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, May 14, 2024**
Meeting Time:	**7:00 pm**

1. **CITIZENS' FORUM**
2. **APPROVAL OF THE PRIOR MINUTES**
   - April 23, 2024 Regular Meeting Minutes
3. **OLD BUSINESS**
4. **NEW BUSINESS**
   A. Consideration and acceptance of an Amendment for Downtown Dover Storage, LLC, Assessor's Map 4, Lot 5, zoned CBD-G, located at 14 Broadway. (Proposal is to construct a ~14,770 s.f. 4-story residential building with 38 units with revised covered parking and relocating an internal staircase.) *(WAIV-2024-0004)

   B. Consideration and acceptance of a Site Review for Jared Lusk (Owners: Lionel R Jr & Kristina L Paradis), Assessor's Map F, Lot 2, zoned IT and R-40, located at 180 Tolend Road. (Proposal is to construct and operate a 104' wireless telecommunications facility) *(SITE-2023-0012)

   C. Consideration and acceptance of a Transfer of Development Rights for Tritech Engineering (Owners: Stonearch Development, LLC), Assessor's Map F, Lot 3, zoned R-40, located at 210 Tolend Road. (Proposal requests to purchase 33 TDR units (10 "unrestricted" & 23 "restricted size units"). A site plan for a current proposal of 53 units would need further review and a future Planning Board vote). *(TRAN-2024-0003)

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. Follow us on Twitter @DoverNHPlanning and 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, April 23, 2024**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Mark Speidel (Vice Chair), Kyle Pimental, Fergus Cullen (Councilor), Ken Mavrogeorge, Tom Clark, Jeff Sanborn (Alternate), Melina Gambino (Alternate)
Members Not Present (excused): Jon Elliard, George DeBoer, Erinn Kaspari
Members Not Present (un-excused): None
Staff Present: Donna Benton, Director of Planning and Community Development

G. Cruikshank (Chair), called the meeting to order at 7 p.m and noted that Jeff Sanborn would sit for Erinn Kaspari and Melina Gambino would sit in for George DeBoer.

1. CITIZENS' FORUM

Citizens Forum Open
No one spoke
Citizens Forum Closed

2. APPROVAL OF THE PRIOR MINUTES

- April 9, 2024 Regular Meeting Minutes

Motion T. Clark moved to approve the regular meeting minutes of April 9, 2024 as submitted. Seconded by: F. Cullen. Vote: U/A

3. OLD BUSINESS

4. NEW BUSINESS

A. Consideration and acceptance of a Lot Line Adjustment for Peter and Kimberly Clairmont, Assessor's Map J, Lots 29 and 29-2, zoned R-40, located at 303 Old Garrison Road & Old Garrison Road. *(LOTA-2024-0004)

D. Benton explained that the applicants are requesting to revise the lot lines between two parcels that they own, 303 Old Garrison Road and a neighboring vacant parcel on Old Garrison Road. This proposed revision will result in adding approximately 57,188 s.f. from Lot 29 to Lot 29-2, leaving Lot 29 with 452,385 sf. and Lot 29-2 with 147,829 s.f. Each lot will remain compliant with the underlying zoning district.

As a Lot Line Adjustment, this application did not appear before the TRC.

Christopher Berry, Berry Survey & Engineering represented and explained the application noting the southern parcel was created in the mid-1980s and the remaining parcel has remained in the family since. The request is to revise the lot line between the two, and increase the size of the smaller parcel which will allow for a larger building envelope. The remaining land's frontage will still meet requirements. The upland there will still be available for future use.

Motion: T. Clark moved to accept the application and declared no regional impact. Seconded by: F. Cullen. Vote: U/A

Public hearing opened.
Sue Hay, 314 Old Garrison asked for clarification about the existing and the proposed lot line adjustments, whether the adjustment will leave a buildable lot, and if the survey flags that were put in near her property are in relation to this proposal.
Public hearing closed.

DRAFT

Mr. Berry addressed public comment explaining details of the proposed the lot line adjustment; which lots would be more ideal for development and which will have less. He also noted the survey flagging was part of his process for this project.

STAFF RECOMMENDATION – Lot Line Adjustment:
Chapter §157-17 of the Land Subdivision Regulations of the City Code provides for the adjustment of existing lot lines between two or more lots. This plan is consistent with those regulations.

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 Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford County Registry of Deeds which additionally shall include:
    a. Planning File Number #LOTA-2024-0004
    b. The owner's signatures
    c. The LLS stamp and signature

Motion: M. Gambino moved to approve the Lot Line Adjustment with subsequent conditions set by staff. Seconded by: K. Pimental. Vote: U/A

B. Consideration and acceptance of an Extension Request for an approved Site Review Plan for Harlech, LLC, Assessor's Map 31, Lot 5, zoned CBD-TOD, located at 47 Chestnut Street. (Proposal is to extend the period of time to seek financing). *(WAIV-2024-0005)

D. Benton explained that the applicant was previously approved on May 10, 2022 of a CUP for solar/green roof standards, a CUP for dimensions in the CBD, and a site plan for a mixed use building mostly residential with restaurant and is seeking to extend the statutory exemption period from twenty-four (24) months to thirty-six (36) months due to the rise in interest rates and building costs which have complicated securing financing for the project, necessitating the extension.

§153-9 states that Planning Board approval shall be valid for five years from the date of said approval. If a building permit has not been issued within such time constraints, then said approval shall be considered null and void, except if the Planning Board grant time extensions. However, Conditional Use Permits do not expire per our regulations.

Additionally, RSA 674:39 states that any site plan approved by the Planning Board shall be immune from any future changes to local site plan, subdivision, impact fee regulations and zoning ordinance amendments if active and substantial development, as defined by the municipality, is initiated within a twenty-four (24) month period following the Planning Board's initial approval of the plan.

The statute elaborates that the Planning Board may, at their discretion, extend the twenty-four (24) month exemption deadline.

FX Bruton, Bruton and Berube represented the application and explained the item by giving background information, statutes in play, timeline request, the challenge of financing hurdles involved and status/progress update for the board. Discussion ensued regarding the next step if this project does not happen in the next 12 months.

Motion: T. Clark moved to accept the application and declared no regional impact. Seconded by: M. Gambino. Vote: U/A

Public hearing opened.
No one spoke
Public hearing closed.

STAFF RECOMMENDATION- Extension Request
Pursuant to RSA 674:39.IV, "[t]he planning board may, for good cause, extend the 24-month period set forth in subparagraph I(a)", which is the deadline in which the owner must initiate active and substantial development or building to continue exempting the owner from any future local ordinance or regulation amendments.

Planning Staff recommends the Extension Request be approved, as defined in RSA 674:39.IV, for both the Site Plan (P21-84) and Conditional Use Permits (P21-85 and P22-29) from twenty-four (24) to thirty-six (36) months, with the same conditions of approval as outlined in the original Notices of Decision.

Motion F. Cullen moved to approve the Extension Request. Seconded by K. Mavrogeorge. Vote: U/A

The Chair announced Items 4C & D would be heard together.

C. Consideration and acceptance of a Conditional Use Permit for Future Automations, Inc. (Owner: DBIDA), Assessor's Map D, Lot 11-8, zoned IT, located at Quality Way. (Proposal is for the construction of two (2) commercial buildings with 1,631 s.f. of wetland impact and 39,820 s.f. of wetland buffer impact). *(COND-2024-0005)

D. Consideration and acceptance of a Site Review for Future Automation, Inc. (Owner: DBIDA), Assessor's Map D, Lot 11-8, zoned IT, located at Quality Way. (Proposal is to construct a light manufacturing facility consisting of two (2) buildings 24,000 s.f and 10,000 s.f. each with office space, and associated infrastructure.) *(SITE-2024-0002)

D. Benton explained that the applicant is proposing to construct a light manufacturing facility at Quality Way consisting of two buildings, the larger building will be 24,000± square feet and the smaller building will be 10,000± square feet, each with office space, parking, and associated infrastructure. Both of the proposed buildings will consist of floor area for light manufacturing and office space with separate parking and loading areas but both buildings will be accessed by a shared driveway.

The applicant also seeks a CUP for wetland and wetland buffer impacts. In total, the project will create 39,820± square feet of wetland buffer impact and the proposed access driveway for the facility will require a culverted wetland crossing which will create 1,631 square feet of wetland impact.

Two waivers are also being sought as part of this application to allow a minimum caliper of 2.5" for new trees where a minimum caliper of 3" is required and to allow parking in the front of the buildings where it is required in the IT District that a majority of parking spaces shall be located to the side or rear of the buildings.

The parcel is currently owned by the Dover Business & Industrial Development Authority (DBIDA) and the applicant has met with DBIDA and received an endorsement to proceed with the project. The Conservation Commission also reviewed and endorsed the application at their April 8, 2024 meeting.

Joe Griffin, CivilWorks NE represented and explained the application addressing property location, current vacancy, construction proposal and uses. He highlighted driveway, utility and drainage improvements, access and wetland disturbance. This parcel was created through the TDR process and he described the sending areas. He described the reason for the waiver request for parking and the required permitting.

He addressed board questions relating to new job potential, current lot clearing (not the parcel in question) and stormwater from Quality Way.

Motion: M. Gambino moved to accept the applications and declared no regional impact. Seconded by: T. Clark. Vote: U/A

Public hearing opened.
Douglas Porter, 29 Quail Dr had some questions about the land area to the left and if the trees will remain as a buffer or not; are there any hazardous materials being used in the proposed operations; what is the lighting going to be on the outside of the building; where is the proposed bioretention pond going; will there be any buffer between his property and the proposal to minimize sightlines; is the land behind buildable and are there plans for that.

Jake Banaian, 11 Quail Dr spoke on behalf of neighbor Doug Porter. He commented on the negative aspects of changing this area from residential to commercial and the daily activities of trucks, diesel fuel, lighting, noise etc. He is concerned about developing on wetlands and the conflict of the City owning the property and then having authority over how it is allowed to be developed. He asked the board to put themselves in the shoes of the residents of Quail Dr and keep commercial separate from residential.

Barbara Civiello, 3 Quail Dr agreed with her neighbors' comments. She is not opposed to the applicant, but rather the slippery slope of commercial development in that neighborhood. 18 months ago, a storage facility was approved. The residents there see the tree clearing, wetlands and other concerns they deal with daily. She noted it's not fair that the Banaians, who have acreage, cannot build additional residential homes on their land due to the wetlands, but adjacent, the storage barn and this proposal seem to be approved. She asked the board to consider what interruptions to wetlands do to residential properties.
Public hearing closed.

David Choate, listing agent for the property addressed public comment relating to Future Automation. The proposed number of new jobs will be 20-30. He explained what the company does, noting it is a clean, high-tech business without heavy machines. Enterprise Park has existed for many years and this is one of the last two lots. The City has sold this land inexpensively to bring new and better jobs and increase the tax base. He noted there is no hazardous materials used.

Mr. Griffin addressed public comment:
The lighting proposed will be the minimum needed for security; the most hazardous materials used is the paint; the pond details were explained; buffer: there is no intention to develop that portion of the property at this time; planning to expand the business and run two shifts on site; no access to drive behind the building-there are wetlands there that can't be developed; wetland impacts and mitigation were discussed.
D. Benton addressed the history of the zoning changes in the neighborhood.

The applicant further addressed board questions relating to: distance from proposed building to abutting lots (300') and the buffer in that area being trees and wetlands.

STAFF RECOMMENDATION- Wetlands Protection District CUP:
The Wetlands Protection District ordinance provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant considered the criteria and located the two buildings, driveways, and associated infrastructure to minimize wetland buffer impacts and has limited wetland impact to the access driveway. The design for the project has incorporated site characteristics such as the existing slope and soil type to further minimize wetland buffer and wetland impacts. The applicant has applied for the relevant NHDES Wetlands Permit and Alteration of Terrain Permit. Applicant has received endorsement by the Conservation Commission.

The Planning Department recommends the Planning Board make the necessary and supporting findings of fact, and to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Issuance of CUP:
1. Approval of SITE-2024-0002;
2. Copies of the NHDES Wetlands Permit and NHDES Alteration of Terrain Permit be submitted to the Planning Department and added to the plan set coversheet.

Mr. Griffin noted the waiver for the trees is because a 2.5" caliper tree will root better and grow better in the first several years. Those are the trees in the parking area- not the buffer areas.

Motion T. Clark moved to approve the Wetlands Protection District Conditional Use Permit with the subsequent conditions. Seconded by M. Gambino. Vote: U/A

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 rational for the waivers meets criterion (1) and waiving such standards and requirements is not contrary to the spirit or intent of the ordinance.

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 approved waivers for §153-14G(3)(a) to allow a minimum caliper of 2.5" and §153-15C(2) to allow parking in the front of the building and that the Board found the criteria of Chapter 153-21 have been met.

DRAFT

Motion: M. Speidel moved to grant the waiver request with subsequent condition set by staff as it meets criteria. Seconded by: M. Gambino. Vote: U/A.

STAFF RECOMMENDATION- Site Plan:
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 the Plans:
1. Approval of COND-2024-0005;
2. Copies of the NHDES Wetlands Permit and NHDES Alteration of Terrain Permit be submitted to the Planning Department and added to the plan set coversheet;
3. Include note indicating solar readiness of buildings;
4. Payment of Planning Board application fee;

Subsequent Condition to Be Met Prior to Construction:
4. A 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:
5. Payment of Water and Sewer Investment Fees if applicable at time or request of service.

Subsequent Conditions to Be Met Prior to Occupancy:
6. Issuance of Certificate of Occupancy;
7. Payment of Impact Fees as noted in the invoice attached to the Decision Letter unless a change is made to the impact fee policy;
8. Confirmation, by staff, that the wetlands buffer signs are in place, or replaced if damaged during construction; and
9. Surety or other form of security acceptable to the City is provide for any unfinished work.

Motion: T. Clark moved to approve the Site Plan with subsequent conditions set by staff as it meets criteria. Seconded by: K. Mavrogeorge. Vote: U/A.

The Chair announced Items 4E & F would be heard together.

E. Consideration and acceptance of a Conditional Use Permit Stonefield Engineering & Design (Owners: Dover Retail Management, LLC & R W Realty Inc), Assessor's Map 38, Lots 15-A and 15-B, zoned C, located at 1-3 Webb Place and Webb Place. (Proposal is for additional parking beyond the maximum allowed). *(COND-2023-0054)

F. Consideration and acceptance of a Site Review for Stonefield Engineering & Design (Owners: Dover Retail Management, LLC & R W Realty Inc.), Assessor's Map 38, Lots 15-A and 15-B, zoned C, located at 1-3 Webb Place and Webb Place. (Proposal is for demolition of current building and constructing a 3,300-sf bank with a drive through ATM, (20) twenty parking spaces). *(SITE-2023-0011)

D. Benton explained that the applicant is proposing to demolish the currently-existing building and construct a 3,330 square foot bank with a drive-through ATM and twenty parking spaces. This application was before the Technical Review Committee on August 31, 2023, November 2, 2023, March 7, 2024, and March 28, 2024.

