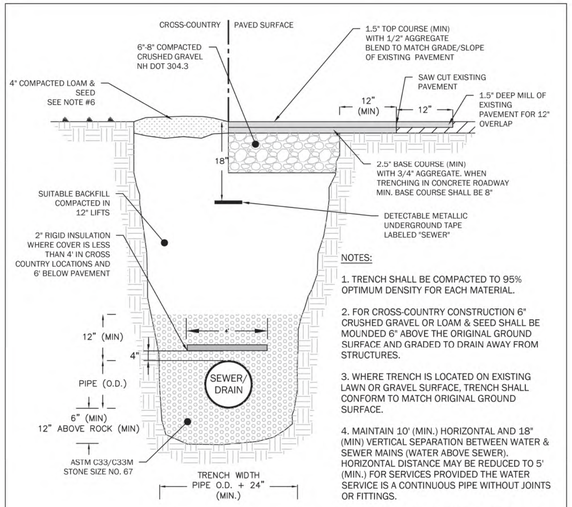
PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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SHEET No. C-504

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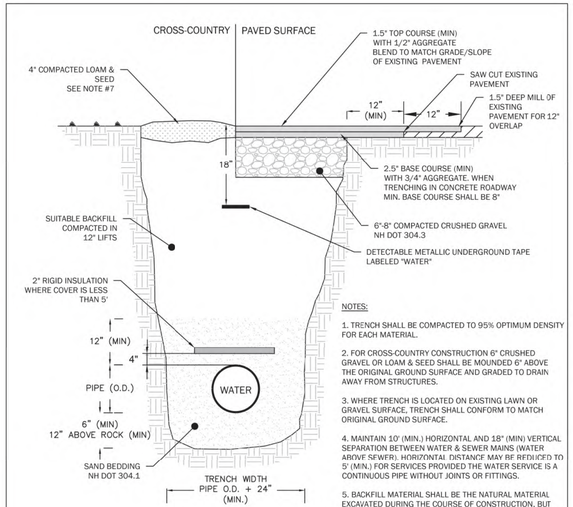
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NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE AND GRADED TO DRAIN AWAY FROM STRUCTURES.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

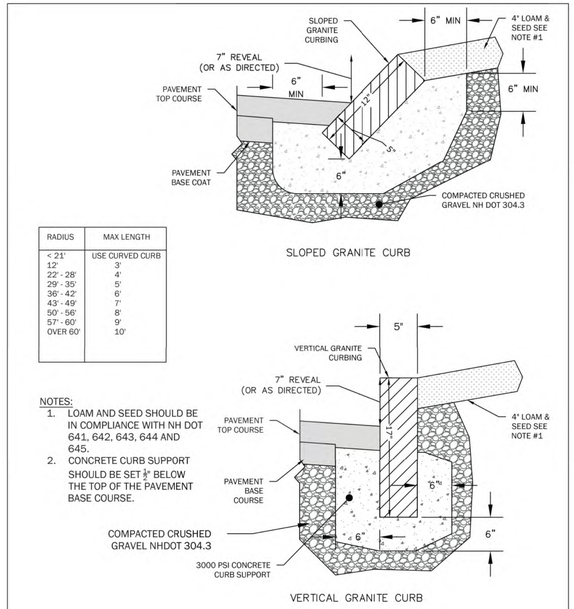
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-3	SEWER/DRAIN TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
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5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPRCVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-4	WATER TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

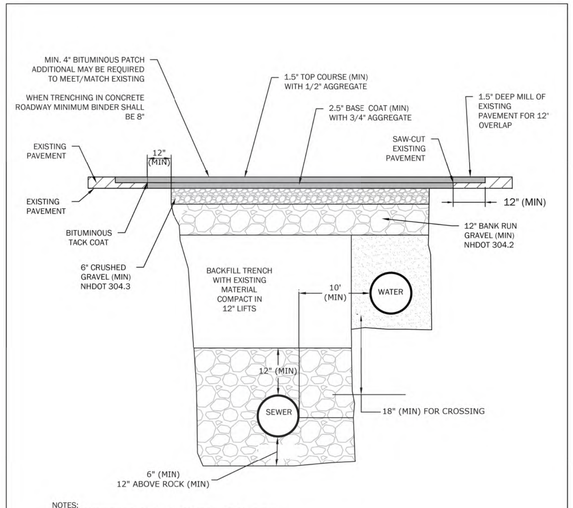


RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:

1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ¼" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

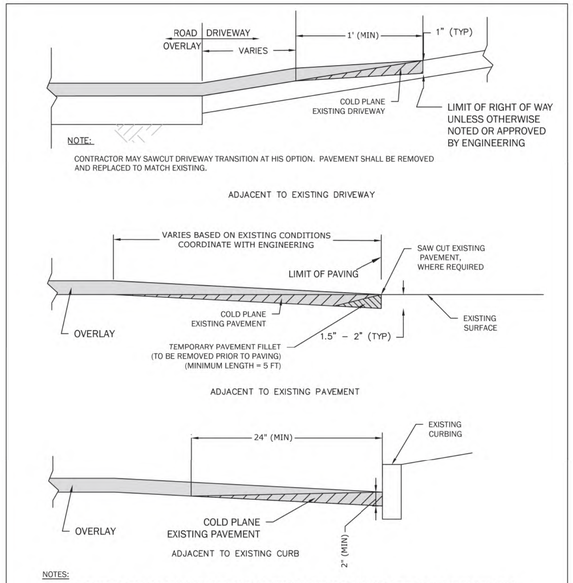
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-8	GRANITE CURB	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-10	TYPICAL TRENCH	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



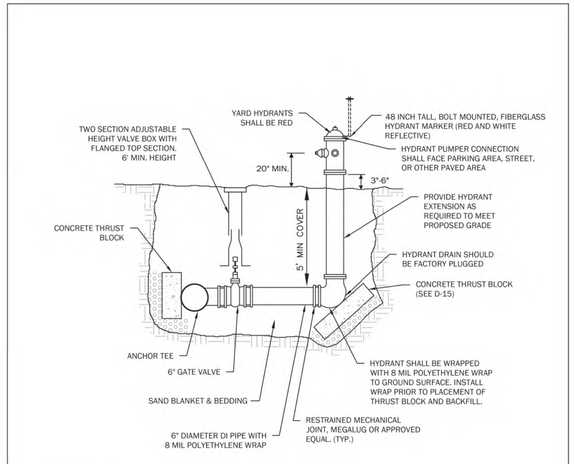
NOTE:

CONTRACTOR MAY SAWCUT DRIVEWAY TRANSITION AT HIS OPTION. PAVEMENT SHALL BE REMOVED AND REPLACED TO MATCH EXISTING.

NOTES:

1. THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-12	PAVEMENT OVERLAY	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:

1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.
4. HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E-ZGUIDE PRODUCTS OR APPROVED EQUAL.
5. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD WATER TRENCH DETAIL D-4.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D-14	FIRE HYDRANT	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

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BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
03.12.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:

ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:

LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:

TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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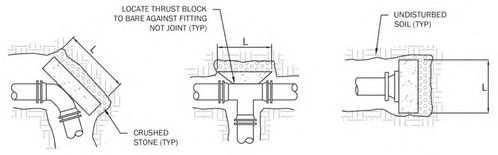
DRAWING TITLE:

CITY OF DOVER STANDARD DETAILS

SHEET No.

C-505

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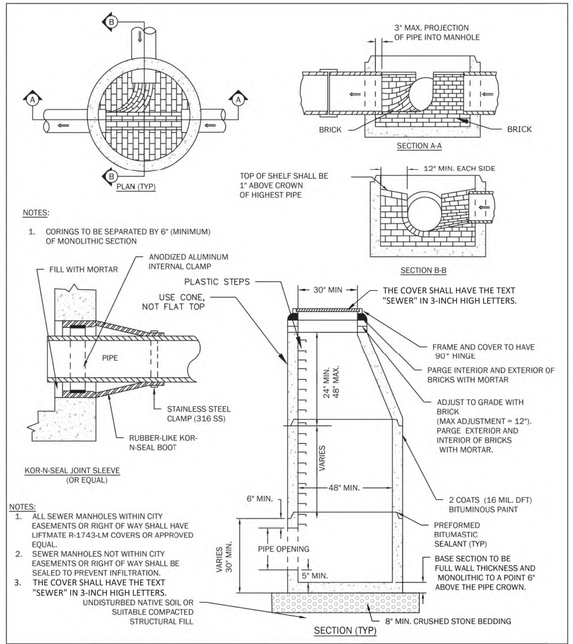


THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	SYSTEM PRESSURE: 125 PSI SAFETY FACTOR: 1.5 SOIL BEARING CAPACITY: 2,000 PSF					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

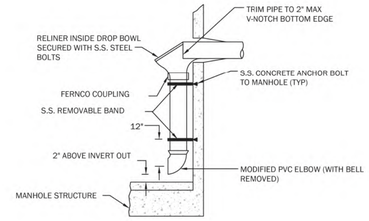
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–15	CONCRETE THRUST BLOCK	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

NOTES:
1. ALL SEWER MANHOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
2. SEWER MANHOLES NOT WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL BE SEALED TO PREVENT INFILTRATION.
3. THE COVER SHALL HAVE THE TEXT "SEWER" IN 3-INCH HIGH LETTERS.