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The applicant also seeks a CUP to allow additional parking spaces for a total of twenty spaces where a maximum of twelve parking spaces are permitted by right.

Three waivers are also being sought as part of this application to be in excess of the allowable maximum lighting uniformity ratio and allowable lighting uniformity ratio for minimum illumination for site security and compliance standards. The third waiver is to allow a second driveway with less than the 400' all-season sight distance and this waiver has been granted by the Community Services Director and a vote is not required by the Board.

Josh Kline, Stonefield Engineering & Design represented and explained the application noting the significant decrease in impervious surfaces with the proposal. He addressed the CUP request for additional parking and noted they will be adding two additional (total of 3) EV chargers with porous asphalt. He addressed the lighting waivers.

Board discussion with the applicant addressed EV charger requirements, building design (brick requested), parking calculation formula, mixed use options, discussion and explanation from the applicant ensued about the use of physical banks these days and the daily operations Chase offers, and multiple accesses to the site.

Motion: M. Gambino moved to accept the applications and declared no regional impact. Seconded by: T. Clark. Vote: U/A

Public hearing opened.
No one spoke
Public hearing closed.

STAFF RECOMMENDATION- CUP for Parking Maximum
§153-14.D(5) of the Site Plan Review Regulations allows an avenue for applicants to seek additional parking spaces in excess of the applicable maximums if the applicant provides an analysis as to why the additional spaces are essential to the property's use, that off-street parking is not viable, that the additional spaces be paved using pervious pavement, and that required electric vehicle infrastructure is installed.

The Planning Department recommends the Planning Board make the necessary and supporting findings of fact, and to approve the Conditional Use Permit, as the plans meet the standards outlined.

The applicant clarified the EV chargers are available for anyone's use: employee or public.

Motion F. Cullen moved to approve the Conditional Use Permit with the subsequent conditions. Seconded by T. Clark. Vote: U/A

STAFF RECOMMENDATION-Waivers:
§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."

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Planning Staff believes the applicant's rational for the waivers meets criterion (2) and waiving such standards and requirements is not contrary to the spirit or intent of the ordinance.

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 conditions:

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

1. Ensure site lighting is either screened from illuminating adjacent properties, or, provide written permission from any adjacent property owner to permit the illumination of their property.
2. Add a note that the Planning Board approved waivers for §153-14.(E)(2)(b), Parking area lighting, Uniformity Ratio and Parking area lighting, Minimum Illumination Level and that the Board found the criteria of §153-21 have been met.
3. Add note that the second driveway has been permitted as the Community Services Director found a hardship to comply with §157-50.C.

Motion: F. Cullen moved to grant the waiver requests with subsequent conditions set by staff as it meets criteria. Seconded by: T. Clark. Vote: U/A.

STAFF RECOMMENDATION-Site Plan:
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. Revise plan and resubmit for Final Planning Board signature with the following revisions:
   1.1. Planning Board acknowledge lot merger.
   1.2. Add note that no additional parking may be added onto the site without Planning Department review of parking and need of another CUP.
   1.3. Update floor plan to reflect changes submitted to TRC on March 28, 2024.
   1.4. Add note that the building will be solar ready.
   1.5. Applicant pay photo copy fees per invoice.
   1.6. Add detail of EVSE charging pedestal.

Subsequent Condition to Be Met Prior to Construction:

2. A 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:

3. Payment of Water and Sewer Investment Fees if applicable at time of request of service.

Subsequent Conditions to Be Met Prior to Completion:

4. Issuance of the Certificate of Occupancy.
5. Payment of Impact Fees as noted in the invoice attached to the Decision Letter unless a change is made to the impact fee policy;
6. Surety or other form of security acceptable to the City is provided for any unfinished work.

Motion: F. Cullen moved to approve the Site Plan with subsequent conditions set by staff as it meets criteria. Seconded by: T. Clark. Vote: U/A.

5. STAFF COMMENTS

- D. Benton reminded the Board that SRPC is conducting a housing needs survey for Dover that will be running to the end of the month and Board Members are encouraged to participate and share the survey.
- TRCs since last meeting:
    - Conditional Use Permit for Granite State Gas Transmission, Unitil (Owners: Dover Point Cooperative, Inc), Assessor's Map M, Lot 47-C, zoned R-12, located at 1 Polly Ann Trailer Park. (Proposal is the replacement of gas pipe section that will cause 17,015 s.f of impacts to wetlands.) (COND-2024-0004)
- TRCs coming up:
    - Amendment for Downtown Dover Storage, LLC, Assessor's Map 4, Lot 5, zoned CBD-G, located at 14 Broadway. (Proposal is to construct a 14,770 s.f. 4-story residential building with 38 units with revised covered parking and relocating internal staircase.) (WAIV-2024-0004) *[This item was previously heard by the Planning Technical Review Committee on March 28, 2024]*

6. MEMBER COMMENTS

- K. Pimental
    - Asked about Soul Yoga/ Bendi Bodhi locations/plans
- M. Speidel
    - Won't be at the next meeting
- The Chair signed the following:
    - Development Agreement for VC Dover mixed-used development at 30 Grapevine Dr.
    - Site Plan for paved parking lot at 256-264 Central Ave.

7. ADJOURNMENT

Motion: F. Cullen moved to adjourn at 8:26pm. Seconded by M. Gambino. Vote: U/A

DRAFT

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE # WAIV-2024-0004

Application Type:	Site Plan Amendment
Applicant(s):	Regan Development, Corporation
Owner(s):	Downtown Storage, LLC
Location:	12 & 14 Broadway (Assessor's Map 4, Lots 3 & 5)
Meeting Date:	May 14, 2024

INTENT: The Board previously approved a Site Plan and Conditional Use Permit (CUP) to construct a 4-story, 24-unit residential building with commercial space. The applicant seeks to amend the approved Site Plan to increase the number of residential units to 38, revise the parking layout, and relocate an internal staircase.

UNITS PROPOSED: 38 Residential Units (24 units previously approved)

AGENDA ITEM #: 4-A

ACREAGE: 0.45± acres

ZONING DISTRICT: CBD-G

EXISTING USE: Commercial

PROPOSED USE: Mixed-Use

SURROUNDING USES: Residential/Commercial

ZBA ACTION: None

PERMITS REQUIRED: City of Dover CUP to allow for less than 20% of building to be non-residential.

WAIVERS REQUIRED: None

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail.

TRC: 3/28/24 & 4/25/24

ATTACHMENTS: Application materials, previous site plan

Summary of Request and Background
On December 14, 2021, the Board approved a 4-story, 24-unit residential building with commercial space and a related CUP to allow for less than 20% of the building to be non-residential. The applicant seeks to obtain an amendment to their approved site plan to increase the number of residential units to 38, to revise the parking layout, and relocate an internal staircase.

This amendment request was reviewed by the TRC on March 28, 2024 and April 25, 2024 (minutes attached).

Parking is provided both onsite and via a lease for 18 Chapel Street.

Consistency with Land Use Regulations
Chapter 153-4 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 the Planning Board accept the application, open the public hearing, make findings, and vote to approve the Site Plan Amendment with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. A wall evaluation be conducted and sealed by a professional engineer and provided to Community Services prior to the issuance of a Certificate of Occupancy.
2. Revise EV parking configuration per Building Official's TRC comments.
3. Revise parking table to remove 4 Broadway parking spaces and revise total provided.
4. Provide:
   4.1. Letter from Licensed Pest Control Specialist regarding if a pest management plan is needed.
   4.2. Letter to serve from Eversource.
   4.3 Physical and digital copies (including CAD) of complete plan set which additionally shall include:
   a. Signature and stamp of PE, LLA, and LLS
   b. Owner's signature
   c. Add location of parking meter (to be paid for by owner) and installed per the City of Dover.

Subsequent Conditions to Be Met Prior to any Demolition or Construction Activity:

5. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Planning Director. Site Construction sign shall indicate level of visibility/noise/vibration disturbance anticipated each day.
6. Public art presented to Dover Arts Commission and Planning Staff and added to the site plan.

7. If pest control is required, the plan shall be implemented with proper monitoring.

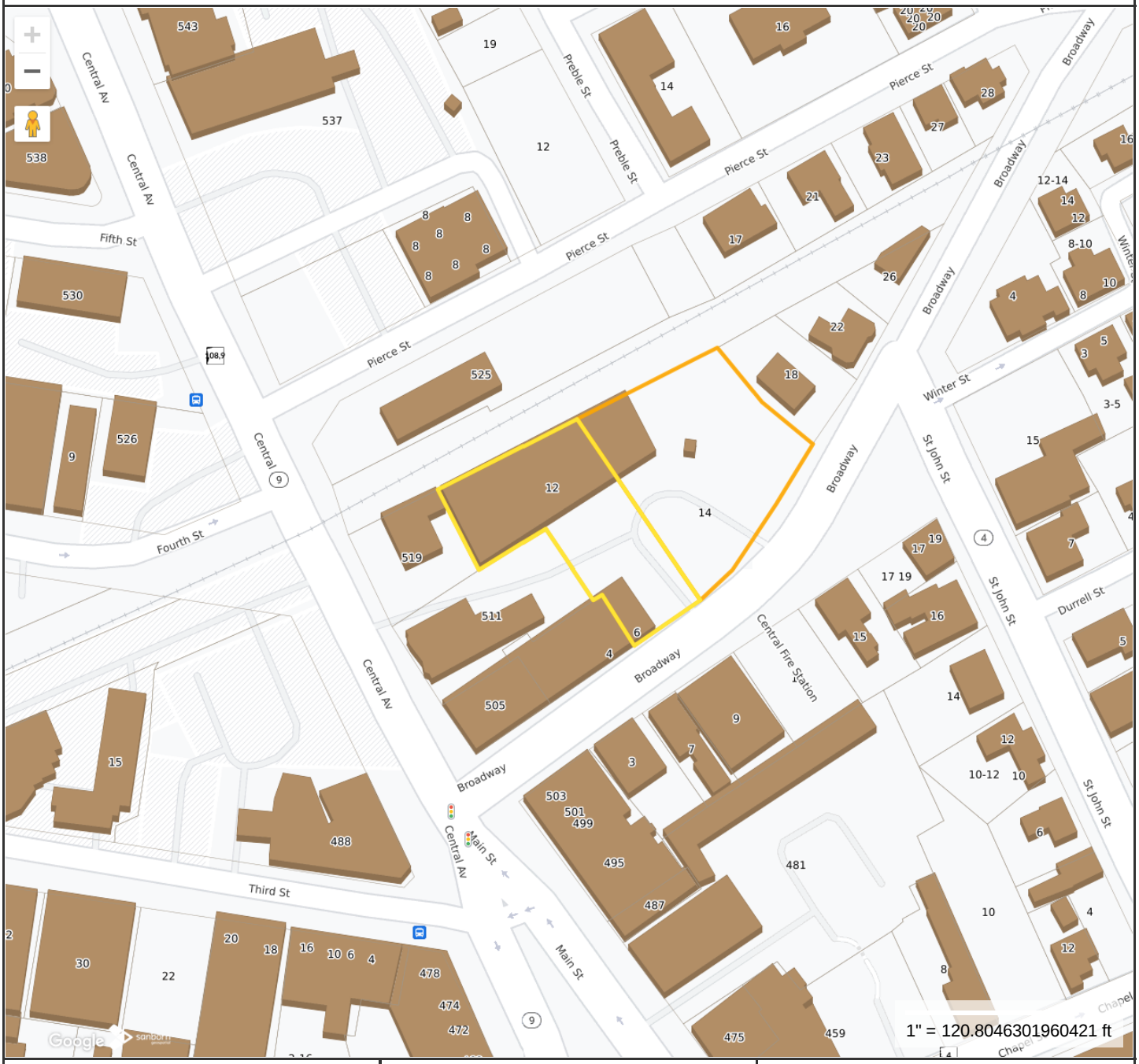
Subsequent Condition to Be Met Prior to Issuance of a Building Permit:

8. Water and sewer investment fees shall be paid at the time of request of service.

Subsequent Conditions to Be Met Prior to Occupancy:

9. Issuance of a certificate of occupancy.
10. Impact fees shall be paid per the invoice included with the Notice of Decision, unless impact fee policy changes.
11. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.
12. Parking meter installed at expense of the applicant to the satisfaction of the Parking Manager.
13. Public art installed.

WAIV-2024-0004 12 & 14 BROADWAY



Property Information

Location	12 BROADWAY
Owner	RANDALL MATTHEW
Land Use	
Zoning Code	CBD-G
Property Id	04003-000000

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 WAIV-2024-0004
FOR CITY OF DOVER, N.H.

Plan Type:	Waiver / Extension / Amendment	**Project:**		**App Date:**	03/07/2024
Work Class:	Plan	**District:**	None	**Exp Date:**	05/11/2024
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Amendment to Site Plan, increase number of units, revise parking layout, relocate internal staircase

Parcel: 04005-000000 Main	**Address:** 14 Broadway Dover, 03820 14 Broadway Main Dover, NH	**Zone:** CBD-G(Central Business District - Genera

Project Manager
Chris Raymond
Home: (603) 918-7266
Business: (603) 601-8154
Mobile: (603) 918-7266

Applicant
Matthew Perry
169 Ocean Boulevard PO Box 249 PO Box 249
Hampton, NH 03842
Home: (603) 793-1911
Business: (603) 601-8154
Mobile: (603) 793-1911

Owner
Ken Regan
Home: (914) 693-6613

Plan Custom Fields

Project Location	14 Broadway, Dover, NH 03820	Waiver Request Type	Amendment	Project Name	14 Broadway Development
Owner Phone	9146936613	Owner Name	Ken Regan	Original Plan Approval Date	Dec 15 2021 12:00AM
Owner Address	1055 Saw Mill River Road #204, Ardsley, NY 10502	Owner EMail	ken@regandevelopment.com	Plan ID Number	
Plan Type	Site Plan	Extension Request Detail		Condition / Portion of Plan to be Amended	Number of building units and parking count
Amendment Request Detail	The project is proposing to increase the number of units to 38 in the apartment building, leasing 6 parking spaces from the abutting lot (Map 4, Lot 3) and 10 spaces from the Dover Housing Authority (10 Chapel Street), revising the layout of the covered parking beneath the building, and relocating an internal staircase eliminating the need for a sidewalk on the northeast side of the building.	Site / Subdivision Portion of Plan to be Waived		Waiver Request Detail	

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Matthew_Perry_3/7/2024.jpg	03/07/2024 17:18	Perry, Matthew		Uploaded via CSS
2024.03.28_PlanningTechnicalReviewCommittee.Agenda.pdf	03/13/2024 14:21	Blonigen, Rachel		TRC Agenda
2024.03.28_PlanningTechnicalReviewCommittee.14 Broadway_WAIV-2024-0004.pdf	04/01/2024 10:20	Blonigen, Rachel		TRC Draft Minutes
2024.04.25_PlanningTechnicalReviewCommittee.Agenda.pdf	04/15/2024 17:32	Blonigen, Rachel		TRC Agenda

PLAN SNAPSHOT REPORT (WAIV-2024-0004)

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00007020	Planning Waiver / Extension /Amend Application Fee	$200.00	$200.00
	Total for Invoice INV-00007020	$200.00	$200.00
	Grand Total for Plan	**$200.00**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	04/25/2024	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: 14 Broadway

- Have the first-floor commercial spaces been filled? Business Development would be happy to refer inquiries for those spaces
- Trends in commercial space inquiries to OBD suggest demand is highest for personal service businesses, followed by restaurant and retail. First-floor office space may take longer to fill.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: Project: WAIV-2024-0004: 14 Broadway
TRC Meeting: Meeting 1 – March 28, 2024
Reviewer: Kenneth Mavrogeorge, PE
Checked by: Engineering Staff
Comments:

- General Comments:

o Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. Engineering is currently in the final stages of updating this document. The Applicant should be prepared to conform to the currently adopted guidelines when they are adopted. https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf

o Coordinate with Community Services (Engineering Department) for latest City Standard Details that have been updated since the previous approvals.

o Add note that Design Engineer shall provide signed letter to City Engineer certifying that the stormwater management system has been installed in accordance with approved plans.

o It is recommended that the Applicant replace the entire sidewalk that abuts the Applicant's property.

o Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing structures on the property.

- Sheet C-5:

o Note is shown to evaluate use of existing wall as retaining structure. There is insufficient information on the plan about this wall to design a replacement wall. At a minimum the applicant should show the proposed top and bottom of wall and which side those are on. If a new wall is needed, is there enough room to install the wall? It appears to be on the property line with the B&MRR. Recommend that that evaluation be conducted and sealed by a professional engineer and provided to Community Services as a condition of approval prior to the issuance of a CO.

- Sheet C-6:

o DMH7 is shown on a line that is called out as two different material types. Please confirm the size, condition, and material of the pipe.

o Confirm the size of DMH7. Based on the quantity and angle of pipes entering the structure seems like they could conflict with one another.

o Show slope of proposed pipes on plan.

- Sheet C-7

o Show slope of proposed pipes on plan.

o Show existing water services cut and capped at water main in Central and Broadway.

o The sewer main in Broadway does not match the City's GIS database. The sewer runs towards St. John Street.

o Show the 6-inch sewer service wyed into the sewer main not into the SMH.

o The sewer main that is being connected to may be an 8-inch PVC not a 10-inch as indicated on the plans.

o Show the existing sewer service cut and capped in Central Ave.

o There is an existing metal pole at the location of the proposed electric riser pole. Please note that that metal pole shall be salvaged to the City.

- Sheet C-11:

o Remove the mechanical joint restraint detail. The connection should be a stainless steel tapping sleeve.

- Traffic Impact Study:

o The new analysis shows an increase of 66 trips over the previous analysis. It is recommended that the Applicant's traffic engineer review the triangle intersection of Broadway and St. John and comment on improvements to the traffic flow in the area given the increase in traffic to the site where none exists presently.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	03/13/2024	04/10/2024	04/01/2024

Comments: 14 Broadway

- Remove the existing conditions layer from Sheet C-5 and other subsequent sheets, where jersey barriers, pavement markings, etc. to be removed. Some labels are replicated on multiple sheets.
- Contractor will be required to provide signs and barriers for sidewalk closure, if applicable.
- Sheet C-10 and related notes for cap and reuse of building wall does not show and dimensions of the wall. Provide more detail or clarify as necessary.
- Except as appears to be shown on landscaping Sheet L-1, the plan set is confusing on the proposed layout of the space between Lots 4-20 and 4-3 (where the jersey barriers are to be removed). Potential concern with lack of protections from vehicles on Lot 4-20.
- Sheet PB-08, View from Broadway Looking North: is red façade color intended to match adjacent property? Consider toning down the bright red.
- Sheet C-4 shows removal of existing deck w/ ramp, but subsequent sheets show apparent addition of another deck/ramp, not labeled. Clarify if this is part of the scope of your proposed project.
- Traffic Impact Assessment, Page 3: elimination of some of all of the 4 proposed on-street spaces is discussed, but paragraph 3 does not articulate any clear recommendation. Revise paragraph 3 to draw a more specific conclusion.
- Coordinate with Parking Bureau for installation of a new multi space meter on north side of Broadway.
- Where would be appropriate commercial loading zone for your first floor units and abutting commercial property? Evaluate the Saint John/Broadway intersection for potential parking/loading zone improvements.

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.2	Approved	04/01/2024	04/12/2024	04/25/2024	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Approved	04/01/2024	04/29/2024	04/24/2024

Comments: Prior questions have been answered. No new comments or questions.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Approved	04/01/2024	04/12/2024	04/25/2024

Comments: • General Comment:
o Recommend that that a wall evaluation be conducted and sealed by a professional engineer and provided to Community Services as a condition of approval prior to the issuance of a CO.
• Sheet C-7
o There is a callout pointing to the riser poll that references note 12. Note 12 is about drainage. Please clarify what note should be referenced.
• Traffic Impact Study:
o The revised TIA does not mention the triangle intersection of Broadway and St. John or comment on improvements to the traffic flow in the area given the increase in traffic to the site where none exists presently. It is recommended that the Applicant speak to the traffic at this intersection during Planning Board and what improvements could be made in the future.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Approved	04/01/2024	04/12/2024	04/25/2024

Comments: • Provide Use Last EV charging sign on plan set and provide sign detail on detail sheet
- Discuss overall accessibility to EV charging station with access aisle. Provide detail on detail sheet
- Provide Use Last EV signage within detail page with mounting specs within plan set
- The revised configuration requires a total of 2 accessible parking spaces, one shall be a van space without an EV charger.
- There shall be an EV parking space which is accessible with a minimum of a 5’ aisle.

PLAN SNAPSHOT REPORT (WAIV-2024-0004)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Approved	04/01/2024	04/29/2024	04/25/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Approved	04/01/2024	04/12/2024	04/25/2024

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Approved	04/01/2024	04/12/2024	04/25/2024

Comments: • Traffic Impact Assessment, Page 3: elimination of some of all of the 4 proposed on-street spaces is discussed, but paragraph 3 does not articulate any clear recommendation. Revise paragraph 3 to draw a more specific conclusion.
• Coordinate with Parking Bureau for installation of a new multi space meter on north side of Broadway.

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		03/08/2024 9:42	04/25/2024 16:03
Confirm application complete v.1	Generic Action		03/08/2024 9:42
Technical Review Committee Meeting Agenda v.1	Task	03/08/2024 9:42	03/13/2024 12:54
Land Use Plan Technical Review v.1	Receive Submittal	03/13/2024 0:00	04/01/2024 10:22
Land Use Plan Technical Review v.2	Receive Submittal	04/01/2024 0:00	04/25/2024 16:03
Technical Review Committee Meeting v.1	Hold Meeting	04/15/2024 14:21	04/25/2024 16:03
Planning Board v.1		04/25/2024 16:03	
Planning Board Agenda v.1	Task	04/25/2024 16:03	
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
APPLICATION FOR EXTENSION OF/ AMENDMENT TO OR WAIVER FOR PLAN/ DRIVEWAY

[Revised August 20, 2020]

Office Use Only Amount Paid: _____ Date/Time Received: _____

APPLICANT INFORMATION

Name of Applicant: Regan Development Corporation Telephone # (914) 693-6613

Address of Applicant: 1055 Saw Mill River Road #204, Ardsley, NY 10502 E-Mail ken@regandevelopment.com

Project Name: 14 Broadway Development Project Location: 14 Broadway, Dover, NH 03820

Planning File Number: P21-29 Date of Original Approval December 15, 2021

File Type: Conditional Use _____ Site Plan Review ✓ Subdivision _____

EXTENSION INFORMATION (*Note: notification of abutters required for first time extensions under Sec. 153-9.B and Sec. 157-23.B only)*

Extension type requested *(check one)*: ___Sec. 153-8.A ___Sec. 153-9.B ___Sec. 157-13.A ___Sec. 157-23.B

Current deadline date: _____ Number of Extensions Previously granted by Board 0

Reason(s) for extension/comments (*attach additional sheets as needed*): N/A

AMENDMENT INFORMATION

Condition(s) or portion of plan to be amended: Number of building units and parking count to be amended.

Reason(s) for amendment/comments (*attach additional sheets as needed*): The project is proposing to increase the number of units to 38 in the apartment building, leasing 6 parking spaces from the abutting lot (Map 4, Lot 3) and 10 spaces from the Dover Housing Authority (10 Chapel Street), revising the layout of the covered parking beneath the building, and relocating an internal staircase eliminating the need for a sidewalk on the northeast side of the building.

WAIVER INFORMATION

Site Review/Subdivision Regulations section(s) to be waived: N/A

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

SIGNATURES

I/We hereby submit this application to the 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*): By: [signature] vice president Date: 3/6/24

Signature of Agent: Chris Regan Date: 3/7/24

APPLICATION FOR EXTENSION OF/ AMENDMENT TO OR WAIVER FOR PLAN/ DRIVEWAY
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
4	5	Regan Development Corporation	1055 Saw Mill River Road, Ardsley, NY 10502

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Chris Raymond	TEC, Inc.	169 Ocean Blvd., PO Box 249, Hampton, NH 03842

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

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: Regan Development Corporation File Number: _____

PROJECT TITLE: Proposed Residential Development at 14 Broadway

PROPERTY LOCATION: 14 Broadway, Dover, NH 03820 Tax Map: 4 Lot: 5

	Where/How Provided	Reviewed
1. Completed and signed Application form	Submission	
2. Plan Review Fees are provided	Submission	
3. Electronic copy of the engineered/surveyed plan layout	Electronic Submission	
4. Electronic copy of supplementary materials and application	Electronic Submission	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	N/A	
6. Waiver requests to the Site Plan Review Regulations, with written justification	N/A	
7. Conditional Use Permit applications	N/A	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	Architectural Renderings	
9. A colored architectural plan showing all sides of buildings	Architectural Elevations	
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:	Submission	
Location map at appropriate scale	Title Sheet	
Proposed Project name and title and Planning File #	Title Sheets	
Date, north arrow and scale	Site Plans	
Names of all abutting property owners	Plans	
Name and address of owners and/or applicants	Existing Conditions Plan	
Signature & stamp of NH licensed land surveyor and/or engineer	Existing Conditions Plan	
Zoning District boundaries, including any special or overlay districts	N/A	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	Layout & Materials Plan	
Location and widths of existing & proposed easements & right of ways	Layout & Materials Plan	
Location and width of existing and proposed access/egress ways	Layout & Materials Plan	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	Layout & Materials Plan	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	N/A	
Existing and proposed topographic information at two foot intervals	Grading & Drainage Plan	
Existing and proposed buildings and structure locations	Layout & Materials Plan	
Minimum building setbacks or build to lines on all lots	Layout & Materials Plan	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Landscaping, Lighting & Utility Plan	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	Landscape, Lighting & Utility Plan	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	Landscape, Lighting & Utility Plan	
Existing and proposed stormwater lines and facilities	Grading & Drainage Plan	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	Landscaping, Lighting & Utility Plan	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	N/A	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Neighborbood Plan	
Existing natural features and/or significant vegetation on property	Layout & Materials Plan	
Depict existing contours up to 100 ft. beyond project limits	Grading & Drainage Plan	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Landscaping, Lighting & Utility Plan	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Layout & Meterials Plan	
Location, material and size of existing and proposed pavement area	Layout & Materials Plan	
Location of proposed fire lanes	N/A	
Specify finished floor elevations of buildings	Layout & Materials Plan	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	Layout & Materials Plan	
Depict all service, storage, loading bays and utility areas	Layout & Materials Plan	
All applicable Dover Common Site Plan notes	Legend & General Notes	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Drainage Report	
Stormwater Management System Operation and Maintenance Plan	Drainage Report	
Letter to Serve from Public and Private Utilities	Submission	
Erosion and Sedimentation Control Plan	Erosion & Sediment Control Plan	
Landscape Operation and Maintenance Plan	Drainage Report	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	N/A	
If wetland buffer, indicate placards locations, as applicable	N/A	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Geotechnical Data	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	Submission	

REVIEWED BY: _____ DATE_____ TRC DATE_____

WAIV-2024-0004 **14 BROADWAY**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
03051-000000	14 ST JOHN ST	SAINT JOHN STREET LLC		103 BEANE LANE	NEWINGTON	NH	03801
03052-000000	16 ST JOHN ST	BRATTER MYLES S & ELIZABETH A TRUSTEES	BRATTER FAMILY REVOCABLE TRUST	177 BARTLETT ST	PORTSMOUTH	NH	03801
03053-000000	17 19 BROADWAY	ALLEN MICHAEL &	ALLEN PATRICIA	349 ROUTE 108	MADBURY	NH	03823
03054-000000	15 BROADWAY	SELEDEE CRAIG A & DINA C TRUSTEES	TSKA LIVING TRUST	10 OYSTER RIVER RD	DURHAM	NH	03824
03055-000000	13 BROADWAY	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
03056-000000	9 BROADWAY	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
03057-000000	7 BROADWAY	BROADWAY PROPERTIES LLC		92 PORTSMOUTH AVE STE 17	EXETER	NH	03833
03058-059000	3 5 BROADWAY	SULLIVAN JOHN W		82 ELIOT RD	KITTERY	ME	03904
03060-000000	495 503 CENTRAL AV	3L HOLDINGS LLC		1 JAMES CIR	BRENTWOOD	NH	03833-6662
03061-000000	481 CENTRAL AV	NILKANTH PROPERTIES LLC		767 COLUMBUS AVE	ROCHESTER	NH	03867
04001-000000	505 CENTRAL AV	GARRISON PROPERTIES INC		131 CLEMENT RD	ROLLINSFORD	NH	03869
04002-000000	4 BROADWAY	RANDALL MATTHEW		131 CLEMENT RD	ROLLINSFORD	NH	03869
04003-000000	12 BROADWAY	RANDALL MATTHEW		131 CLEMENT RD	ROLLINSFORD	NH	03869
04006-000000	18 BROADWAY	PARKER JASON M		18 BROADWAY	DOVER	NH	03820-3202
04007-000000	22 BROADWAY	ZELAZO THERESA E	ZELAZO CHRISTINE R	23 BIRCH DRIVE	DOVER	NH	03820
04008-000000	26 BROADWAY	DURLING JASON		26 BROADWAY	DOVER	NH	03820
04009-000000	BROADWAY	BOSTON & MAINE RR	IRON HORSE PARK	HIGH STREET	NORTH BILLERICA	MA	01862
04012-000000	23 25 PIERCE ST	MORNINGSTAR PROPERTIES LLC		101 PORTSMOUTH AVE	NEW CASTLE	NH	03854
04013-000000	21 PIERCE ST	MORNINGSTAR PROPERTIES LLC		101 PORTSMOUTH AVE	NEW CASTLE	NH	03854
04014-000000	17 19 PIERCE ST	MCCRACKEN MICHAEL B &	MCCRACKEN CASSANDRE M	28 HOUGH ST	DOVER	NH	03820
04015-000000	PIERCE ST	BOISSE GARY R		PO BOX 755	SOMERSWORTH	NH	03878-0755
04017-000000	525 CENTRAL AV	DOVER NH CAR WASH LLC		24B LILY POND RD	BOXFORD	MA	01921
04019-000000	519 CENTRAL AV	PAPAIOANNOU ATHANASIOS &	PAPAIOANNOU SOTIRIOS	177 HENRY LAW AVENUE	DOVER	NH	03820-3816
04020-000000	511 CENTRAL AV	PORTSMOUTH REALTY LLC		1100 WILLIAM PENN DR	BENSALEM	PA	19020
04021-000000	CENTRAL AV	PEOPLE'S UNITED BANK	C/O M&T BANK ATTN: CORP SERVICES-FSU DPT	ONE M&T PLAZA - 18TH FL	BUFFALO	NY	14203
04022-000000	8 PIERCE ST	TWO PIERCE STREET LLC		601 CENTRAL AVE	DOVER	NH	03820
04024-000000	12 PIERCE ST	PEOPLE'S UNITED BANK	C/O M&T BANK ATTN: CORP SERVICES-FSU DPT	ONE M&T PLAZA - 18TH FL	BUFFALO	NY	14203
04030-000000	537 CENTRAL AV	PEOPLE'S UNITED BANK	C/O M&T BANK ATTN: CORP SERVICES-FSU DPT	ONE M&T PLAZA - 18TH FL	BUFFALO	NY	14203
04034-000000	14 PIERCE ST	PIERCE STREET DOVER LLC		PO BOX 370	PLAISTOW	NH	03865
04035-000000	16 PIERCE ST	TRANSOM PROPERTIES LLC		PO BOX 1818	DOVER	NH	03821
24040-000000	4 WINTER ST	MCMANUS JAMES		PO BOX 1876	DOVER	NH	03820
24041-000000	15 ST JOHN ST	ATLAS MEMORIAL INC		84 BROAD ST	PORTSMOUTH	NH	03801
24042-000000	7 ST JOHN ST	LARSON TOR		7 ST JOHN ST UNIT A	DOVER	NH	03820
04005-000000	14 BROADWAY	DOWNTOWN DOVER STORAGE LLC	C/O RICHARD M CYR	151 LAFAYETTE RD APT 1	PORTSMOUTH	NH	03801
		TEC	CHRISTOPHER RAYMOND, PE	PO BOX 249	HAMPTON	NH	03842