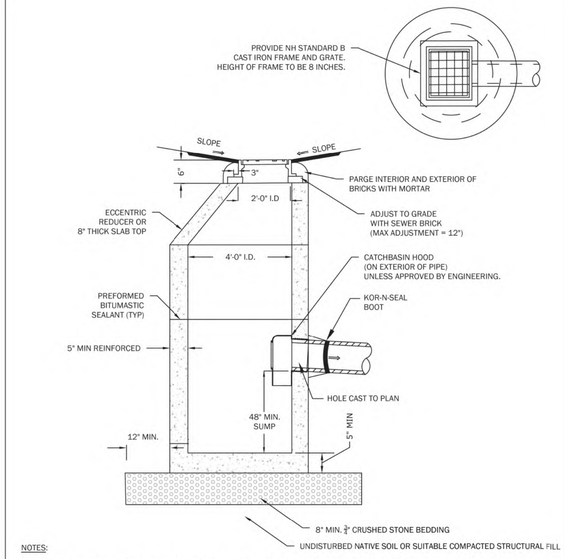
SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–16	SEWER MANHOLE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



INTERNAL DROP

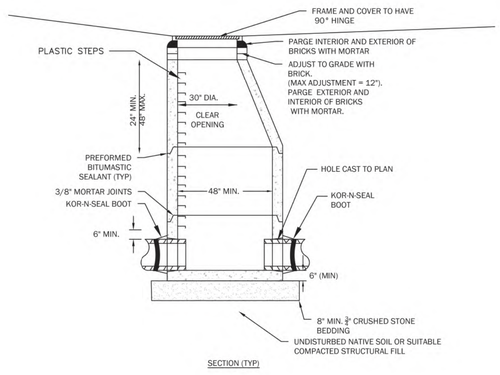
NOTES:
1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
2. A MINIMUM 5 FT DIAMETER MANHOLE IS REQUIRED FOR AN INTERNAL DROP.
3. IF A DROP IS PROPOSED FOR AN EXISTING MANHOLE, THE BRICK SHELF SHALL BE REWORKED TO FORM A NEW CHANNEL FOR NEW DROP CONNECTIONS. IF STRUCTURE IS LESS THAN 5 FT IN DIAMETER, A NEW PRECAST MANHOLE SHALL BE INSTALLED.
3. BRICK INVERT NOT SHOWN ON DETAIL.
4. EXTERNAL DROPS ARE NOT PERMITTED UNLESSED AUTHORIZED IN WRITING BY COMMUNITY SERVICES.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–18	MANHOLE DROP INLET	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



NOTES:
1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.
2. CONTRACTOR SHALL HAVE OPTION TO USE 6" OR 8" PRECAST GRADE RINGS TO ADJUST GRADE.

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–19	CATCHBASIN	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		



SECTION (TYP)

NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

SHEET NO.	STANDARD DETAILS NOT TO SCALE	CITY OF DOVER, NH
D–20	DRAIN MANHOLE	COMMUNITY SERVICES ENGINEERING DIVISION 288 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE 03820 TELEPHONE: (603) 516-6450 FAX: (603) 516-6483
REVISED: April 2025		

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STATE OF NEW HAMPSHIRE – BRIAN D. JONES No. 13809 LICENSED PROFESSIONAL ENGINEER
03.12.26

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	PER REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	C-1173-31
DESIGNED BY:	BDJ	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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DRAWING TITLE:
CITY OF DOVER STANDARD DETAILS

SHEET No.
C-506

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SECTION 33 36 00 - SANITARY SEWER SYSTEMS

PART 1 GENERAL

1.01 PRODUCTS

A. GENERAL: MATERIALS SHALL BE AS SPECIFIED HEREIN, EXCEPT THAT CONSIDERATION SHALL BE GIVEN TO OTHER PRODUCTS THAT MEET OR EXCEED THOSE SPECIFIED IF REQUESTED TEN (10) DAYS PRIOR TO DATE OF BID OPENING, IN ACCORDANCE WITH THE GENERAL CONDITIONS.

1.02 DESCRIPTION:

A. THE WORK UNDER THIS SECTION SHALL INCLUDE THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT AND SUPPLIES AND THE PERFORMANCE OF ALL OPERATIONS TO PROVIDE A COMPLETE WORKING SYSTEM AS REQUIRED BY THE DRAWINGS AND DETAILS AND AS SPECIFIED HEREIN, IN GENERAL, TO INCLUDE THE FOLLOWING ITEMS:

1. SANITARY SEWER SYSTEM FROM 5 FEET OUTSIDE THE BUILDING TO POINT OF TERMINATION AS SHOWN ON THE DRAWINGS.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE LOCAL DEPARTMENT OF PUBLIC WORKS AND NHDES.

1.03 RELATED WORK:

A. SECTION 31 23 00 – EARTHWORK.

B. SECTION 15401 – PLUMBING.

1.04 RELATED DOCUMENTS:

A. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE MUNICIPALITY.

B. ALL WORK FOR ITEMS NOT OTHERWISE COVERED BY 1.03.A ABOVE SHALL CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION (LATEST EDITION).

C. ALL WORK SHALL CONFORM TO THE PERMITS ISSUED BY THE STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.

1.05 PROJECT CONDITIONS:

A. KNOWN UNDERGROUND AND SURFACE UTILITY LINES ARE INDICATED ON THE DRAWINGS. INFORMATION ON THE DRAWINGS RELATING TO EXISTING UTILITY LINES AND SERVICES IS FROM THE BEST SOURCE PRESENTLY AVAILABLE. ALL SUCH INFORMATION IS FURNISHED ONLY FOR INFORMATION AND IS NOT GUARANTEED. COORDINATE WITH UTILITY COMPANIES, DIG SAFE AND THEIR CONTRACTORS, AND EXCAVATE TEST PITS AS REQUIRED TO DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES.

B. TEST BORINGS HAVE BEEN PERFORMED BY OWNER'S SEPARATE CONTRACTOR. LOCATIONS OF TEST BORINGS ARE SHOWN ON THE DRAWINGS. NEITHER THE OWNER NOR THE ENGINEERS MAKE WARRANTY, EITHER EXPRESSED OR IMPLIED, OF ACCURACY OF BORING DATA AS A REPRESENTATION OF TYPICAL CONDITIONS. THE CONTRACTOR SHALL MAKE HIS/HER OWN INVESTIGATION OF SUBSURFACE CONDITIONS AND SATISFY HER/HIMSELF AS TO CONDITION THEREOF AND SHALL BASE HIS/HER BID IN SOLE RELIANCE THEREON. SUCH INVESTIGATION MAY INCLUDE, BUT IS NOT NECESSARILY LIMITED TO: ADDITIONAL TEST PITS, BORINGS. NO ALLOWANCE WILL BE MADE FOR THE CONTRACTOR'S FAILURE TO PERFORM INVESTIGATION NECESSARY TO FULLY IDENTIFY AND SATISFY HIM/HERSELF AS TO SUBSURFACE CONDITIONS WHICH COULD AFFECT THE WORK.

C. PROTECT EXCAVATIONS BY SHORING, BRACING, SHEETING, UNDERPINNING, OR OTHER METHODS, AS REQUIRED TO PREVENT CAVE-INS OR LOOSE DIRT FROM ENTERING EXCAVATIONS. BARRICADE OPEN EXCAVATIONS AND POST WARNING LIGHTS AT WORK ADJACENT TO PUBLIC STREETS AND WALKS.

D. UNDERPIN ADJACENT STRUCTURE(S), INCLUDING UTILITY SERVICE LINES, WHICH MAY BE DAMAGED BY EXCAVATION OPERATIONS.

E. PROMPTLY REPAIR DAMAGE TO ADJACENT FACILITIES CAUSED BY SITE SEWER AND DRAINAGE OPERATIONS.

F. PROMPTLY NOTIFY THE OWNER OF UNEXPECTED SUB-SURFACE CONDITION

1.06 QUALITY ASSURANCE:

A. STANDARDS: COMPLY WITH STANDARDS SPECIFIED IN THIS SECTION. PROVIDE SHOP DRAWINGS TO THE OWNER OR OWNER'S REPRESENTATIVE.

B. QUALIFICATIONS OF INSTALLERS: USE ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

C. OBTAIN OWNER OR OWNER'S REPRESENTATIVE'S ACCEPTANCE OF INSTALLED AND TESTED SITE DRAINAGE SYSTEM PRIOR TO BACKFILLING.

1.07 SUBMITTALS:

A. PRODUCT DATA:

1. COMPLETE MATERIALS LIST OF ALL ITEMS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION.
2. MANUFACTURER'S SPECIFICATIONS AND OTHER DATA REQUIRED TO DEMONSTRATE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
3. MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

B. TESTING AND INSPECTION REPORTS.

C. PROVIDE SITE SEWER AND DRAINAGE RECORD DRAWINGS:

1. LEGIBLY MARK DRAWINGS TO RECORD ACTUAL CONSTRUCTION.
2. INDICATE HORIZONTAL AND VERTICAL LOCATIONS REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.
3. IDENTIFY FIELD CHANGES OF DIMENSIONS AND DETAILS AND CHANGES MADE BY CHANGE ORDER.

1.08 COOPERATION AND COORDINATION WITH OTHER TRADES:

A. THE WORK SHALL BE SO PERFORMED THAT THE PROGRESS OF THE ENTIRE PROJECT CONSTRUCTION, INCLUDING ALL OTHER TRADES, SHALL NOT BE DELAYED AND NOT INTERFERED WITH. MATERIALS AND APPARATUS SHALL BE INSTALLED AS FAST AS CONDITIONS WILL PERMIT AND MUST BE INSTALLED PROMPTLY WHEN AND AS DIRECTED.

B. ALL WORK SHALL BE COORDINATED WITH OTHERS TRADES. THE WORK IN THIS SECTION SHALL AT NO TIME INTERRUPT THE NORMAL OPERATIONS OF EXISTING BUILDINGS.

PART 2 PRODUCTS

2.01 POLYVINYL CHLORIDE PIPE (PVC):

A. PVC PIPE SHALL BE MADE FROM VIRGIN PLASTIC AND SHALL CONFORM TO ASTM D1784. SOLID PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D3034 SDR 35.