169 Ocean Boulevard/PO Box 249
Hampton, NH 03842
603.601.8154
TheEngineeringCorp.com
Create | Design | Innovate

Ms. Donna Benton, AICP
Director of Planning and Community Development
City of Dover Planning and Community Development
288 Central Ave
Dover, NH 03820

May 2, 2024

Ref. N1440

Re: Planning Board Cover Letter
Proposed Residential Development at 14 Broadway

Dear Ms. Benton

On behalf of Regan Development Corporation, The Owner and Applicant ("Applicant"), TEC, Inc. respectfully submits this letter to supplement the enclosed application with supporting documents for review by the Planning Board for the Proposed Residential Development at 14 Broadway in Dover, NH. This project proposes to redevelop the existing 1-story warehouse and gravel area located at 14 Broadway, Dover, NH (Assessors Map 4, Lot 5) and the bituminous concrete parking area of 12 Broadway (Assessors Map 4, Lot 3). The proposed improvements include demolishing the existing warehouse and constructing a 4-story, 38-unit residential building with commercial use space on the first floor, parking areas totaling 66 spaces between Lot 4-3, Lot 4-5, and Broadway, and landscaped areas to beautify the site. On December 14, 2021, the project the Dover Planning Board voted to conditionally approve the site plan. The project has since been before the Technical Review Committee on two occasions to ensure the proposed development is technically conforming to all rules and regulations of the City of Dover. The Applicant is proposing to amend the site plan by increasing the number of units in the apartment building from 24 to 38, leasing 6 parking spaces from the abutting lot (Map 4, Lot 3) and 10 spaces from the Dover Parking Authority located at 18 Chapel Street, revising the layout of the covered parking beneath the building, and relocating an internal staircase eliminating the need for a sidewalk on the northeast side of the building. The project does not propose any changes to the previously approved conditions relating to stormwater management. Therefore, the previously approved Drainage Report is applicable to the amended site plans which can be found attached to this letter.

The purpose of the project is to rejuvenate an existing abandoned lot located in the heart of the City with a modern residential building with space for commercial uses along Broadway. This project will have a positive impact on the immediate area and the City in general by providing a source of housing in a fast-growing area. The project aims to increase the amount of greenspace on site, treat all stormwater runoff, provide sufficient off-street parking, and utilize municipal utilities along Broadway.

Enclosed please find the following documents as part of the Application to the Technical Review Committee:

- Completed and Signed *"Application for Extension Of / Amendment to or Waiver for Plan/Driveway"* (7 copies)
- Completed "*Site Review Checkoff List" (7 copies)*
- Responses to TRC 2 Comments (7 copies)

- 22”x34” Site Plans (2 copies)
- 11”x17” Site Plans (5 copies)
- Traffic Analysis (7 copies)
- Photographs of Site (7 copies)

Please do not hesitate to contact me directly if you have any questions concerning our Application for TRC Review at (603) 601-8154.Thank you for your consideration.

Sincerely,
TEC, Inc.
*“**T**he **E**ngineering **C**orporation”*

Christopher Raymond, PE
Civil Engineer – Senior Project Manager

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – WAIV-2024-0004

Application Type:	Site Review
Applicant(s):	Downtown Dover Storage LLC
Owner(s):	Downtown Dover Storage LLC
Location:	14 Broadway (Assessor's Map 4, Lot 5)
Date:	April 25, 2024

INTENT: Proposal is to construct a 14,770 square foot 4-story residential building with 38 units, revised covered parking, and a relocated internal staircase.

UNITS PROPOSED: 38 units

AGENDA ITEM #: 1

ACREAGE: 0.45± ac.

ZONING DISTRICT: CBD-G

EXISTING LAND USE: Commercial

PROPOSED LAND USE: Mixed-Use

SURROUNDING LAND USE:
Residential/Commercial

ZBA ACTION: None

PERMITS REQUIRED:
-CUP to allow for less than 20% of building to be non-residential.

WAIVERS REQUESTED: None

ATTENDANCE:
Erin Bassegio, Planning
Paul Crouser, Zoning
Marn Speidel, Police
Ken Mavrogeorge, Engineering
James Burdin, Business Development
Craig Chabot, Fire Department
Tom Clark, Planning Board

Others:
Chris Raymond, TEC, Inc.
Matt Perry, TEC, Inc.
Keegan Smith, Lassel Architects
Michal Kaleta, Lassel Architects
Ryan Crosby, Dover Housing Authority

Approval of minutes from April 11, 2024:
T. Clark moved to approve the April 11, 2024 minutes. Seconded by J. Burdin. Vote: U/A.

PLAN REVIEW:
Planning:

- Prior questions have been answered. No new comments or questions.

Engineering:

- General Comment:
  - **Recommend that that a wall evaluation be conducted and sealed by a professional engineer and provided to Community Services as a condition of approval prior to the issuance of a CO.**
- Sheet C-7
  - There is a callout pointing to the riser poll that references note 12. Note 12 is about drainage. Please clarify what note should be referenced.
- Traffic Impact Study:
  - The revised TIA does not mention the triangle intersection of Broadway and St. John or comment on improvements to the traffic flow in the area given the increase in traffic to the site where none exists presently. **It is recommended that the Applicant speak to the traffic at this intersection during Planning Board and what improvements could be made in the future.**

Police:

- *Traffic Impact Assessment, Page 3: elimination of some of all of the 4 proposed on-street spaces is discussed, but paragraph 3 does not articulate any clear recommendation. Revise paragraph 3 to draw a more specific conclusion.*
- *Coordinate with Parking Bureau for installation of a new multi space meter on north side of Broadway.*

Inspection Services:

- *Provide Use Last EV charging sign on plan set and provide sign detail on detail sheet*
- *Discuss overall accessibility to EV charging station with access aisle. Provide detail on detail sheet*

DRAFT

- Provide Use Last EV signage within detail page with mounting specs within plan set
- The revised configuration requires a total of 2 accessible parking spaces, one shall be a van space without an EV charger.
- There shall be an EV parking space which is accessible with a minimum of a 5' aisle.

Fire Department:

- None.

Business Development:

- Prior questions have been answered. No new comments or questions.

Planning Board:

- None.

Next Steps: Revise plans per comments above. Confer with Building Official on updated EV configuration. Submit to Planning Board.

Adjournment: T. Clark moved to adjourn the meeting at 10:37 a.m. Seconded by K. Mavrogeorge. Vote: U/A

DRAFT

169 Ocean Boulevard/PO Box 249
Hampton, NH 03842
603.601.8154
TheEngineeringCorp.com
Create | Design | Innovate

Ms. Donna Benton, AICP
Director of Planning and Community Development
City of Dover Planning and Community Development
288 Central Ave
Dover, NH 03820

May 2, 2024

Ref. N1440
Planning File #: WAIV-2024-0004

Re: Response to TRC 2 Comments Letter
Proposed Residential Development at 14 Broadway

Dear Ms. Benton:

On behalf of Regan Development Corporation, The Owner and Applicant ("Applicant"), TEC, Inc. respectfully submits this letter addressing the comments made by the Technical Review Committee (TRC) on April 25, 2024, for the Proposed Residential Development at 14 Broadway in Dover, NH. The Applicant is proposing to redevelop the existing 1-story warehouse and gravel area located at 14 Broadway, Dover, NH (Assessors Map 4, Lot 5) and the bituminous concrete parking area of 12 Broadway (Assessors Map 4, Lot 3). The Applicant is proposing to demolish the existing warehouse and construct a 4-story, 24-unit residential building with first floor commercial space and associated parking, landscaping, and utilities. Below is a list of the outstanding comments provided by each member of the Technical Review Committee (**in bold**) and TEC Inc.'s response (*in italics*):

Engineering Comments:

1. **General Comments:**
   - **Recommend that the wall evaluation be conducted and sealed by a professional engineer and provided to Community Services as a condition of approval prior to the issuance of a CO.**
     The wall evaluation will be conducted and sealed by a professional engineer and provided to Community Services prior to applying for a CO.

2. **Sheet C-7:**
   - **There is a callout pointing to the riser poll that references note 12. Note 12 is about drainage. Please clarify what note should be referenced.**
     The callout pointing to the riser poll has been revised to reference note 11 on the Utility Plan (Sheet C-7).

3. **Traffic Impact Study:**
   - **The revised TIA does not mention the triangle intersection of Broadway and St. John or comment on improvements to the traffic flow in the area given the increase in traffic to the site where none exists presently. It is recommended that the Applicant speak to the traffic at this intersection during Planning Board and what improvements could be made in the future.**
     TEC will be available at the Planning Board meeting to discuss potential improvements at this location which could be made in the future. Note that the

subject development is not anticipated to contribute noticeable traffic to this location as the project is limited to only 19 new vehicles in the AM peak hour and 30 new vehicles during the weekday evening peak hour, a significant majority of which will travel to/from the west of the site along the Main Street corridor.

Police Comments:

1. **Traffic Impact Assessment, Page 3: elimination of some of all of the 4 proposed on-street spaces is discussed, but paragraph 3 does not articulate any clear recommendation. Revise paragraph 3 to draw a more specific conclusion.**
   TEC recommendation is to retain the proposed four (4) on-street parking spaces with the understanding that sight lines to/from the driveway will not meet minimum recommendations for the speed of the roadway. The driveway will operate similar, even superior, to all other driveways along Broadway in terms of sight distance to/from the driveway location.

2. **Coordinate with Parking Bureau for installation of a new multi space meter on north side of Broadway.**
   Coordination with the Parking Bureau for the installation of a new multi space meter on the north side of Broadway has been completed with regard to the location and cost.

Inspection Services Comments:

1. **Provide Use Last EV charging sign on plan set and provide sign detail on detail sheet.**
   Use Last EV charging sign has been provided on the Layout & Materials Plan (Sheet C-5) and a detail has been provided on Sheet C-13.

2. **Discuss overall accessibility to EV charging station with access aisle. Provide detail on detail sheet.**
   EV charging stations will be wall mounted located on the northwest building wall.

3. **Provide Use Last EV signage within detail page with mounting specs within plan set.**
   Use Last EV signage with mounting specs have been provided in the construction details (Sheet C-13).

4. **The revised configuration requires a total of 2 accessible parking spaces, one shall be a van space without an EV charger.**
   The revised configuration includes 2 accessible parking spaces, one being a van space without an EV charger.

5. **There shall be an EV parking space which is accessible with a minimum of a 5' aisle.**
   An accessible EV parking space with a 5-foot minimum aisle has been provided on the Layout & Materials Plan (Sheet C-5).

Please do not hesitate to contact me directly if you have any questions concerning our Application for TRC Review at (603) 601-8154.Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orporation"*

Christopher Raymond, PE
Civil Engineer – Senior Project Manager

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Regan Development Corporation
Attn: Gabe Regan
1055 Saw Mill River Road #204
Ardsley, NY 10502

March 19, 2024
REVISED May 2, 2024

Ref. N1440

Re: Proposed Residential Development at #14 Broadway – Dover, New Hampshire
Traffic Impact Assessment

Dear Mr. Regan:

TEC, Inc. (TEC) has been retained by Regan Development Corporation (the "Applicant") to prepare a Traffic Impact Assessment (TIA) for the proposed change in use of the property located at #14 Broadway in Dover, New Hampshire. The project proposes to redevelop the existing one-story warehouse and gravel area on-site (Assessors Map 4, Lot 5) and the bituminous concrete parking area of the adjacent #12 Broadway (Assessors Map 4, Lot 3). The Applicant proposes to raze the existing structure and construct a four-story building to include ±1,140 square foot (SF) of ground floor retail and ±725 SF of ground floor office space with three upper floor residential space including 38 residential units (site plan previously conditionally approved by Dover Planning Board on December 14, 2021 with 24 residential units).

The parking areas are proposed to total 50 usable parking spaces between Lot 4-3 (6 leased spaces), Lot 4-5 (30 parking spaces), and on-street along Broadway (4 parking spaces). As part of the Applicant's amended site plan, the Applicant will lease ten (10) parking spaces from the Dover Parking Authority located at #18 Chapel Street. The existing site currently has two (2) driveways along the northerly side of Broadway. Both driveways are one-way flow with the easternmost driveway providing full-access and the westernmost driveway providing full-egress. The project seeks to remove the easternmost driveway and reconfigure the westernmost driveway as a full access/egress driveway.

Methodology

This TIA has been prepared as a "Standard Analysis" in accordance with Chapter 149-13-A(20) of the Dover Site Review Regulations and Chapter 155-9-I of the Dover Land Subdivision Regulations, which outline the potential impacts to the existing traffic conditions and safety in the vicinity of the project. The proposed change in use is anticipated to result in an increase in overall traffic to/from the site and the adjacent Broadway corridor. The following letter summarizes the evaluation of traffic impact resulting from the proposed development.