B. STANDARD NOMINAL LENGTHS OF PIPE SHALL BE A MINIMUM OF 10 FEET.

C. THE PIPE FITTINGS SHALL BE AS UNIFORM AS COMMERCIALLY PRACTICAL IN COLOR, OPACITY, DENSITY AND OTHER PHYSICAL PROPERTIES.

D. PIPE SHALL BE TESTED IN ACCORDANCE WITH SECTION 10 OF ASTM D2412 STANDARD METHOD OF "TEST FOR EXTERNAL LOADING PROPERTIES OF PLASTIC PIPE BY PARALLEL-PLATE LOADING". THE MINIMUM VALUE OF PIPE STIFFNESS AT 5% DEFLECTION COMPUTED FROM DATA OBTAINED FROM THE ABOVE TESTING PROCEDURE SHALL BE IN ACCORDANCE WITH ASTM D2412.

E. EACH PIPE AND ALL COUPLINGS AND FITTINGS SHALL BE CLEARLY MARKED ON THE OUTSIDE SURFACE WITH THE NAME OF THE MANUFACTURER, ASTM DESIGNATION WITH TYPE AND GRADE, AND NOMINAL DIAMETER.

2.02 DUCTILE IRON (D.I.) SEWER PIPE:

A. ANSI/AWWA C151/ A21.51 CLASS 52 WITH CEMENT LINING CONFORMING TO ANSI A21.4. PRESSURE CLASS SHALL BE ANSI PRESSURE CLASS 350. PROTECTIVE COATING ON EXTERIOR SHALL BE APPROVED BITUMASTIC OR COAL TAR ENAMEL CONFORMING TO ANSI A21.4 AND A21.10

B. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON SHORT BODY FITTINGS CONFORMING TO ANSI A21.1 WITH CEMENT LINING CONFORMING TO ANSI A21.4. THICKNESS CLASS SHALL BE ANSI PRESSURE CLASS 350.

C. LENGTH AND JOINTS – DUCTILE IRON PIPE LENGTHS SHALL GENERALLY BE AS LONG AS POSSIBLE BUT SHALL HAVE A BELL-AND-SPIGOT OR SHALL HAVE FURNISHED WITH IT A SEPARATE JOINTING SLEEVE OR COUPLING WITH RUBBER RINGS COMPRESSED INTO PLACE TO MAKE A WATERTIGHT CLOSURE. JOINTS SHALL BE SEALED WITH A RUBBER RING GASKET AND SHALL BE OF A COMPOSITION AND TEXTURE WHICH WILL ENDURE PERMANENTLY UNDER THE CONDITIONS LIKELY TO BE IMPOSED BY THIS USE, AND SHALL CONFORM TO ASTM SPECIFICATIONS C-361 AMENDED TO DATE. JOINTS SHALL BE "PUSH-ON" TYPE COMPLYING WITH ANSI A21.1.

2.04 CAST IRON SOIL PIPE:

A. CAST IRON SOIL PIPE SHALL BE ASTM A 74, EXTRA HEAVY TYPE, INSIDE NOMINAL DIAMETER AS SPECIFIED ON CONSTRUCTION DRAWINGS, BELL AND SPIGOT END. JOINTS SHALL BE IN CONFORMANCE WITH AWWA C111, RUBBER GASKET JOINT DEVICES.

2.05 PIPE JOINTS AND FITTINGS:

A. DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINTS. ALL FITTINGS SHALL BE RESTRAINED OR RODDED.

B. DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI 21.10 AND 21.11 (AWWA C110 AND AWWA C111).

C. HDPE AND PVC FITTINGS SHALL BE WATERTIGHT. STRUCTURAL INTEGRITY AND JOINT CONFIGURATION SHALL BE IDENTICAL TO THAT OF PIPE.

2.06 SEWER MANHOLES:

A. PRECAST CONCRETE MANHOLE BASE SECTIONS, RISER SECTIONS AND CONE SECTIONS SHALL BE CONSTRUCTED OF A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, AIR ENTRAINED CONCRETE WITH HOOP REINFORCING AND LIFTING HOLES. SECTIONS SHALL BE FURNISHED WITH "O" RING RUBBER GASKETS. LIFTING HOLES IN ALL SECTIONS SHALL BE FILLED WITH NONSHRINK MORTAR AFTER SECTIONS ARE IN PLACE.

B. CLASS "A" CONCRETE: ASTM C94. ALL CONCRETE SHALL BE CLASS A UNLESS STATED OTHERWISE.

1. STRENGTH : 3000 PSI @ 28 DAYS
2. CEMENT CONTENT : TYPE II, 6.5 SACKS/CY (MIN)
3. W/C RATIO : 0.464 (MAX)
4. FINE AGGREGATE : ASTM C33
5. COARSE AGGREGATE : ASTM C33 SIZE #67

C. CLASS "B" CONCRETE:

1. STRENGTH : 3000 PSI @ 28 DAYS
2. CEMENT CONTENT : TYPE II, 6.0 SACKS/CY (MIN)
3. W/C RATIO : 0.488 (MAX)
4. FINE AGGREGATE : ASTM C33
5. COARSE AGGREGATE : ASTM C33 SIZE #67

D. REINFORCING STEEL: ASTM A615, A616, OR A185.

E. PRECAST CONCRETE: ASTM C478 EXCEPT AS SPECIFIED OTHERWISE.

F. TABLES AND INVERTS SHALL BE CONSTRUCTED OF BRICK, SHALL HAVE THE SAME SHAPE OF THE PIPE THAT ARE CONNECTED AND ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

G. PRECAST STRUCTURES SHALL BE ABLE TO WITHSTAND H-20 LOADING.

H. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.

I. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:

1. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
2. CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;\
3. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.
4. PIPE TO MANHOLE JOINTS SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
   a. KOR – N – SEAL
   b. LOCK JOINT
   c. PRESS WEDGE II

2.07 BRICK MASONRY:

A. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C 150-05, TYPE H.

B. HYDRATED LIME SHALL BE TYPE S CONFORMING TO THE ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES".

C. SAND SHALL BE CLEAN, HARD, DURABLE PARTICLES AND WITH NOT MORE THAN 5% IN VOLUME OF MICA, CLAY AND OTHER DELETERIOUS MATERIALS. THE SAND SHALL BE GRADED FROM FINE TO COURSE SO THAT WHEN TESTED DRY, IT WILL CONFORM TO THE LIMITS OF ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".

D. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION;

1. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   a. 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   b. 4.5 PARTS SAND, ONE PART CEMENT AND 0.5 PART HYDRATED LIME

E. WATER SHALL BE FREE FROM OILS, ACIDS, ALKALIS OR ORGANIC MATTER, AND SHALL BE CLEAN AND FRESH.

F. BRICK SHALL BE SOUND, HARD AND UNIFORMLY BURNED, REGULAR AND UNIFORM IN SHAPE AND SIZE, OF COMPACT TEXTURE AND SATISFACTORY TO THE OWNER OR OWNER'S REPRESENTATIVE. BRICKS SHALL COMPLY WITH ASTM C32, GRADE SS. ONLY WHOLE BRICK SHALL BE USED UNLESS OTHERWISE PERMITTED.

2.08 MANHOLE STEPS: PLASTIC STEPS ARE REQUIRED BY THE CITY OF DOVER.

2.09 MANHOLE FRAMES AND COVERS:

A. CASTINGS SHALL BE OF GOOD QUALITY, STRONG, TOUGH EVENLY GRAINED, SMOOTH CAST IRON, FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES, AND DEFECTS OF ANY KIND. CASTINGS SHALL BE THOROUGHLY CLEANED AND ALL FINISHED SURFACES SHALL BE MACHINED TO A TRUE PLANED SURFACE AND SHALL SEAT AT ALL POINTS WITHOUT ROCKING.

B. CASTINGS SHALL NOT BE ACCEPTABLE IF THE ACTUAL WEIGHT IS LESS THAN 95% OF THE THEORETICAL WEIGHT OF THE CASTINGS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL FURNISH INVOICES TO THE OWNER SHOWING TRUE WEIGHTS, CERTIFIED BY THE SUPPLIER.

C. CAST IRON SHALL CONFORM TO ASTM A48, CLASS 30 AND FRAMES, COVERS AND GRATES SHALL BE ABLE TO WITHSTAND HS-20 LOADING.

D. PROVIDE A 30 INCH DIAMETER CLEAR OPENING. SEWER MANHOLE COVERS SHALL HAVE THE WORD "SEWER" IN 3" LETTERS CAST INTO THE TOP SURFACE.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS:

A. OBTAIN DETAILED INFORMATION FROM THE MANUFACTURERS OF APPARATUS AS TO THE PROPER METHOD OF INSTALLING AND CONNECTING SAME.

B. CAREFULLY STORE MATERIALS AND EQUIPMENT WHICH ARE NOT IMMEDIATELY INSTALLED AFTER DELIVERY. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL.

C. ANY DEFECTIVE PIPE, FITTING OR DRAIN APPARATUS THAT IS DISCOVERED AFTER IT HAS BEEN INSTALLED OR HAS BEEN INSTALLED IMPROPERLY, SHALL BE REMOVED AND REPLACED WITH NON-DEFECTIVE PARTS TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

D. TRENCHES SHALL BE KEPT FREE OF WATER AND AS DRY AS POSSIBLE DURING THE INSTALLATION OF THE BEDDING MATERIAL, PIPE AND JOINTING FOR AS LONG A PERIOD AS REQUIRED. PIPE SHALL NOT BE LAID IN WATER OR WHEN TRENCH CONDITIONS ARE UNSUITABLE FOR THE WORK.