EXISTING CONDITIONS

The project site is located at #14 which forms a U-shaped parcel around the adjacent #6 Broadway property and its parking. The north side of the parcel directly abuts the Boston & Maine Railroad Right of Way (ROW). The existing ±10,417 SF building footprint directly abuts the property line on both the north and south sides. The building's front door faces east into the parcel's unpaved parking area and driveway, which accesses Broadway just east of the #6

Broadway parking field. The existing driveway is approximately 16-feet wide. The building structure was previously utilized as a warehousing use.

Broadway, the adjacent roadway, is a two-lane, northeast-southwest minor arterial roadway maintained by the City of Dover. The roadway provides regional connection between Main Street (Route 9) to the south and Rollins Road to the north. In the vicinity of the project site, Broadway is approximately 35-50 feet wide with 7 foot on-street parking stalls aligning portions of the northerly and southerly curb line. Directional flow along Broadway is separated by a double-yellow centerline. The posted speed limit along the corridor is 30 miles per hour (mph) adjacent to the proposed project. Sidewalks are provided along both sides of Broadway; however, no bicycle accommodations are provided. Land uses along Broadway generally include retail, commercial and residential uses.

Driveway Sight Distance Measurements

TEC measured the available sight distances at the proposed site driveway alignment along Broadway. The available sight lines were compared to minimum requirements established by the American Association of State Highway and Transportation Officials (AASHTO).

Sight distance represents the length of roadway that is visible to a driver traveling within the roadway. Two types of sight distance are typically evaluated for driveways and intersections: stopping sight distance (SSD) and intersection sight distance (ISD). SSD is the minimum distance required for a driver traveling along a roadway to perceive an object in the roadway and stop safely in advance of the object when traveling on a wet pavement surface. SSD is measured from an eye height of 3.5-feet to an object height of 2-feet above the ground, which is equivalent to a driver viewing the taillight of a vehicle ahead. SSD is measured along the centerline of the travel lane approaching the driveway or intersection.

ISD represents the length of the roadway visible to a driver waiting to exit a driveway or minor street. Minimum ISD requirements are based on the distance required for a driver to exit a minor street onto a major street without requiring an approaching vehicle to reduce its speed from the design speed to less than 70 percent of the design speed. ISD is measured from an eye height of 3.5-feet to an object height of 3.5-feet and is measured from a distance 14.5-feet beyond the edge of the travel-way of the major roadway to represent a driver waiting to exit a driveway or minor roadway.

SSD is typically considered the critical sight distance, as it represents the minimum distance required for safe stopping, while ISD represents an acceptable speed reduction for approaching vehicles. The ISD, however, must be at least equal to the minimum required SSD to prevent a driver from entering the roadway when an approaching vehicle is too close to safely stop. The guidance provided by AASHTO states:

> *"If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road."*

Table 1 provides a summary of the available SSD and Table 2 provides a summary of the available ISD at the proposed driveway intersection.

Table 1 – Existing Stopping Sight Distance Measurements

Approach / Direction	Posted Speed	AASHTO Recommended Minimum	Measured Stopping Sight Distance
Exiting Site Driveway at Broadway:			
Broadway Eastbound	30 MPH	200 FT	210 FT
Broadway Westbound	30 MPH	200 FT	170 FT

Table 2 – Existing Intersection Sight Distance Measurements

Approach / Direction	Posted Speed	AASHTO Recommended Minimum	Measured Intersection Sight Distance
Site Driveway at Broadway:			
East of Driveway	30 MPH	200 FT	75 FT (115 FT [a])
West of Driveway	30 MPH	200 FT	160 FT

[a] Maximum ISD based on proposed building corner.

As shown in Table 1, the SSD along Broadway eastbound meets the AASHTO minimum recommendations based on the 30-mph posted speed. Along Broadway westbound, the SSD is measured at below the AASHTO minimum recommended and is restricted by the existing on-street parking along the northerly side of Broadway (assumption of parking stalls being occupied) adjacent to Papa Jay's. For SSD to be met at this location, all existing and proposed on-street parking spaces between the Papa Jay's Driveway opposite St. John Street / Winter Street would need to be removed from the northerly side of Broadway.

As shown in Table 2, the ISD along the proposed site driveway at Broadway does not meet the AASHTO minimum recommendations based on the posted speed limit for both directions along Broadway. The existing sight line is limited to 75 feet based on the on-site parking stall. Whereas these stalls would be eliminated upon development, the proposed building footprint on-site (located based on the Town's desire for a 0-feet setback) would become the sight line restriction and extend further to 115 feet. For this minimum sight line to be met, the building would need to be shifted up to 10-feet into the site and each on-street parking space, both existing and proposed, would need to be removed similar to the SSD condition above. To the west, the sight line is obstructed by the existing #6 Broadway building and therefore the 160-foot sight line cannot be further extended without demolition of the neighboring building.

Although the sight distance in both directions from the proposed site driveway, this condition is typical of commercial and residential driveways along Broadway in the immediate vicinity and of Downtown along the adjacent Central Avenue. For example and in addition to the site's gravel driveway (to be removed), the sight line from the fire station driveway looking east along Broadway is 40-feet, the sight line existing Pap Jay's driveway is 35-feet, etc.. TEC's recommendation is to retain the proposed four (4) on-street parking spaces with the understanding that sight lines to/from the driveway will not meet minimum recommendations for the speed of the roadway. The driveway will operate similar, even superior, to all other driveways along Broadway in terms of sight distance to/from the driveway location.

Site Generated Traffic

The site-generated traffic volumes for the 38 residential units, the ±1,140 SF commercial space and ±725 SF of office space were estimated based on standard trip rates published in the Institute of Transportation Engineers' (ITE) publication *Trip Generation, 11th Edition* for Land Use Code (LUC) LUC 220 – Multifamily Low-rise Housing, LUC 712 – Small Office Building, and LUC 822 – Strip Retail Plaza [<40kSF]. Table 3 provides a summary of the site trip generation estimates. Note that the previous version of this assessment as completed in 2021 utilized a previous edition of the publication *Trip Generation*.

Table 3 - Trip Generation Summary

Time Period	Multifamily House (LUC 220)	Office (LUC 712)	Shopping Center (LUC 822)	Total Trips
Weekday Daily				
IN	128	5	31	**164**
OUT	128	5	31	**164**
TOTAL	256	10	62	**328**
Weekday Morning				
IN	4	1	1	**6**
OUT	12	0	1	**13**
TOTAL	16	1	2	**19**
Weekday Evening				
IN	13	1	4	**18**
OUT	7	1	4	**12**
TOTAL	20	2	8	**30**

As shown in Table 3, the proposed redevelopment is anticipated to generate a total of 328 *new* vehicle trips during the typical weekday, 19 *new* vehicle trips (6 entering and 13 exiting) during the weekday morning peak hour, and 30 *new* vehicle trips (18 entering and 12 exiting) during the weekday evening peak hour. This level of new traffic to the roadway is minimal, including during the peak hours of the day when traffic would be expected to result in a maximum of one new vehicle every two (2) minutes (weekday evening peak hour). This level of new traffic is generally unnoticeable.

As compared to the previous version of the TIA submitted in 2021, the project is anticipated to generate approximately 66 additional vehicles over the course of the typical weekday (reported as 262 trips previously) with 6 additional vehicles during the weekday morning peak hour (reported as 13 trips previously) and 6 additional vehicles during the weekday evening peak hour (reported as 24 trips previously).

The proposed 76 space commercial and residential development and parking lot does not generate 1,000 average daily trips or 100 peak hour trips therefore does not apply for an "Advanced" analysis. Site generated trip calculations are attached.

Public Transportation

The proposed parking facility is located approximately 0.25 miles from the Dover Transportation Center which serves as the hub for multiple Cooperative Alliance for Seacoast Transportation (COAST) bus routes and AMTRAK Downeaster rail service. Public transportation data is summarized below:

- COAST Route 1 [Dover / Somersworth / Berwick] – Service is provided Monday through Saturday from the Dover Transportation Center to Sullivan Street in Berwick with several designated stops within Dover, Somersworth, and Berwick, ME. The bus operates northbound from 5:38 AM to 7:25 PM over 13 daily runs at approximately 60-minute headways. The bus operates southbound from 5:55 AM to 7:24 PM over 13 daily runs at approximately 60-minute headways.
- COAST Route 3A [UNH Wildcat Service] – Service is provided Monday through Saturday from UNH to Shaw's in Dover; including the Dover Transportation Center. Weekday service operates outbound from 6:40 AM to 5:36 PM over seven (7) daily runs at approximately 65 to 150-minute headways. Weekday service operates inbound from 7:11 AM to 6:04 PM over seven (7) daily runs at approximately 65 to 150-minute headways. Saturday service operates outbound over three (3) runs at 10:05 AM, 2:05 PM, and 6:35 PM. Saturday service operates inbound over three (3) runs at 10:36 AM, 2:36 PM, and 7:06 PM. The bus runs on a reduced schedule over school breaks with outbound services over three (3) runs at 10:05 AM, 12:05 PM, and 6:05 PM. Inbound services run over three (3) runs at 10:36 AM, 12:36 PM, and 6:36 PM.
- COAST Route 3B [UNH Wildcat Service] – Service is provided Monday through Saturday from UNH to Shaw's in Dover, including the Dover Transportation Center. Weekday service operates outbound from 6:40 AM to 10:06 PM over eight (8) daily runs at approximately 65 to 210-minute headways. Weekday service operates inbound from 7:11 AM to 10:33 PM over eight (8) daily runs at approximately 65 to 210-minute headways. Saturday service operates outbound over three (3) runs at 11:05 AM, 4:05 PM, and 8:05 PM. Saturday service operates inbound over three (3) runs at 11:36 AM, 4:36 PM, and 8:36 PM. The bus runs on a reduced schedule over school breaks with outbound services over three (3) runs at 6:40 AM, 2:05 PM, and 4:35 PM. Inbound services run over three (3) runs at 7:11 AM, 2:36 PM, and 5:06 PM.
- COAST Route 12 [Rochester / Somersworth / Dover] – Service is provided Monday through Saturday from the Dover Transportation Center to the Dover Transportation Center with several designated stops within Dover, Somersworth, and Rochester. The bus operates northbound from 6:30 AM to 9:54 PM over 16 daily runs at approximately 60-minute headways. The bus operates southbound from 5:55 AM to 8:28 PM over 16 daily runs at approximately 60-minute headways.
- COAST Route 13 [Dover / Portsmouth] – Service is provided Monday through Saturday from the Hanover Station in Portsmouth to Lilac Mall in Rochester with two (2) designated stops in Portsmouth and several designated stops within Dover. The bus operates northbound from 5:55 AM to 9:25 PM over 16 daily runs at approximately 60-minute headways. The bus operates southbound from 5:30 AM to 8:55 PM over 16 daily runs at approximately 60-minute headways.

- COAST Route 33 [Downtown Dover / County Complex] – Service is provided Monday through Saturday from the Strafford County Courthouse in Dover to the Dover Transportation Center. Weekday service operates inbound from 6:12 AM to 7:56 PM over 13 daily runs at approximately 60 to 120-minute headways. Weekday service operates outbound from 6:30 AM to 7:43 PM over 13 daily runs at approximately 60 to 120-minute headways. Saturday service operates inbound from 6:12 AM to 7:56 PM over 14 daily runs at approximately 30 to 60-minute headways. Saturday service operates outbound from 6:30 AM to 7:43 PM over 13 daily runs at approximately 60 to 120-minute headways.
- COAST Route 34 [Downtown Dover / Knox Marsh Road] – Service is provided Monday through Saturday from Sumner Drive (COAST Offices) to the Dover Transportation Center. The bus operates inbound from 5:17 AM to 6:27 PM over eight (8) daily runs at approximately 60 to 180-minute headways. The bus operates outbound from 8:30 AM to 8:04 PM over nine (9) daily runs at approximately 27 to 180-minute headways.
- AMTRAK Downeaster – Service is provided between Boston's North Station and Brunswick, ME with five (5) northbound and southbound trips on a typical day and one (1) additional Event Nite Train as needed. The Downeaster makes stops in Dover at the Dover Transportation Center in the southbound direction at 6:17 AM, 8:57 AM, 12:47 PM, 2:42 PM, and 7:32 PM and in the northbound direction at 10:20 AM, 1:20 PM, 5:15 PM, 6:50 PM, and 11:59 PM. The Event Nite Train stops in Dover at the Dover Transportation Center at 12:55 AM.

There is currently no direct public transportation service adjacent to the site. Bus stops for Routes 3 and 33 are provided along Main Street approximately 750 feet to the south of Broadway and bus stops for Routes 3, 12, and 33 are provided along Main Street / 6Th Street approximately 800 feet to the north of Broadway. Based on the type of uses, it is expected that a portion of residential and retail site generated traffic would travel to/from the site via public transportation. No credit has been taken on the trip generation calculations related to proximity to public transportation.

Parking Generation

The peak parking demand generated by the proposed land uses was estimated based on the average peak parking demand generation rates obtained from the ITE publication *Parking Generation, 6th Edition* for LUC 217 – 1 BR Multifamily Housing (Low-Rise), LUC 220 – 2+ BR Multifamily Housing (Low-Rise), LUC 710 – Office, and LUC 822 – Strip Retail Plaza. For the residential component, the bedroom count was divided into thirty (30) one-bedroom units and eight (8) two-bedroom units which generated different demand. Table 4 provides a summary of the site parking demand estimates.

Table 4 – Average Peak Parking Demand Summary

Time Period	Multifamily House – 1 BR (LUC 217)	Multifamily House – 2BR (LUC 220)	Office (LUC 712)	Shopping Center (LUC 822)	Total Trips
Weekday	28	11	2	5	**46**
Saturday	28	10	-	7	**45**

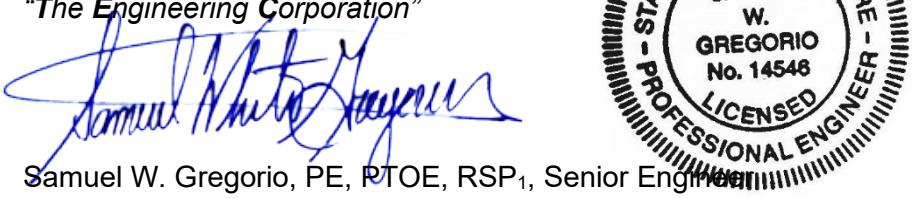
Based on the ITE publication *Parking Generation, 6th Edition*, the average peak parking demand for the site is 46 parking spaces. Overall, the project will have access to 50 parking spaces; including, 36 parking spaces on site, four (4) parking spaces on-street adjacent to the property, and ten (10) parking spaces from the Dover Parking Authority located at #18 Chapel Street. There is therefore sufficient parking provided for the project based on the anticipated peak demand for the site.