E. PROVIDE ALL INSPECTION AGENTS AT LEAST 24 HOURS NOTICE PRIOR TO WORK BEGINNING. INSPECTOR SHALL BE ON-SITE DURING ANY/ALL EXCAVATION, INSTALLATION, BACKFILL, AND TESTING OF ALL SEWERAGE PIPES, MANHOLES, AND APPURTENANCES.

F. NO BACKFILLING SHALL TAKE PLACE, UNLESS OTHERWISE ORDERED BY THE OWNER OR OWNER'S REPRESENTATIVE, UNTIL THE INSPECTION HAS BEEN COMPLETED.

G. EXCAVATION, BACKFILL AND PIPE BEDDING MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK.

3.02 LAYING PIPE:

A. THIS WORK SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF DRAIN LINES IN ACCORDANCE WITH THESE SPECIFICATIONS, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION.

B. ALL PIPE SHALL BE SOUND AND CLEAN BEFORE INSTALLING. WHEN LAYING OF PIPE IS NOT IN PROGRESS, INCLUDING LUNCH TIME, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR OTHER APPROVED MEANS.

C. THE FULL LENGTH OF PIPE SHALL REST SOLIDLY ON THE UNDISTURBED TRENCH BOTTOM, WITH RECESSES EXCAVATED TO ACCOMMODATE BELLS, COUPLINGS AND JOINTS. BLOCKING WILL NOT BE PERMITTED.

D. PIPE SHALL BE LAID TRUE TO THE SPECIFIED LINES AND GRADES. THE BELL END SHALL BE TOWARD THE RISING GRADE AND EACH SECTION OF PIPE SHALL HAVE A FIRM BEARING THROUGHOUT ITS LENGTH. MATERIAL PLACED AROUND AND UNDER THE PIPE SHALL BE FREE OF STONES. ROCKS SHALL NOT BE ROLLED INTO TRENCHES AND ALLOWED TO DROP ONTO PIPES. PIPE SHALL BE BEDDED IN ¾" STONE TO SPRING LINE OF PIPE AND THEN BURIED IN CLEAN SAND FREE OF STONES. STONE AND SAND SHALL BE IN ACCORDANCE WITH ENV-WQ 704.11(a) AND (b).

E. WHEN PIPE CUTTING IS REQUIRED AND APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE PIPE MATERIAL SHALL BE CUT BY USING A SAW OR MILLING PROCESS, APPROVED BY THE PIPE MANUFACTURER AND NOT BY ANY IMPACT DEVICE, SUCH AS A HAMMER AND CHISEL, TO BREAK THE PIPE. THE PIPE SHALL BE CUT, NOT BROKEN. THE CUT END OF THE PIPE SHALL BE SQUARE TO THE AXIS OF THE PIPE AND ANY ROUGH EDGES GROUND SMOOTH.

F. INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321 AND AS RECOMMENDED BY THE PIPE MANUFACTURER. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK. BACKFILL SHALL BE PLACED IN SIX INCH LIFTS AND COMPACTED TO 95% MINIMUM DENSITY AS PER AASHTO T99. CARE SHOULD BE TAKEN TO AVOID ANY USE OF FRACTURED STONE IN BACKFILL EXCEEDING TWO INCHES (2").

G. THE CONTRACTOR MAY USE A LASER BEAM TO ASSIST IN SETTING THE PIPE, PROVIDED HE CAN DEMONSTRATE SATISFACTORY SKILL IN ITS USE. THE USE OF STRING LEVELS, HAND LEVELS, CARPENTERS LEVELS OR OTHER RELATIVELY CRUDE DEVICES FOR TRANSFERRING GRADE OR SETTING PIPE WILL NOT BE PERMITTED.

H. WHEN LAYING REINFORCED CONCRETE PIPE, BEDDING SHALL CONSIST OF CAREFULLY PREPARING AND SHAPING A BED OF FINE GRANULAR MATERIAL TO FIT THE LOWER 15 PERCENT OF THE EXTERNAL HEIGHT OF THE PIPE WITH A MINIMUM OF 4 IN. UNDER THE BOTTOM OF THE PIPE. RECESS SHALL BE EXCAVATED FOR THE BELLS OF THE PIPE. AS SOON AS THE EXCAVATION IS COMPLETED AND THE SPECIFIED PIPE BEDDING PROVIDED, THE CONTRACTOR SHALL FIRMLY BED THE PIPE TO CONFORM ACCURATELY TO THE LINE AND GRADE INDICATED ON THE PLANS. NO BLOCKING WILL BE PERMITTED UNDER THE PIPE. AS SOON AS THE PIPE IS IN PLACE, FINE GRANULAR MATERIAL SHALL BE PLACED AND COMPACTED TO THE MID-DIAMETER OF THE PIPE. THE REMAINING BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 23 00, EARTHWORK. BACKFILL SHALL BE PLACED IN SIX INCH LIFTS AND COMPACTED TO 95% MINIMUM DENSITY AS PER AASHTO T99.

3.03 SEWER MANHOLES:

A. SEWER MANHOLES, DRAIN MANHOLES, CATCH BASINS AND INSPECTION MANHOLES SHALL BE BUILT TO THE LINES, GRADES, DIMENSIONS AND DESIGN SHOWN ON THE PLANS WITH THE NECESSARY FRAMES, COVERS AND GRATES.

B. MANHOLE AND CATCH BASIN BASES SHALL BE PLACED ON 6 INCHES OF COMPACTED BEDDING MATERIAL.

C. PRECAST SECTIONS SHALL BE SET SO AS TO BE VERTICAL AND IN TRUE ALIGNMENT WITH A 1/4 INCH MAXIMUM TOLERANCE TO BE ALLOWED. THE PRECAST SECTIONS SHALL BE INSTALLED IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT.

D. WHERE HOLES MUST BE CUT IN THE PRECAST SECTIONS TO ACCOMMODATE PIPES, CUTTING SHALL BE DONE PRIOR TO SETTING THEM IN PLACE TO PREVENT ANY SUBSEQUENT JARRING WHICH MAY LOOSEN THE JOINTS.

3.04 BRICKWORK:

A. MORTAR SHALL BE MIXED ONLY IN SUCH QUANTITY AS MAY BE REQUIRED FOR IMMEDIATE USE AND USED BEFORE THE INITIAL SET HAS TAKEN PLACE. MORTAR SHALL NOT BE RETAINED FOR MORE THAN ONE HOUR AND SHALL BE CONSISTENTLY WORKED OVER WITH A SHOVEL OR HOE UNTIL USED.

B. BRICK MASONRY SHALL BE PROTECTED FROM TOO RAPID DRYING BY APPROVED MEANS AND SHALL BE PROTECTED FROM WEATHER AND FROST AS REQUIRED.

C. BRICKS SHALL BE CLEANED AND THOROUGHLY WETTED SHORTLY BEFORE THEY ARE PUT INTO THE WORK, AND EACH BRICK SHALL BE LAID IN A FULL BED OF MORTAR WITHOUT REQUIRING SUBSEQUENT GROUTING OR FILLING. JOINTS BETWEEN BRICKS SHALL NOT EXCEED 1/2 INCH AND SHALL BE POINTED.

3.05 FRAMES AND COVERS:

A. MANHOLE FRAMES – SHALL BE SET WITH THE TOPS CONFORMING ACCURATELY TO THE GRADE OF THE PAVEMENT OR FINISHED GROUND SURFACE OR AS INDICATED ON THE DRAWINGS. FRAMES SHALL BE SET CONCENTRIC WITH THE TOP OF THE MASONRY AND IN A FULL BED OF MORTAR SO THAT THE SPACE BETWEEN THE TOP OF THE MANHOLE MASONRY AND THE BOTTOM FLANGE OF THE FRAME SHALL BE COMPLETELY FILLED AND MADE WATERTIGHT. A THICK RING OF MORTAR EXTENDING TO THE OUTER EDGE OF THE MASONRY SHALL BE PLACED ALL AROUND AND ON THE TOP OF THE BOTTOM FLANGE. THE MORTAR SHALL BE SMOOTHLY FINISHED AND HAVE A SLIGHT SLOPE TO SHED WATER AWAY FROM THE FRAME.

B. MANHOLE COVERS SHALL BE LEFT IN PLACE IN THE FRAMES ON COMPLETION OF OTHER WORK AT THE MANHOLES.

C. A MAXIMUM OF 12" OF BRICK AND MORTAR SHALL BE ALLOWED FOR GRADE ADJUSTMENT.

D. COVERS AND GRATES SHALL BE SET IN THE FRAMES, SEATING BEING CLEANED BEFORE COVERS AND GRATES ARE SET.

3.06 SEWER SERVICE CONNECTIONS:

A. THE MINIMUM SIZE FOR THE BUILDING SEWER SERVICE CONNECTION SHALL BE 6".

B. THE MINIMUM SLOPE FOR THE BUILDING SEWER SERVICE SHALL BE 1/4" PER, FOOT, UNLESS OTHERWISE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.

C. BEFORE BACKFILLING, THE CONTRACTOR SHALL NOTIFY THE INSPECTOR SO THAT HE CAN MAKE THE NECESSARY MEASUREMENTS TO LOCATE THE OPENING LATER. IN ADDITION, AN APPROVED FERROUS ROD OR PIPE SHALL BE PLACED OVER THE PLUGGED OPENING AT THE PROPERTY LINE, EXTENDING TO WITHIN 2 INCHES OF THE FINAL GROUND SURFACE.