Summary

The proposed site generated traffic to/from the site is anticipated to be minimal including during the peak hours of the day where traffic would be expected to result in a maximum of one new vehicle every two (2) minutes (weekday evening peak hour). This level of new traffic is generally unnoticeable. The anticipated traffic generated by the proposed development and parking lot can be safely and efficiently accommodated within the project area. The overall change in use of the site will have a negligible impact on traffic operations and safety.

Please do not hesitate to contact me directly if you have any questions concerning our evaluation at 978-794-1792.Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orporation"*



Samuel W. Gregorio, PE, PTOE, RSP_1, Senior Engineer

Attachment A – Trip Generation Calculations
B – Parking Demand Calculations

Figure 1 – 14 Broadway – Facing Northwest from Broadway – 4/23/2021

Figure 2 – 14 Broadway – Existing 1-Story Warehouse Facing West from Site– 4/23/2021

Figure 3 – 14 Broadway – Facing Southeast from North Side of Site – 4/23/2021

Figure 4 – 14 Broadway – Facing Adjacent Parcel (12 Broadway) from Broadway – 4/23/2021

Figure 5 – 14 Broadway – Facing Adjacent Parcel (18 Broadway) from Site – 4/23/2021

Figure 6 – 14 Broadway – Site Entrance Facing West from Broadway – 4/23/2021

DRAINAGE REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

Assessor's Map 4, Lot 5
14 Broadway
Dover, New Hampshire

Prepared for:

Downtown Dover Storage, LLC
42 L Dover Point Road
Dover, NH 03820

Prepared by:

TEC, Inc.
169 Ocean Boulevard
Unit 101 PO BOX 249
Hampton, NH 03842

TEC
The Engineering Corp

November 23, 2021

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Narrative

Introduction

Downtown Dover Storage, LLC (the "Applicant") is proposing to redevelop the existing 1-story warehouse and gravel area located at 14 Broadway, Dover, NH (Assessors Map 4, Lot 5). The project will also include redeveloping the bituminous concrete parking area of 12 Broadway (Assessors Map 4, Lot 3). The total project area is 35,032 square feet (SF) situated between the Boston & Maine Railroad Tracks (northerly), Papa Jay's Pizzeria (easterly), Broadway (southerly), and Dover House of Pizza (westerly), located within the Central Business District, General Sub District overlay. The project is defined on the *Project Location Map* (Figure 1).

The Applicant is proposing to redevelop the site by demolishing the existing warehouse and constructing a 4-story residential building with associated parking and landscaped areas. A lot line adjustment is being proposed between Lot 4-5 and the adjacent Lot 4-3 to account for the proposed use, which requires a larger building footprint, increased parking count, and larger landscape areas to provide for methods of stormwater treatment.

This drainage study was performed in order to assess the potential impacts of the proposed improvements and to provide measures to mitigate any impacts of the Project. The Project will provide a stormwater management system incorporating traditional and Low Impact Design (LID) Best Management Practices (BMPs) elements. This analysis has been prepared to verify that the Project will not have an adverse effect on the stormwater conditions both on-site and off-site.

The Stormwater Management Plan has been designed to meet the Stormwater Standards identified in the New Hampshire Stormwater Manual. The proposed project reduces effective impervious area and peak runoff rates, decreases the risk of erosion and sedimentation, and improves stormwater runoff quality by removing total suspended solids (TSS).

Existing Conditions

The project area is 35,032 SF consisting of a total impervious area of 25,497 SF which includes the 1-story warehouse and the bituminous concrete parking area, and a total pervious area of 9,535 SF consisting of 6,761 SF of poorly graded, compacted gravel and 2,774 SF of poorly maintained landscape area. Topography at the site varies between the two lots, where on Lot 4-5 a low point exists near the center of the gravel area preventing stormwater from traveling with ease into the Broadway closed drainage system. Lot 4-3 grades easterly toward Broadway at a slope varying between 0.5-1.5%. Stormwater treatment on this site is nearly nonexistent based on the conditions of grading, surfaces, and landscape area. Refer to Appendix C to review the full Geotechnical Data provided by John Turner Consulting, Inc., dated December 7, 2020, for which depicts the various soils present at and around the Site.

According to the FEMA Flood Insurance Rate Maps (FIRM), map number 33017C0330E, dated September 30, 2015, the site lies entirely outside of the 100-year floodplain in an area of minimal flood hazard (Zone X). Refer to the attached FIRM Figure at the end of this section (Figure 3).

Proposed Conditions

The project proposes to construct a 4-story residential building with a footprint of 14,900+/- SF, new asphalt parking lot, and associated landscaping and means of stormwater treatment. Impervious asphalt surface will cover 11,691 SF, landscaped areas will occupy 5,806 SF of the site, sidewalk will occupy 2,342 SF, building coverage will occupy 14,860 SF, and the sawcut building wall will occupy 333 SF. There are 5 proposed sub-catchments between the 2 lots which are conveyed to a single design point, the Broadway closed drainage system. The Project is considered a redevelopment as it will decrease the impervious area of the site as compared to the existing conditions. The proposed stormwater management system has been designed in accordance with the NHDES Stormwater Manual and includes traditional and LID BMPs. BMPs proposed for the site include a reduction in impervious area, deep sump and hooded catch basins, and a Stormceptor Water Quality Units.

The stormwater management system has been designed to provide water quality treatment and water quantity control for 1" of runoff from the added impervious area. The drainage system on site will consist of a two deep sump catch basins, one located in the middle of the site to collect runoff from the majority of the asphalt parking lot and one located at the site entrance. These deep catch basins will be routed to a Stormceptor Water Quality Unit before tying into the Broadway drainage system. Roof drains will also collect all runoff created by the impervious building roof and be routed to the

Broadway Drainage System. The additional greenspace that will be provided by the project will beautify the site and will allow for a reduction in peak rates of stormwater runoff leaving the site.

Methodology

The Stormwater Management Plan, which will be implemented as part of this project, will provide adequate collection, management, and treatment of the stormwater runoff. The proposed stormwater management system will comply with the standards set forth in the New Hampshire Stormwater Manual.

Existing and proposed hydrologic conditions were analyzed using HydroCAD, an SCS TR-20 based program, to calculate existing and proposed peak discharge rates. This method takes into account existing and proposed pervious and impervious areas including soil types and hydrologic classifications. Peak rainfall data was based on Appendix A – New Hampshire Rainfall Tables from Volume 2 of the New Hampshire Stormwater Manual, published by the New Hampshire Department of Environmental Services (NHDES). The 2-, 10-, 25-, and 50-year, 24-hour storm frequencies were used in the analysis in accordance with the NHDES and City of Dover requirements.

The "Regulatory Compliance" portion of this report addresses the New Hampshire Department of Environmental Services Antidegradation requirements.

Pre-Development Runoff

In the Site's current condition, there are three existing subcatchment areas which flow towards Broadway. The *Pre-Development Drainage Areas* are depicted in Figure D-1 of this report. This figure presents the delineation of the existing subcatchment areas and the design points.

Existing Subcatchment Area 1 (EX-1) is comprised of the 1-story warehouse, gravel area, and landscaped areas, totaling 19,263 SF, where stormwater either pools and poorly infiltrates into the ground or sheet flows into the Broadway closed drainage system, Design Point 1 (DP-1).

Existing Subcatchment Area 2 (EX-2) is located at the southeast edge of the site and is comprised of the gravel area and landscape area totaling 1,013 SF, where stormwater poorly infiltrates into the ground or sheet flows into the Broadway closed drainage system, DP-1.

Existing Subcatchment Area 3 (EX-3) is located within Lot 4-3 is comprised of the bituminous concrete parking area totaling 14,756 SF, where stormwater sheet flows directly into the Broadway closed drainage system, DP-1.

Post-Development Runoff

The proposed stormwater management system is designed to mitigate the effects of the proposed development by reducing the peak rates of runoff as compared to the existing conditions. In the proposed conditions analysis, the same design points identified and analyzed under the existing conditions were analyzed. The post-development subcatchment areas are identified in Figure D-2, *Post Development Drainage Areas.*

Proposed Subcatchment Area 1 (PR-1) is comprised of 1,468 SF of pervious land area consisting of grass landscaping and 6,054 SF of impervious pavement and cement concrete sidewalk. Stormwater from PR-1 is captured by a catch basin (CB-4), routed to a Stormceptor Water Quality Unit, then discharged to the Broadway drainage (DP-1).

Proposed Subcatchment Area 2 (PR-2) is comprised of 2,045 SF of pervious land area consisting of grass landscaping and 4,621 SF of impervious pavement and cement concrete sidewalk. Stormwater from PR-2 is captured by a catch basin (CB-2), routed to a Stormceptor Water Quality Unit, then discharged to the Broadway drainage system (DP-1).

Proposed Subcatchment Area 3 (PR-3) is comprised of 490 SF of pervious land area consisting of grass landscaping and 3,025 SF of impervious pavement and cement concrete sidewalk. Stormwater from PR-3 is captured by a catch basin (CB-3), routed to a Stormceptor Water Quality Unit, then discharged to the Broadway drainage system (DP-1).

Proposed Subcatchment Area 4 (PR-4) is comprised of 1,811 SF of pervious land area consisting of grass landscaping and 738 SF of impervious cement concrete sidewalk. Stormwater from PR-4 sheet flows into to the Broadway drainage system (DP-1).

Proposed Subcatchment Area 5 (PR-5) is comprised of 14,778 SF of impervious roof created by the Proposed Residential Building. Stormwater from PR-5 is collected via roof drains and conveyed to the Broadway drainage system (DP-1).

Table 1 (Peak Flow Summary)

	2-Year Storm		10-Year Storm		25-Year Storm		50-Year Storm	
Design Point	**Exist (cfs)**	**Prop (cfs)**	**Exist (cfs)**	**Prop (cfs)**	**Exist (cfs)**	**Prop (cfs)**	**Exist (cfs)**	**Prop (cfs)**
DP-1	1.82	1.79	2.96	2.94	3.87	3.86	4.71	4.71

The proposed project decreases peak runoff rates from the existing conditions for the 2-, 10-, 25-, and 50-Year storm events, in accordance with state and local regulations.

TSS Removal

Currently there are no TSS removal BMPs onsite; all of the site runoff is discharged directly into the Broadway drainage system without any treatment. The stormwater management plan for this project utilizes BMPs including street sweeping, deep hooded sump catch basins, and a water quality unit to minimize total suspended solids. All impervious area onsite will be captured by proposed deep sump catch basins and treated by a Stormceptor Water Quality Unit prior to discharge into the municipal system (see attached Stormceptor Sizing Detailed Report). The proposed project will greatly improve the quality of stormwater runoff from the site.

The proposed conditions of the project introduce no new sources of stormwater. To ensure there is no erosion or sedimentation during construction, compost filter tubes will be placed around the extents of the project and silt sacks will be placed in the existing and proposed catch basins. The project reduces the peak rate of runoff leaving the site as compared to the existing conditions with the addition of landscape area. The Rational Method was used to show the existing and proposed peak flows for the 2-year, 10-year, 25-year, and 50-year storm events, which can be seen in the attached HydroCAD Reports. Rainfall rates were taken from Appendix A of the New Hampshire Stormwater Manual.

Regulatory Compliance

Given that the project results in a contiguous land disturbance of approximately 35,000+/- SF and the site's existing impervious surface coverage was approximately 73%, the Stormwater Management for Redevelopment Standards shall apply as stated in Section 153-14(3)(c) of the City of Dover Site Review Regulations. Stormwater shall be managed in accordance with one or more of the following techniques:

- Implement measures on site that result in mitigation and treatment of at least 30% of the existing impervious cover as well as 50% of the additional proposed impervious surfaces and pavement areas through the application of LID; or
- Implement other LID techniques on site to the MEP to provide mitigation and treatment for at least 50% of the entire site area.

The proposed conditions of the site result in both of these techniques being employed through the use of deep sump catch basins and a Stormceptor

Water Quality Unit. All stormwater runoff generated by impervious surfaces will undergo treatment before being discharged into the Broadway drainage system. For further details on the treatment capacity of these LID techniques, please refer to Appendix B: Water Quality Data.

Conclusion

This proposed project will improve the site over existing conditions by reducing peak runoff rates and improving the quality of stormwater runoff created by the site. By providing additional landscaping, the project will improve the aesthetics and drainage capability of the site. The Applicant is enthusiastic to reinvest in this property, beautify a degraded site, and provide a benefit to the City of Dover.

Figure 1 – Project Location Map
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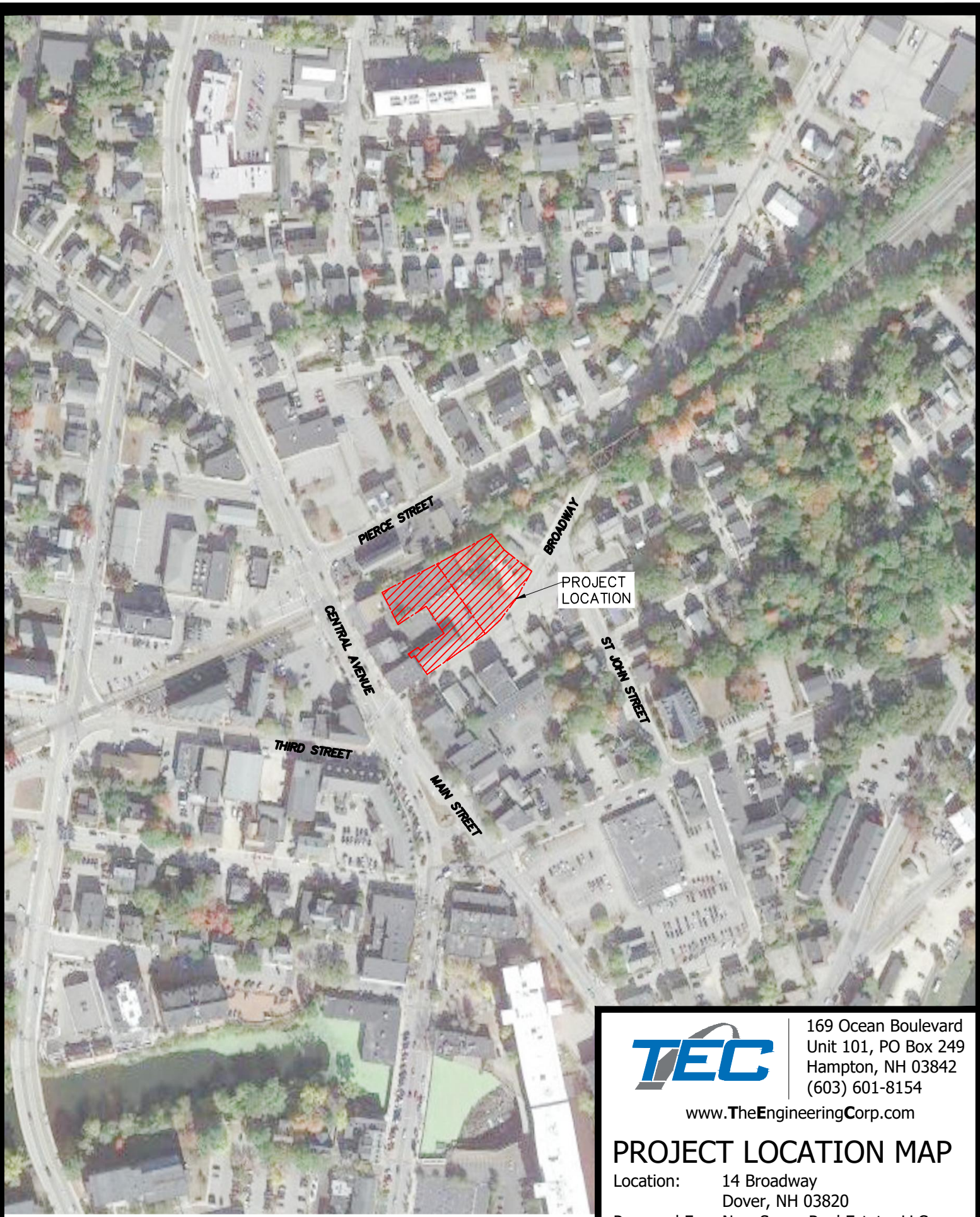


250 0 250 500

SCALE IN FEET

July 20, 2021

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154
www.TheEngineeringCorp.com

PROJECT LOCATION MAP

Location: 14 Broadway
Dover, NH 03820

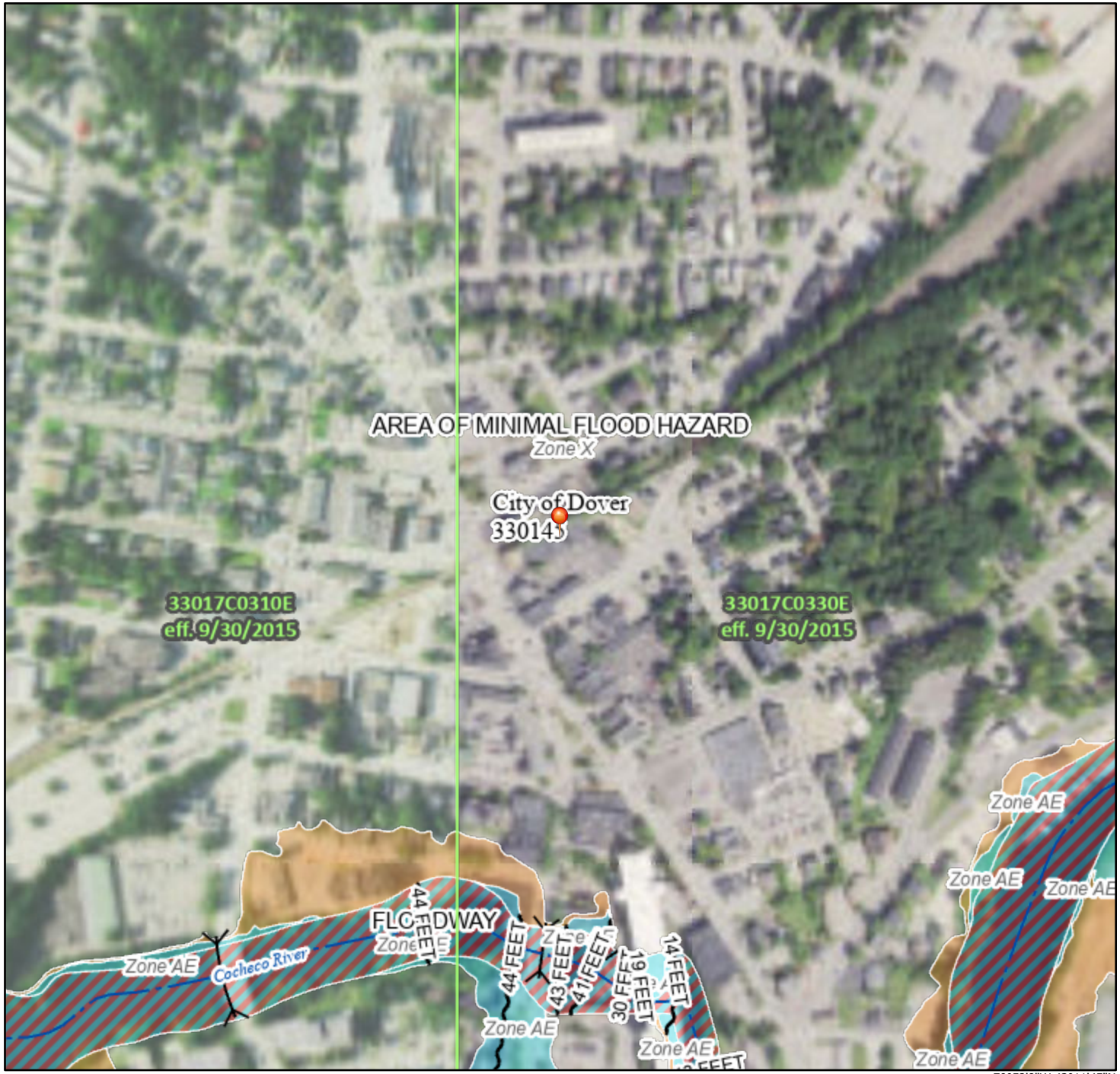
Prepared For: New Space Real Estate, LLC
42 Dover Point Road, Unit L
Dover, NH 03820

Figure 2 – FEMA FIRM
(Intentionally LEFT BLANK)

National Flood Hazard Layer FIRMette

FEMA

70°52'45"W 43°12'11"N



70°52'8"W 43°11'45"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

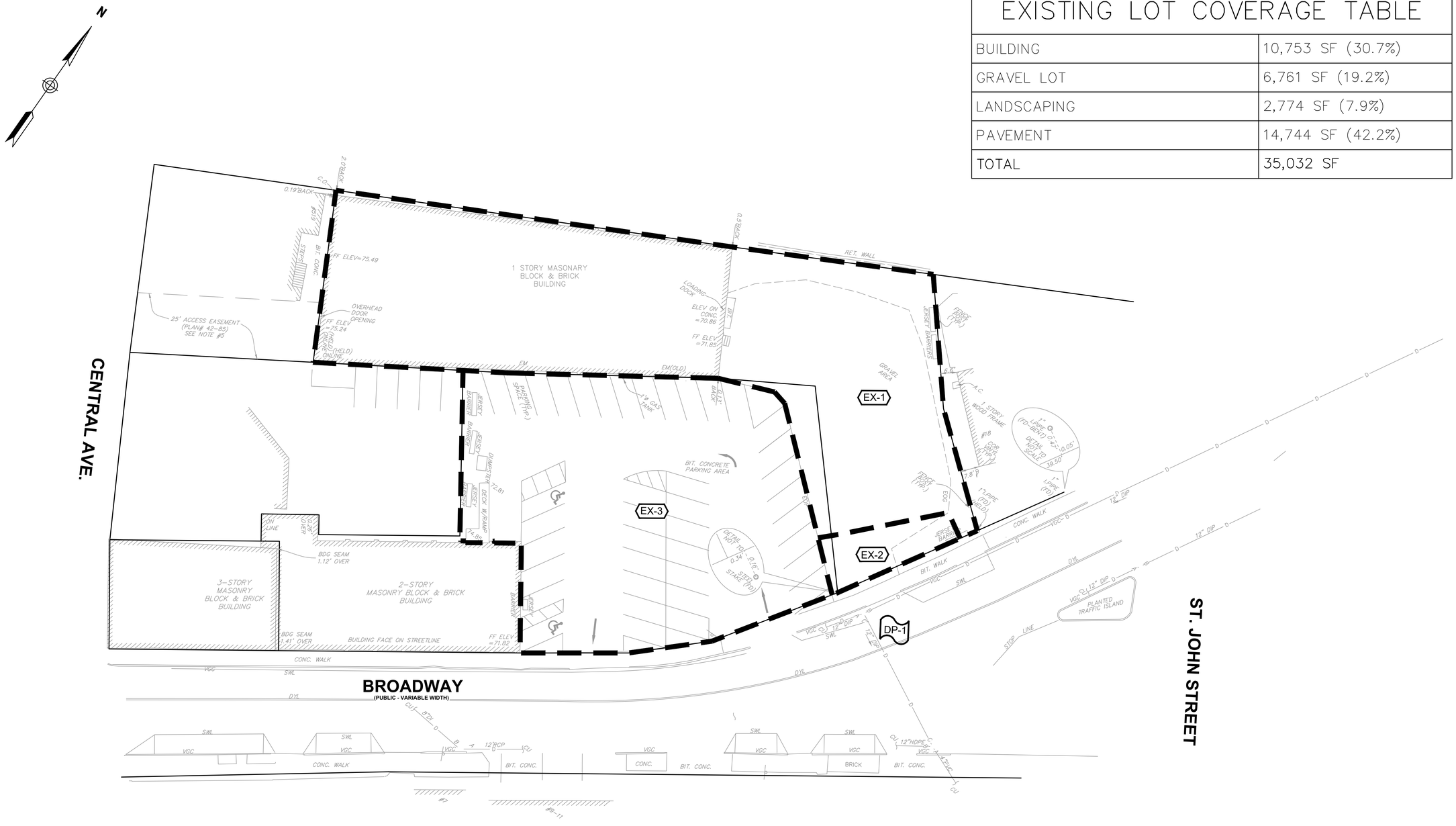
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/20/2021 at 3:27 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Figure D-1 Pre-Development Drainage Areas
(Intentionally LEFT BLANK)

EXISTING LOT COVERAGE TABLE	
BUILDING	10,753 SF (30.7%)
GRAVEL LOT	6,761 SF (19.2%)
LANDSCAPING	2,774 SF (7.9%)
PAVEMENT	14,744 SF (42.2%)
TOTAL	35,032 SF



Pre-Development

14 Broadway
Dover, New Hampshire

Scale: 1" = 20'

October 28, 2021

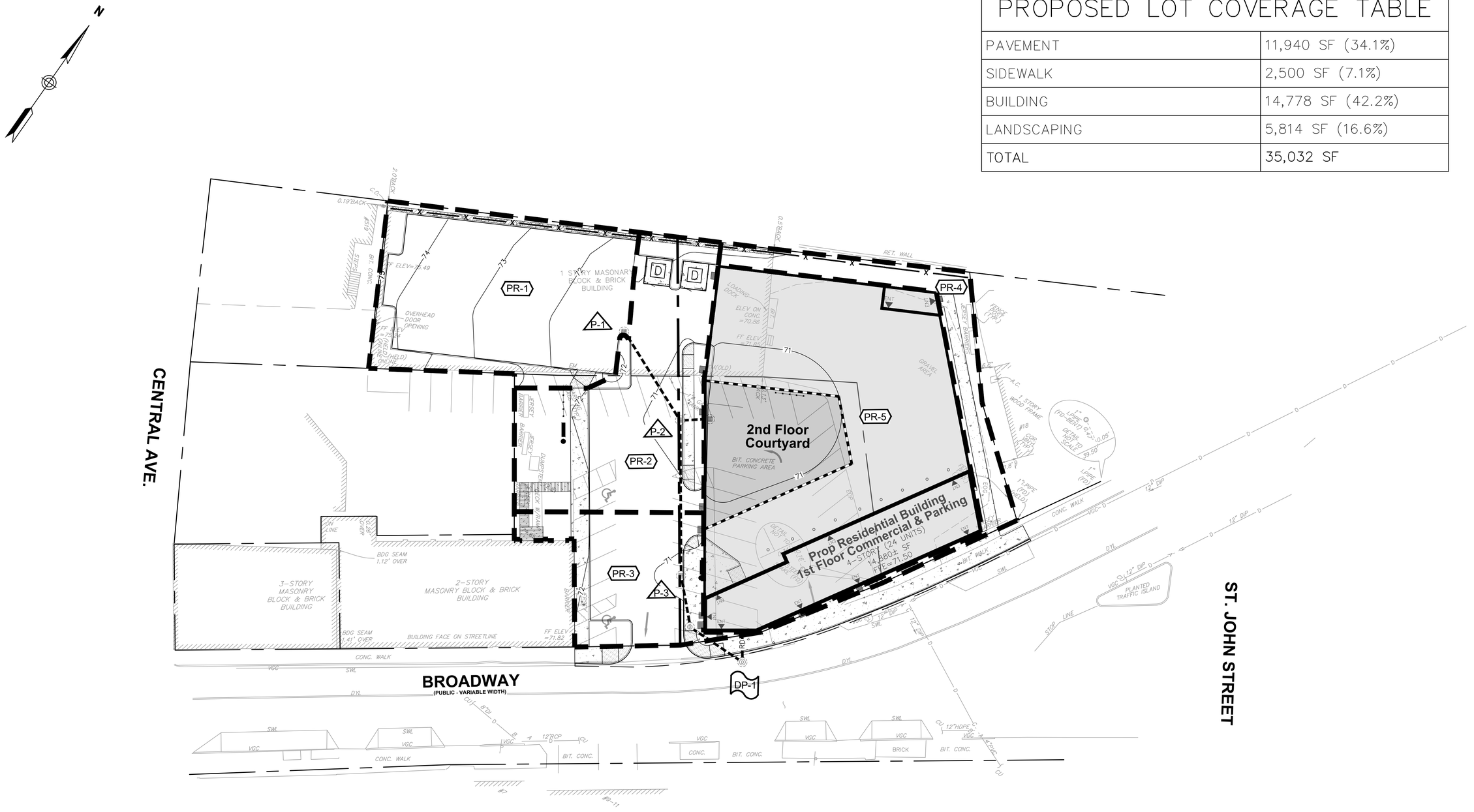
146 Dascomb Road
Andover, MA 01810

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842

t: (978) 794-1792
TheEngineeringCorp.com

Figure D-2 – Post Development Drainage Areas
(Intentionally LEFT BLANK)

PROPOSED LOT COVERAGE TABLE	
PAVEMENT	11,940 SF (34.1%)
SIDEWALK	2,500 SF (7.1%)
BUILDING	14,778 SF (42.2%)
LANDSCAPING	5,814 SF (16.6%)
TOTAL	35,032 SF



146 Dascomb Road
Andover, MA 01810

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842

t: (978) 794-1792
TheEngineeringCorp.com

Scale: 1" = 20'