1. PROXIMITY TO WATER LINES:
   a. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
      1) NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.
      2) SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
      3) A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (1) OR (2) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.08.
   b. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
   c. VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
   d. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.
   e. HOWEVER, SHOULD CONSTRUCTION OPERATIONS REVEAL OR EXPOSE A WATERLINE MAIN OR SERVICE RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FEET HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED:
      1) IF THE ABOVE SEPARATION CANNOT BE ACHIEVED, THE SEWER SHALL BE DUCTILE IRON PIPE OF THE SAME SIZE SHALL BE UTILIZED. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE.
      2) WHENEVER THE WATERLINE CROSSES OVER THE NEW SEWER WITH LESS THAN 18 INCHES OF SEPARATION, THE SEWER PIPE FOR A DISTANCE OF 6 FEET ON EACH SIDE OF THE WATERLINE SHALL BE CLASS 52 DUCTILE IRON PIPE. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE. AS AN ALTERNATIVE, THE WATERLINE MAY BE RAISED, IF FEASIBLE, TO ACHIEVE THE REQUIRED SEPARATION.
      3) SHOULD THE WATERLINE IN EITHER SITUATION BE AT OR BELOW THE SEWER ELEVATION, THE WATERLINE OR THE SEWER MUST BE RELOCATED TO ACHIEVE 10 FT. SEPARATION OR THE WATERLINE RAISED.

3.07 GRAVITY SEWER PIPE TESTING:

A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

B. LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

1. ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR"; OR
2. UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE" (1998).

C. ALL NEW GRAVITY SEWERS SHALL BE:

1. CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND
2. TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.

D. ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.

E. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.

F. INSPECTION AND TESTING: – UPON COMPLETION OF THE INSTALLATION AND BACKFILLING PORTIONS OF THE SANITARY SEWER, THE PIPE SHALL BE INSPECTED BY THE VISUAL AND AIR TEST METHODS SUBSEQUENTLY DESCRIBED, OR AS REQUIRED BY THE TOWN DPW AND THE NHDES. THIS INSPECTION AND TESTING SHALL BE UNDERTAKEN AS THE WORK PROGRESSES. THE ENGINEER SHALL BE NOTIFIED IN ADVANCE OF SUCH INSPECTION AND TESTING AND THE CONTRACTOR SHALL PROVIDE ALL FACILITIES, MATERIALS, EQUIPMENT AND LABOR REQUIRED FOR SUCH TESTING. SUCH INSPECTION AND TESTING SHALL BE A PREREQUISITE FOR ACCEPTANCE OF ALL WORK.

1. VISUAL INSPECTION: – AN INSPECTION OF THE INTERIOR OF THE COMPLETED SANITARY SEWER PIPE BY DIRECT VISUAL INSPECTION SHALL BE MADE FOR ALL PIPE INSTALLED FROM MANHOLE TO MANHOLE AND FOR SERVICE LATERALS. ANY LIGHTS, EQUIPMENT OR LABOR NECESSARY FOR SUCH INSPECTION SHALL BE PROVIDED BY THE CONTRACTOR. CAMERA WORK TO BE PERFORMED BY NASSCO CERTIFIED CONTRACTOR.

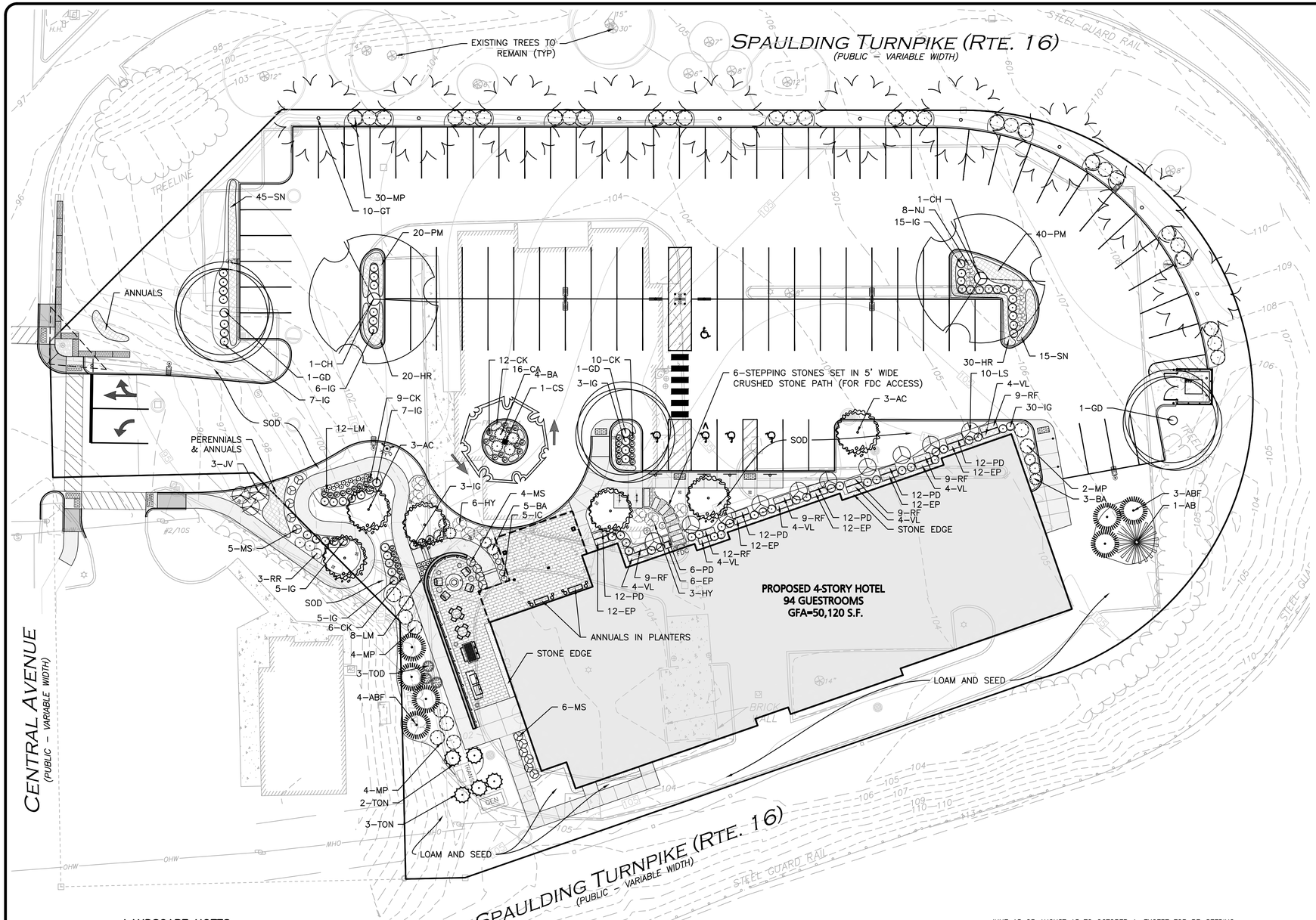
   ANY FOREIGN MATERIAL FOUND IN THE INTERIOR OF THE SEWER, ANY DIRT, DEBRIS OR OTHER OBJECTS SHALL BE REMOVED BY THE CONTRACTOR. VISIBLE DEFECTS SUCH AS BROKEN PIPE SECTIONS, IMPROPERLY INSTALLED GASKETS, PROJECTING CONNECTIONS, CRACKS, VISIBLE LEAKS OR OTHER DEFECTS SHALL BE NOTED, CORRECTED AND THE PIPE RE-INSPECTED.

2. AIR TESTING OF MAIN LINE GRAVITY SEWERS:

   METHOD: ASTM F1417-92(2005)

   PROCEDURE:

   a. PLUG PIPE OUTLETS WITH SUITABLE TEST PLUGS. BRACE EACH PLUG SECURELY.
   b. PIPE AIR SUPPLY TO PIPELINE TO BE TESTED IN SUCH MANNER THAT AIR SUPPLY MAY BE SHUT OFF, PRESSURE OBSERVED, AND AIR PRESSURE RELEASED FROM PIPE WITHOUT WORKMEN ENTERING MANHOLE.
   c. ADD AIR SLOWLY TO PORTION OF PIPE UNDER TEST UNTIL INTERNAL PRESSURE OF LINE IS RAISED TO APPROXIMATELY 4 PSIG, BUT LESS THAN 5 PSIG.
   d. SHUT AIR SUPPLY OFF AND ALLOW AT LEAST 2 MINUTES FOR AIR PRESSURE TO STABILIZE.
   e. WHEN PRESSURE HAS STABILIZED AND IS AT



LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING TREE
- SHRUBS
- MULCH BED
- PERENNIALS/GROUNDCOVER
- STONE EDGE

GENERAL NOTES:

1. SNOW SHALL BE TAKEN OFF-SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE OR BLOCKS THE USE OF ON-SITE PARKING. ANY EXCESS WILL BE BE TRUCKED OFF-SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
2. CONTRACTOR TO PROVIDE ALL-WEATHER ACCESS FOR CITY OF DOVER FIRST RESPONDERS DURING CONSTRUCTION.

PLAN NOTES:

1. THE PURPOSED OF THIS PLAN IS TO DEPICT THE PROPOSED LANDSCAPE PLANTINGS AND PROVIDE INFORMATION REGARDING THE INSTALLATION.
2. EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF DOVER, NH.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF NAY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
5. ANY TREES NOTED AS "SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
6. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
7. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
8. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
9. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT (LATEST EDITION).
10. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE. ANY PLANT MATERIALS WHICH DIE WITHIN THE ONE YEAR PLANT GUARANTEE PERIOD WILL BE REPLACED BY THE LANDSCAPE CONTRACTOR. OWNERS TO COORDINATE DIRECTLY WITH THE LANDSCAPE CONTRACTOR FOR REPLACEMENT PLANTINGS.
11. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED.
12. LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
13. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
14. TREES SHALL HAVE A MINIMUM CALIPER (DBH) AS INDICATED ON THE PLANTING SCHEDULE TAKEN FOUR FEET ABOVE THE ROOT CROWN.
15. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUNDCOVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH.
16. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
17. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
18. CONTRACTOR RESPONSIBLE FOR WATERING AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
19. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE SLOPED TO SIX INCHES (6") ABOVE THE TOP OF CURB.
20. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
21. SLOPES AT 2:1 SHOULD HAVE 6" LOAM & SEED. SEEDING OF 2:1 SLOPES SHALL OCCUR IN THE DRY & AFTER SLOPES ARE COMPACTED.
22. ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 2 FEET MINIMUM DEPTH OF TOPSOIL. TWO FEET OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL, DEMOLITION, AND LANDSCAPE CONTRACTORS TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 2 FEET MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET. SEE TOPSOIL DETAIL.
23. PRIOR TO LAYING TOPSOIL, ALL SUBSOIL (BELOW PROPOSED TOPSOIL) TO BE TILLED TO A DEPTH OF AT LEAST 18" TO REMOVE CONSTRUCTION COMPACTION AND ALLOW FOR PROPER DRAINAGE OF TOPSOILS.
24. ALL SEEDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RE-SEEDING OF BARE SPOTS. AT ALL SLOPED AREAS CONTRACTOR TO INSTALL COCONUT FIBER JUTE MESH NETTING ON ALL SLOPES 3:1 AND GREATER, HYDROSEED ALL EXPOSED AREAS. ADD SOIL STABILIZER "FLEXTERRA HP-FGM" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE). CONTRACTOR TO ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SEEDING ALL DISTURBED, ERODED, OR BARE SPOTS & UNTIL SLOPES ARE FULLY STABLE. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING.
25. AFTER SEEDING, ALL AREAS TO BE LIGHTLY MULCHED WITH WEED FREE STRAW & CONTINUALLY WATERED EVERY DAY SO THAT SEED IS KEPT MOIST UNTIL SEED IS ESTABLISHED & APPROVED BY A&M LANDSCAPE ARCHITECT (USE NO HAY).
26. IF THERE IS NO PROPOSED IRRIGATION SYSTEM AFTER PLANTINGS & LAWNS & SEEDED AREAS HAVE BEEN INSTALLED, LANDSCAPE CONTRACTOR RESPONSIBLE TO TEMPORARILY WATER ALL INSTALLED PLANTINGS, SEEDED AREAS, & LAWN AREAS MIN. 2 TIMES A WEEK DURING INITIAL ESTABLISHMENT PERIOD OF 6 MONTHS AFTER ALL LANDSCAPING IS INSTALLED.
27. AFTER PROVISIONAL ACCEPTANCE THE CONTRACTOR WILL WATER THE PLANTINGS AT A MINIMUM ONCE PER WEEK DURING THE MONTHS OF JUNE 30TH, TO SEPTEMBER 1ST, PLANTINGS WILL BE WATERED ON A BIWEEKLY SCHEDULE FOR THE TIME PERIOD MARCH 1ST TO JUNE 30TH AND SEPTEMBER 1ST TO THE FIRST FROST, REGARDLESS OF PLANTING DATE. IN LIEU OF WATERING ON A WEEKLY/BI-WEEKLY SCHEDULE THE CONTRACTOR CAN USE A GATOR BAG. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REFILL THE GATOR BAG AS NECESSARY. THE GATOR BAG WILL BE REMOVED BY THE CONTRACTOR AT THE TIME OF THE FIRST FORECASTED FROST.

DIG SAFE

BEFORE YOU DIG CALL 811 OR 1-888-DIG-SAFE 1-888-344-7233

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LICENSED LANDSCAPE ARCHITECT
JACQUELINE B. TRAINER
00169
STATE OF NEW HAMPSHIRE

03.12.2026

PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	03-12-26	CITY REVIEW COMMENTS
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	1" = 20'	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:

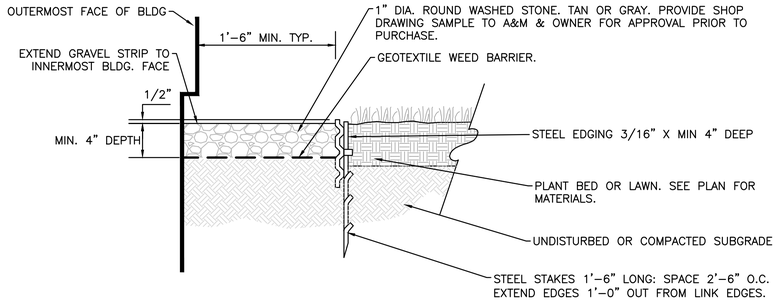
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DRAWING TITLE: LANDSCAPE PLAN

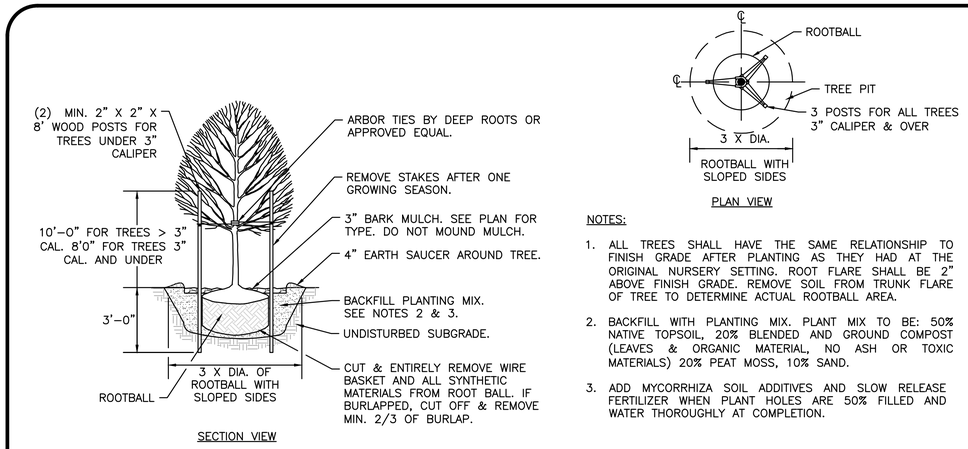
SHEET No. L-101

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NOTES:
1. STONE STRIP IS TO BE INSTALLED CONTINUOUS ADJACENT TO THE ENTIRE FACE OF BUILDINGS EXCEPT WHERE OTHER HARD SURFACING MATERIALS ARE SPECIFIED OR IF SHOWN OTHERWISE ON PLAN.
2. STONE STRIP TO BE INSTALLED UNDER ALL BUILDING OVERHANGS.
3. COORDINATE INSTALLATION OF STONE STRIP WITH INSTALLATION OF FOUNDATION DRAIN & TO BE LOCATED BEYOND ROOF OVERHANG.

STONE DRIP STRIP 7
NOT TO SCALE



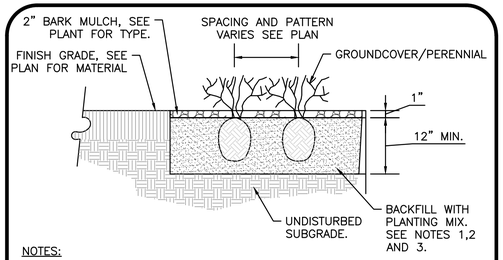
NOTES:
1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

DECIDUOUS TREE 6
NOT TO SCALE



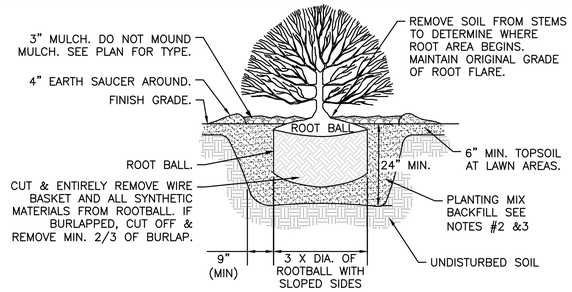
NOTES:
1. ANNUALS TO BE "NEPTUNE" MIX BY PROVEN WINNERS
2. PROVIDE SHOP DRAWING FOR APPROVAL PRIOR TO PURCHASE.

ANNUALS 5
NOT TO SCALE



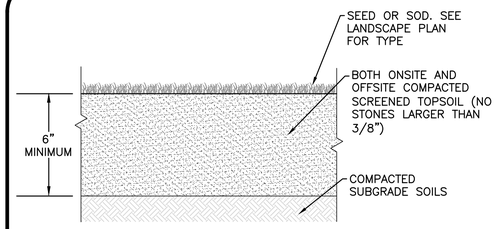
NOTES:
1. ALL GROUNDCOVER/PERENNIALS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM STEM OF GROUND COVER/ PERENNIAL TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

GROUNDCOVER/PERENNIAL PLANTING 4
NOT TO SCALE



NOTES:
1. ALL SHRUBS ROOT FLARE SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED. WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.

SHRUB 3
NOT TO SCALE

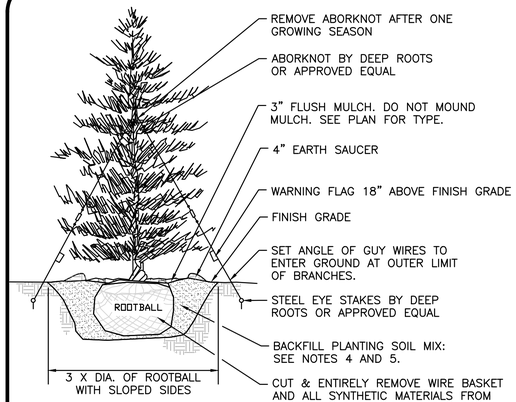


TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% – 65%
SILT	15% – 35%
CLAY	5% – 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85–100
NO. 40	60–85
NO. 100	38–60
NO. 200	28–40

NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL–DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLODS, STICKS, TRASH, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL 2
NOT TO SCALE



NOTES
1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. ATTACH GUY WIRES AT 2/3 HEIGHT OF TREE.
3. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% BLENDED AND GROUND COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH OR TOXIC MATERIALS) 20% PEAT MOSS, 10% SAND.
4. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

EVERGREEN TREE 1
NOT TO SCALE

R: \PROJECTS \1173–31 \CIVIL \DRAWINGS \CURRENT \L–1173–31_LANDSCAPE.DWG

LICENSED LANDSCAPE ARCHITECT
JACQUELINE B. TRAINER
00169
STATE OF NEW HAMPSHIRE
03.12.2026
PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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DRAWING TITLE:
LANDSCAPE DETAILS

SHEET No.
L-501

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EROSION CONTROL/RESTORATION DRY SEED MIX:

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES
(BY NEW ENGLAND WETLAND PLANTS INC. – NEWP.COM)
APPLICATION RATE: 35LBS/ACRE | 1250 SQ FT/LB

ITEM	BOTANICAL NAME	COMMON NAME	INDICATOR
1.	ELYMUS RIPARIUS	RIVERBANK WILD RYE	FACW
2.	ELYMUS CANADENSIS	CANADA WILD RYE	FACU+
3.	FESTUCA RUBRA	RED FESCUE	FACU
4.	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	
5.	LOLIUM PERENNE	PERRENIAL RYEGRASS	
6.	PANICUM VIRGATUM	SWITCH GRASS	FAC
7.	SORGHASTRUM NUTANS	INDIAN GRASS	UPL
8.	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
9.	AGROSTIS PERENNANS	UPLAND BENTGRASS	FACU

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES PROVIDES AN APPROPRIATE SELECTION OF NATIVE AND NATURALIZED GRASSES TO ENSURE THAT DRY AND RECENTLY DISTURBED SITES WILL BE QUICKLY REVEGETATED AND THE SOIL SURFACE STABILIZED. IT IS AN APPROPRIATE SEED MIX FOR ROAD CUTS, PIPELINES, STEEPER SLOPES, AND AREAS REQUIRING QUICK COVER DURING THE ECOLOGICAL RESTORATION PROCESS. THE MIX MAY BE APPLIED BY HYDRO-SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL-SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE SPRING THROUGH MID-SUMMER SEEDING WILL BENEFIT FROM A LIGHT MULCHING OF WEED-FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING WILL BE REQUIRED. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE. PREPARATION OF A CLEAN WEED FREE SEED BED IS NECESSARY FOR OPTIMAL RESULTS.

SEED MIX 4
NOT TO SCALE

LANDSCAPE MANAGEMENT NOTES:

LANDSCAPE MANAGEMENT PLAN
IT SHOULD BE RECOGNIZED THAT THIS IS A GENERAL GUIDELINE TOWARDS ACHIEVING HIGH QUALITY AND WELL GROOMED LANDSCAPED AREAS. THE GROUNDS STAFF / LANDSCAPE CONTRACTOR MUST RECOGNIZE THE SHORTCOMINGS OF A GENERAL MAINTENANCE PROGRAM SUCH AS THIS, AND MODIFY AND/OR AUGMENT IT BASED ON WEEKLY, MONTHLY, AND YEARLY OBSERVATIONS. IN ORDER TO ASSURE THE HIGHEST QUALITY CONDITIONS, THE STAFF MUST ALSO RECOGNIZE AND APPRECIATE THE NEED TO BE AWARE OF THE CONSTANTLY CHANGING CONDITIONS OF THE LANDSCAPING AND BE ABLE TO RESPOND TO THEM ON A PROACTIVE BASIS.

- SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH).

FERTILIZER.

- BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS, SUCH AS THE USE OF LOW-PHOSPHORUS FERTILIZER AND SLOW-RELEASE NITROGEN,
- MAINTENANCE PRACTICES SHOULD BE AIMED AT REDUCING ENVIRONMENTAL, MECHANICAL AND PEST STRESSES TO PROMOTE HEALTHY AND VIGOROUS GROWTH. WHEN NECESSARY, PEST OUTBREAKS SHOULD BE TREATED WITH THE MOST SENSITIVE CONTROL MEASURE AVAILABLE. SYNTHETIC CHEMICAL CONTROLS SHOULD BE USED ONLY AS A LAST RESORT TO ORGANIC AND BIOLOGICAL CONTROL METHODS. FERTILIZER, SYNTHETIC CHEMICAL CONTROLS AND PEST MANAGEMENT APPLICATIONS (WHEN NECESSARY) SHOULD BE PERFORMED ONLY BY LICENSED APPLICATORS IN ACCORDANCE WITH THE MANUFACTURER'S LABEL INSTRUCTIONS WHEN ENVIRONMENTAL CONDITIONS ARE CONDUCIVE TO CONTROLLED PRODUCT APPLICATION.
- ONLY SLOW-RELEASE ORGANIC FERTILIZERS SHOULD BE USED IN THE LANDSCAPED AREAS TO LIMIT THE AMOUNT OF NUTRIENTS THAT COULD ENTER DOWNSTREAM RESOURCE AREAS. FERTILIZATION OF DEVELOPED AREAS ON SITE WILL BE PERFORMED WITHIN MANUFACTURERS LABELING INSTRUCTIONS AND SHALL NOT EXCEED AN NPK RATIO OF 0.5:1:1 (I.E. LOW N, LOW P FERTILIZER MIX), CONSIDERED A LOW NITROGEN MIXTURE. ADDITIONALLY, THE FERTILIZER WILL INCLUDE A SLOW RELEASE ELEMENT.

LANDSCAPE MAINTENANCE PROGRAM PRACTICES:
SHRUBS

- MULCH NOT MORE THAN 3" DEPTH WITH SHREDDED PINE OR FIR BARK.
- HAND PRUNE ANNUALLY, IMMEDIATELY AFTER BLOOMING, TO REMOVE 1/3 OF THE ABOVE-GROUND BIOMASS (OLDER STEMS). STEM REMOVALS TO OCCUR WITHIN 6" OF THE GROUND TO OPEN UP SHRUB AND MAINTAIN TWO-YEAR WOOD (THE BLOOMING WOOD).
- FERTILIZE WITH 1/2 LB. SLOW-RELEASE FERTILIZER (SEE ABOVE SECTION ON FERTILIZER) EVERY SECOND YEAR.
- HAND PRUNE EVERGREEN SHRUBS ONLY AS NEEDED TO REMOVE DEAD AND DAMAGED WOOD AND TO MAINTAIN THE NATURALISTIC FORM OF THE SHRUB. NEVER MECHANICALLY SHEAR EVERGREEN SHRUBS.

TREES

- PROVIDE AFTERCARE FOR NEW TREE PLANTINGS FOR THE FIRST THREE YEARS.
- DO NOT FERTILIZE TREES, IT ARTIFICIALLY STIMULATES THEM (UNLESS TREE HEALTH WARRANTS).
- WATER ONCE A WEEK FOR THE FIRST YEAR; TWICE A MONTH THE SECOND, ONCE A MONTH THE THIRD YEAR.
- PRUNE TREES ON A FOUR-YEAR CYCLE.

ORNAMENTAL GRASSES/PERENNIALS

- APPLY LOW-NITROGEN & LOW-PHOSPHORUS 2-10-10 FERTILIZER AS GROWTH RESUMES IN THE SPRING.
- WATER THOROUGHLY.
- GRASSES/PERENNIALS DO NOT NEED TO BE CUT DOWN BEFORE WINTER. IN FACT, THEY ARE ATTRACTIVE WHEN LEFT STANDING AND THE FOLIAGE HELPS TO INSULATE THE CROWN OF THE PLANT.
- CUT BACK THE FOLIAGE TO ABOUT 4-6 INCHES IN THE SPRING BEFORE GROWTH RESUMES. WHEN FOLIAGE IS REMOVED, SPRING GROWTH WILL BEGIN EARLIER. OLD FOLIAGE LEFT ON THE PLANT CAN DELAY THE CROWN'S WARMING AND SUBSEQUENT GROWTH BY AS MUCH AS 3 WEEKS.

WATERING

- WATERING TREES, SHRUBS AND PERENNIALS SHOULD BE DONE WEEKLY UPON ESTABLISHMENT FOR 6 MONTHS.

LANDSCAPE MAINTENANCE NOTES 3
NOT TO SCALE

PLANTING SCHEDULE -TREES, SHRUBS, PERENNIALS, & GRASSES

	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
DECIDUOUS SHADE AND FLOWERING TREES							
* ~ ^	CS	1	CATALPA SPECIOSA	NORTHERN CATALPA	3" CAL.	AS SHOWN	B&B, SPECIMEN
* ~ ^	CH	2	CELTIS OCCIDENTALIS	COMMON HACKBERRY	3" CAL.	AS SHOWN	B&B
* ~ ^	GD	3	GYMNOCLADUS DIOICUS 'ESPRESSO-JFS'	ESPRESSO KENTUCKY COFFEETREE	3" CAL.	AS SHOWN	B&B
* ~ ^	LS	10	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	'SLENDER SILHOUETTE' SWEETGUM	3" CAL.	AS SHOWN	B&B
* ~ ^	NS	10	NYSSA SYLVATICA	BLACK TUPELO	3" CAL.	AS SHOWN	B&B
ORNAMENTAL TREES							
*~^	AC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	6-7' HT.	AS SHOWN	B&B
EVERGREEN TREES							
*	AB	1	ABIES BALSAMEA	BALSAM FIR	#10	15' O.C.	POT
*	ABF	7	ABIES FRASERI	FRASER FIR	7-8' HT.	10' O.C.	B&B
* ^	TON	5	THUJA OCCIDENTALIS 'NIGRA'	AMERICAN ARBORVITAE	7-8' HT.	5' O.C.	B&B
* ^	TOD	3	THUJA OCCIDENTALIS 'DEGROOT'S SPIRE'	DEGROOT'S SPIRE ARBORVITAE	7-8' HT.	4' O.C.	B&B
SHRUBS							
* ~ ^	NJ	8	CEANOTHUS AMERICANUS	NEW JERSEY TEA	#3, 24" HT. MIN	36" O.C.	POT
* ~ ^	RR	3	CLETHRA ALNIFOLIA 'RUBY RED'	RUBY SPICE SUMMERSWEET	#5, 24" HT. MIN.	48" O.C.	POT
^	HY	9	HYDRANGEA PANICULATA 'LITTLE LIME'	LITTLE LIME PANICLE HYDRANGEA	#5, 24" HT. MIN.	5' O.C.	POT
~	IC	5	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL HOLLY	#5, 24" HT. MIN.	24" O.C.	POT
* ~ ^	IG	81	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	#7, 24" HT. MIN.	36" O.C.	POT
* ~ ^	JV	3	JUNIPERUS VIRGINIANA 'BAR HARBOR'	BAR HARBOR JUNIPER	#3, 24" HT. MIN.	6' O.C.	POT
* ~ ^	MP	40	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	#5, 24" HT. MIN.	5' O.C.	POT
PERENNIALS/GRASSES							
* ~ ^	BA	12	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO	#1	48" O.C.	STAGGERED
~ ^	CK	37	CALAMAGROSTIS 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#2	24" O.C	STAGGERED
* ~ ^	CA	16	CAREX AMPHIBOLA	CREEK SEDGE	#1	18" O.C.	STAGGERED
~ ^	PM	60	HEMEROCALLIS 'PARDON ME'	PARDON ME DAYLILY	#1	18" O.C.	STAGGERED
~ ^	HR	50	HEMEROCALLIS 'ROSY RETURNS'	ROSY RETURNS DAYLILY	#1	18" O.C.	STAGGERED
~ ^	LM	20	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LIRIOPE	2 GAL.	18" O.C.	STAGGERED
* ^	EP	66	ECHINACEA PURPUREA 'CHEYENNE SPIRIT'	CHEYENNE SPIRIT CONEFLOWER	#1	12" O.C.	STAGGERED
~ ^	MS	15	MISCANTHUS SINENSIS 'MORNING LIGHT'	SILVER VARIEGATED MAIDEN GRASS	#2	36" O.C.	STAGGERED
* ^	PD	66	PHLOX DIVARICATA 'BLUE MOON'	BLUE MOON PHLOX	#1	12" O.C.	STAGGERED
* ~ ^	RF	57	RUDBECKIA FULGIDA VAR. SPECIOSA 'VIETTE'S LITTLE SUZY'	VIETTE'S LITTLE SUZY BLACK EYED SUSAN	#1	12" O.C.	STAGGERED
* ~ ^	SN	60	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1	24" O.C.	STAGGERED
* ~ ^	VL	24	VERNONIA LETTERMANNII	IRON BUTTERFLY	#1	24" O.C.	STAGGERED
ANNUALS							
		TBD SF	ASSUMING A SPRING PLANTING, UTILIZE "PROVEN WINNERS" ANNUALS – "NEPTUNE MIX" #1 POTS, SUPERBENA® STORMBURST VERBENA, SUPERBELLS® YELLOW CHIFFON™ CALIBRACHOA, LAGUNA® SKY BLUE™ LOBELIA				

* DENOTES NATIVE SPECIES OR NATIVE CULTIVAR
~ DENOTES SALT TOLERANCE OR MODERATE SALT TOLERANCE
^ DENOTES DROUGHT TOLERANCE OR MODERATE DROUGHT TOLERANCE

PLANT SCHEDULE 2
NOT TO SCALE

DOVER ZONING SUMMARY - LANDSCAPE

REGULATION	ITEM	REQUIRED / ALLOWED	PROPOSED
§153-13A(A)(20)	A DETAILED LANDSCAPE OPERATIONS AND MAINTENANCE PLAN, DEVELOPED IN ACCORDANCE WITH THE REQUIREMENTS OF §153-14G. SITE PLANS SHALL PROVIDE FOR THE PROPER MANAGEMENT OF LANDSCAPING, ENSURING THAT LANDSCAPING IS NOT UNINTENTIONALLY DAMAGED AS A RESULT OF SNOW REMOVAL OR GENERAL TRAFFIC FLOW, PEDESTRIAN OR OTHERWISE.	OPERATION AND MAINTENANCE PLAN	SEE SHEET #3, L-502
§153-14.G(1)(C)	SHRUBS AND HEDGES SHALL BE A MINIMUM OF 24 INCHES IN HEIGHT WHEN MEASURED IMMEDIATELY AFTER PLANTING. GROUND COVERS AND PERENNIALS MAY BE LESS.	SHRUBS MINIMUM 24" HT.	SEE PLANT SCHEDULE
§153-14.G(1)(H)	A MAINTENANCE PLAN SHALL BE PROVIDED WITH THE SITE PLAN APPLICATION. ALL LANDSCAPED AREAS SHALL RECEIVE REGULAR MAINTENANCE AND UPKEEP. SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH). BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS, SUCH AS THE USE OF LOW-PHOSPHORUS FERTILIZER AND SLOW-RELEASE NITROGEN, SHALL BE INCLUDED IN THE MANAGEMENT PLAN. IF OWNERSHIP OF A SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.	OPERATION AND MAINTENANCE PLAN	SEE SHEET #3, L-502
§153-14.G(2)(A)	MINIMUM INTERIOR PARKING LOT LANDSCAPING REQUIREMENTS.	FOR 51-200 PARKING SPACES, THERE SHALL BE 8% MINIMUM OF INTERIOR LANDSCAPING	36,017 SF PARKING LOT / 2,970 LANDSCAPE = 12% LANDSCAPE AREA PROVIDED
§153-14.G(2)(C)	ISLANDS AT THE END OF A ROW OF PARKING SPACES ARE ENCOURAGED TO PROTECT PARKED VEHICLES, INCREASE SAFETY IN PARKING LOTS, AND PROVIDE SPACE FOR LANDSCAPING. THE MINIMUM SIZE FOR LANDSCAPED ISLANDS SHALL BE 250 SQUARE FEET IN TOTAL AREA AND SHOULD INCLUDE TREES WITH SHRUBS, PERENNIALS, AND GROUND COVERS PLANTED EN MASSE AMONG THE TREES.	PARKING ISLANDS MIN. 250 SF LANDSCAPED	769± SF LANDSCAPE ISLANDS
§153-14.G(3)(A)	ALONG THE PERIMETER OF PARKING LOTS WITH 10 OR MORE SPACES, DECIDUOUS AND/OR EVERGREEN SHADE TREES SHALL BE PLANTED AT 35 FEET ON CENTER WITHIN THE BUFFER AREA REQUIRED BY § 153-17C. TREES SHALL BE SPECIES TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM CALIPER OF 3 INCHES (MEASURED AT FOUR FEET ABOVE GRADE LEVEL). WITHIN THE PERIMETER BUFFER, SHRUBS SHALL BE PLANTED BETWEEN THE TREES AT FIVE FEET ON CENTER. THE SHRUBS SHALL BE A MIX OF DECIDUOUS AND EVERGREEN SPECIES, TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM HEIGHT OF TWO FEET AT THE TIME OF PLANTING. ALL TREES, SHRUBS AND LANDSCAPING MATERIALS SHALL BE MAINTAINED IN GOOD CONDITION SO AS TO PRESENT A HEALTHY, NEAT, AND ORDERLY APPEARANCE.	SHADE TREES ALONG PERIMETER OF PARKING LOT 35' O.C. AND 3" MIN. DBH, SHRUBS MIN. 5' O.C AND MIN. HT OF 24"	SEE PLAN AND PLANT SCHEDULE
§153-14.G(3)(B)	TREES SHALL BE SALT-AND DROUGHT -TOLERANT, NATIVE OR NONINVASIVE SPECIES, AND HAVE A STRUCTURE AND GROWTH FORM WHICH PREVENTS THEM FROM OBSTRUCTING SIDEWALKS AND WALKWAYS.	TREES SHALL BE SALT-AND DROUGHT -TOLERANT, NATIVE OR NONINVASIVE SPECIES,	SEE PLANT SCHEDULE
§153-14.G(3)(C)	TO FOSTER BIOLOGICAL DIVERSITY, TREES PLANTED ALONG A GIVEN STREET SHALL USE THE 10-20-30 RULE (NO MORE THAN 10% OF THE TREES SHALL BE OF THE SAME SPECIES, NO MORE THAN 20% IN THE SAME GENUS, AND NO MORE THAN 30% IN THE SAME FAMILY).	> 10% OF THE TREES SHALL BE OF THE SAME SPECIES, > 20% IN THE SAME GENUS, > 30% IN THE SAME FAMILY	0% SAME SPECIES, 0% GENUS, 0% FAMILY

ZONING SUMMARY 1
NOT TO SCALE

JACQUELINE B. TRAINER 00169 LICENSED LANDSCAPE ARCHITECT STATE OF NEW HAMPSHIRE
03.12.2026
PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	02-25-26	PER TRC #1 REVIEW COMMENTS

OWNER:
ARC CAFEUSA001 LLC
11995 EL CAMINO REAL
SAN DIEGO, CA 92130

APPLICANT:
LAFRANCE BOWDEN HOSPITALITY II, LLC
41 OLD BEDFORD ROAD
WESTPORT, MA 02790

PROJECT:
TOWNEPLACE SUITES
BY MARRIOTT
47 CENTRAL AVE
DOVER, NH 03820
(MAP 17, LOT 76)

PROJECT NO.	1173-31	DATE:	01-30-26
SCALE:	AS SHOWN	DWG. NAME:	L-1173-31
DESIGNED BY:	JBT	CHECKED BY:	BDJ

PREPARED BY:
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DRAWING TITLE: LANDSCAPE NOTES
SHEET No. L-502

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