November 23, 2021

40 0 40 80
SCALE IN FEET

Post-Development

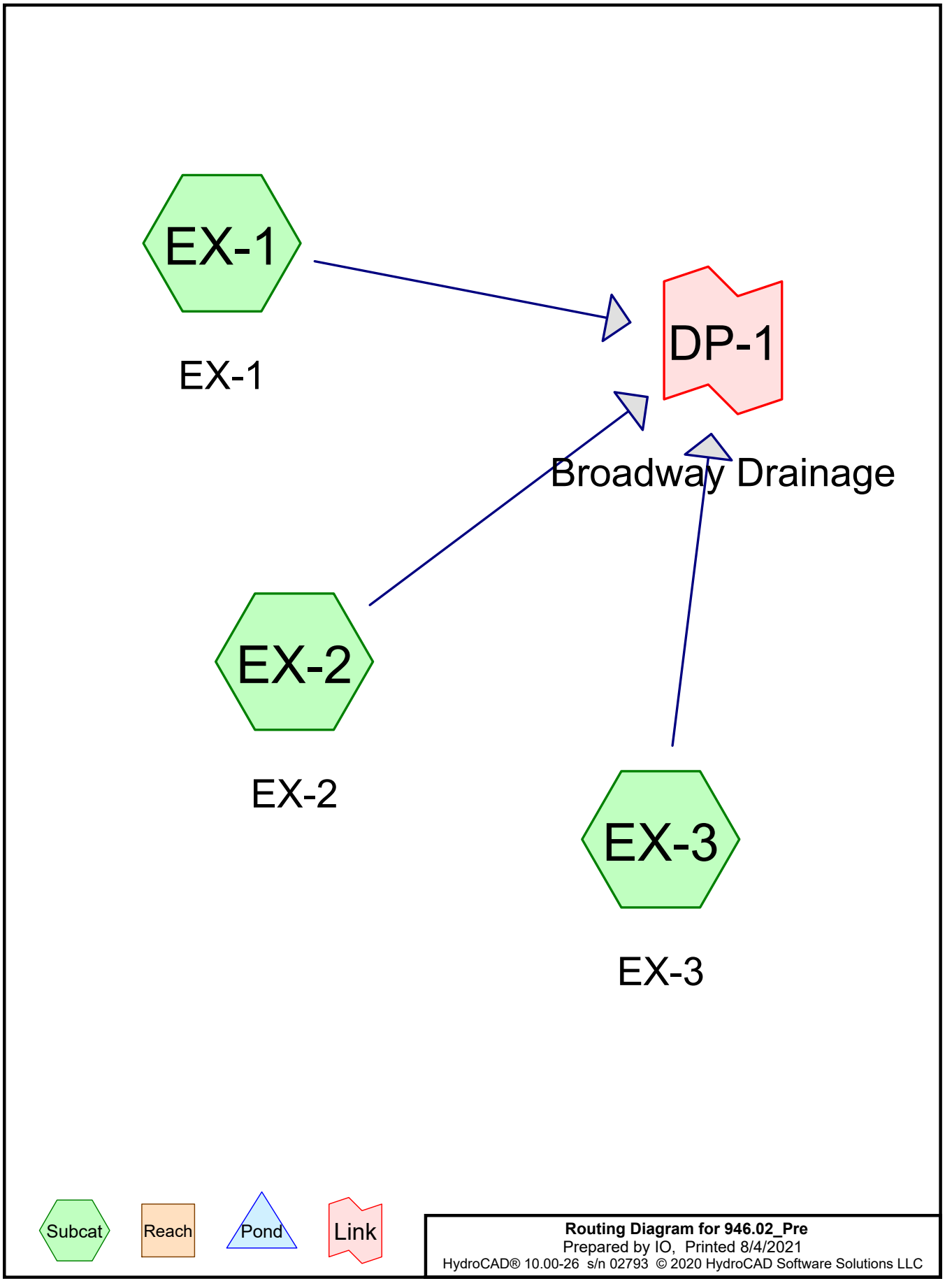
14 Broadway
Dover, New Hampshire

2

Appendix

A

Hydrologic Calculations



Routing Diagram for 946.02_Pre
Prepared by IO, Printed 8/4/2021
HydroCAD® 10.00-26 s/n 02793 © 2020 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 6520 NH Strafford

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.064	79	<50% Grass cover, Poor, HSG B (EX-1, EX-2)
0.155	72	Dirt roads, HSG A (EX-1, EX-2)
0.339	98	Paved parking, HSG A (EX-3)
0.247	98	Roofs, HSG A (EX-1)
0.804	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.741	HSG A	EX-1, EX-2, EX-3
0.064	HSG B	EX-1, EX-2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.804		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.064	0.000	0.000	0.000	0.064	<50% Grass cover, Poor	EX-1, EX-2
0.155	0.000	0.000	0.000	0.000	0.155	Dirt roads	EX-1, EX-2
0.339	0.000	0.000	0.000	0.000	0.339	Paved parking	EX-3
0.247	0.000	0.000	0.000	0.000	0.247	Roofs	EX-1
0.741	**0.064**	**0.000**	**0.000**	**0.000**	**0.804**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: EX-1 Runoff Area=19,263 sf 55.76% Impervious Runoff Depth=1.78"
Tc=5.0 min CN=87 Runoff=0.87 cfs 0.066 af

Subcatchment EX-2: EX-2 Runoff Area=1,013 sf 0.00% Impervious Runoff Depth=0.99"
Tc=5.0 min CN=75 Runoff=0.02 cfs 0.002 af

Subcatchment EX-3: EX-3 Runoff Area=14,756 sf 100.00% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=98 Runoff=0.93 cfs 0.080 af

Link DP-1: Broadway Drainage Inflow=1.82 cfs 0.147 af
Primary=1.82 cfs 0.147 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.147 af Average Runoff Depth = 2.20"
27.22% Pervious = 0.219 ac 72.78% Impervious = 0.585 ac

Summary for Subcatchment EX-1: EX-1

[49] Hint: Tc<2dt may require smaller dt

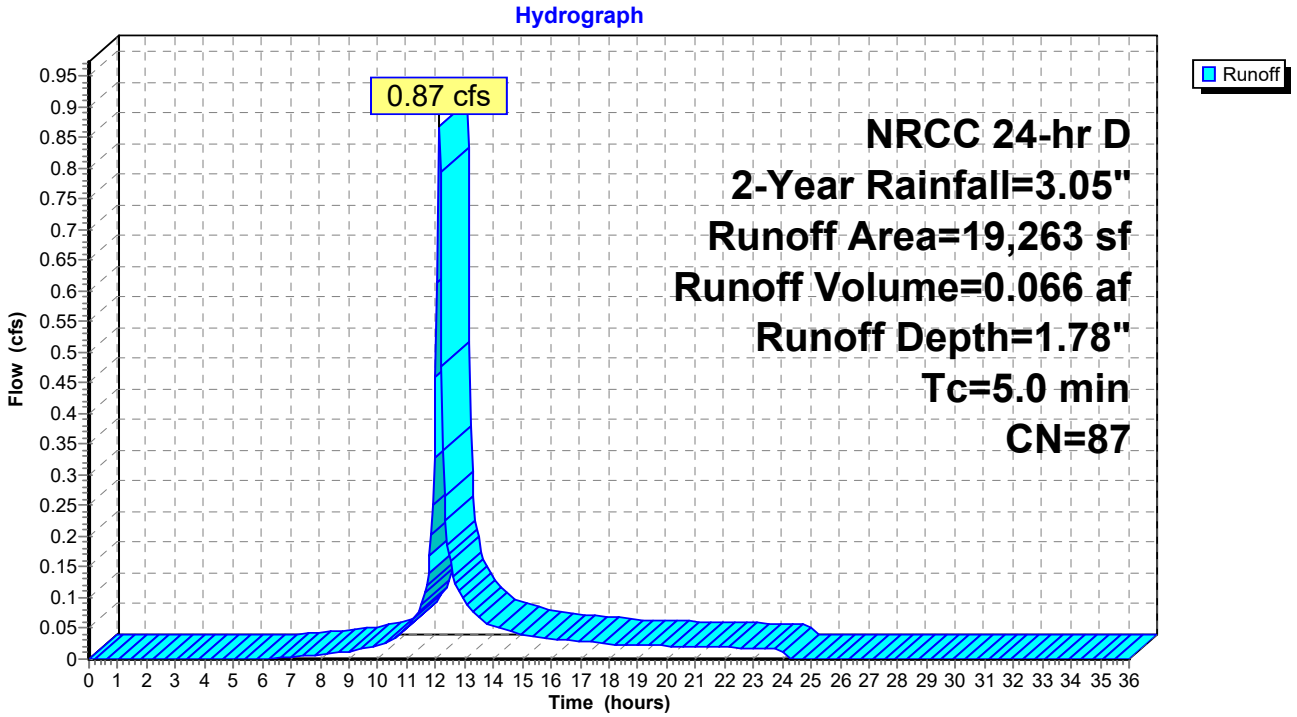
Runoff = 0.87 cfs @ 12.11 hrs, Volume= 0.066 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

Area (sf)	CN	Description
10,741	98	Roofs, HSG A
6,116	72	Dirt roads, HSG A
2,406	79	<50% Grass cover, Poor, HSG B
19,263	87	Weighted Average
8,522		44.24% Pervious Area
10,741		55.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2

[49] Hint: Tc<2dt may require smaller dt

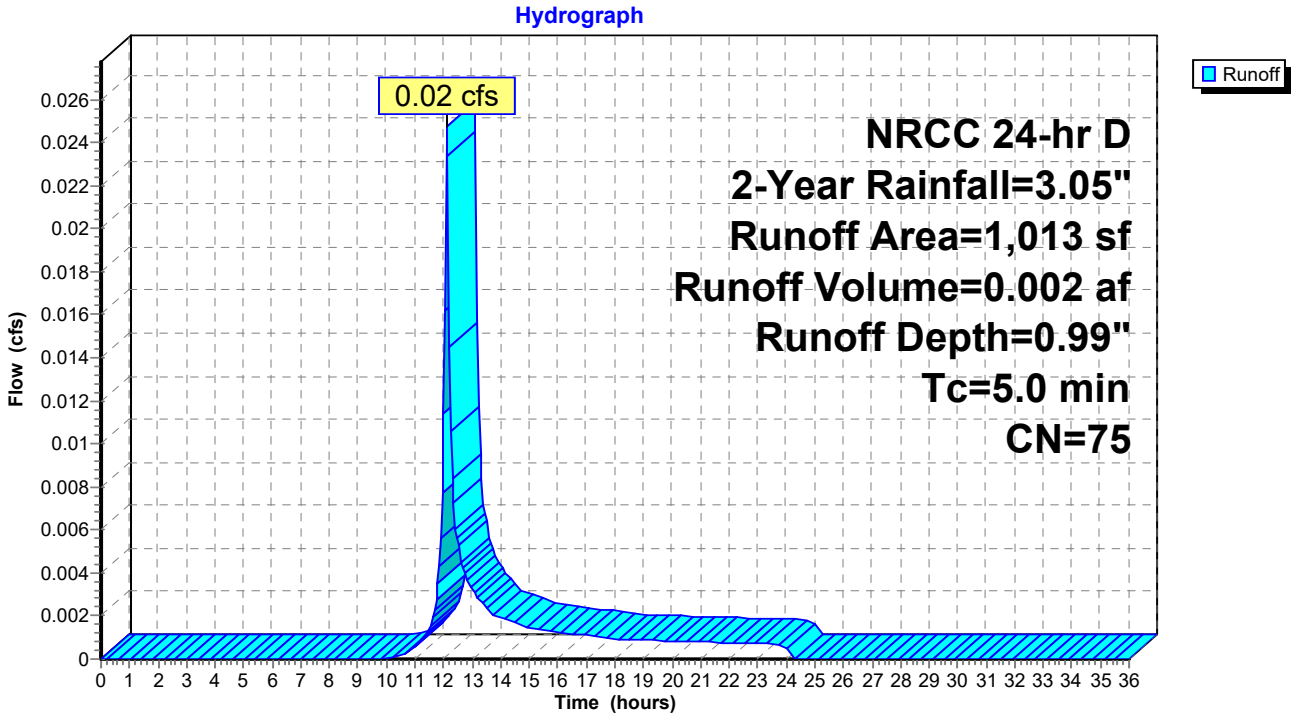
Runoff = 0.02 cfs @ 12.12 hrs, Volume= 0.002 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

Area (sf)	CN	Description
645	72	Dirt roads, HSG A
368	79	<50% Grass cover, Poor, HSG B
1,013	75	Weighted Average
1,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2



Summary for Subcatchment EX-3: EX-3

[49] Hint: Tc<2dt may require smaller dt

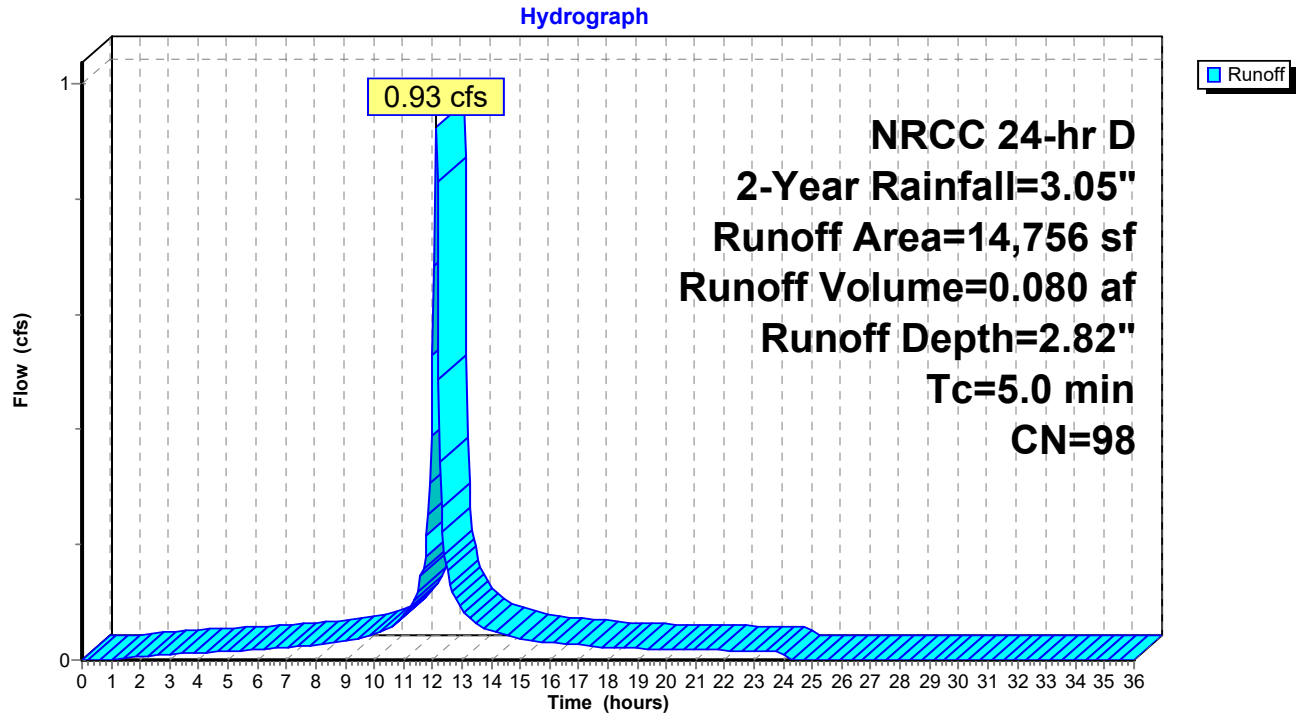
Runoff = 0.93 cfs @ 12.11 hrs, Volume= 0.080 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

Area (sf)	CN	Description
14,756	98	Paved parking, HSG A
14,756		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3

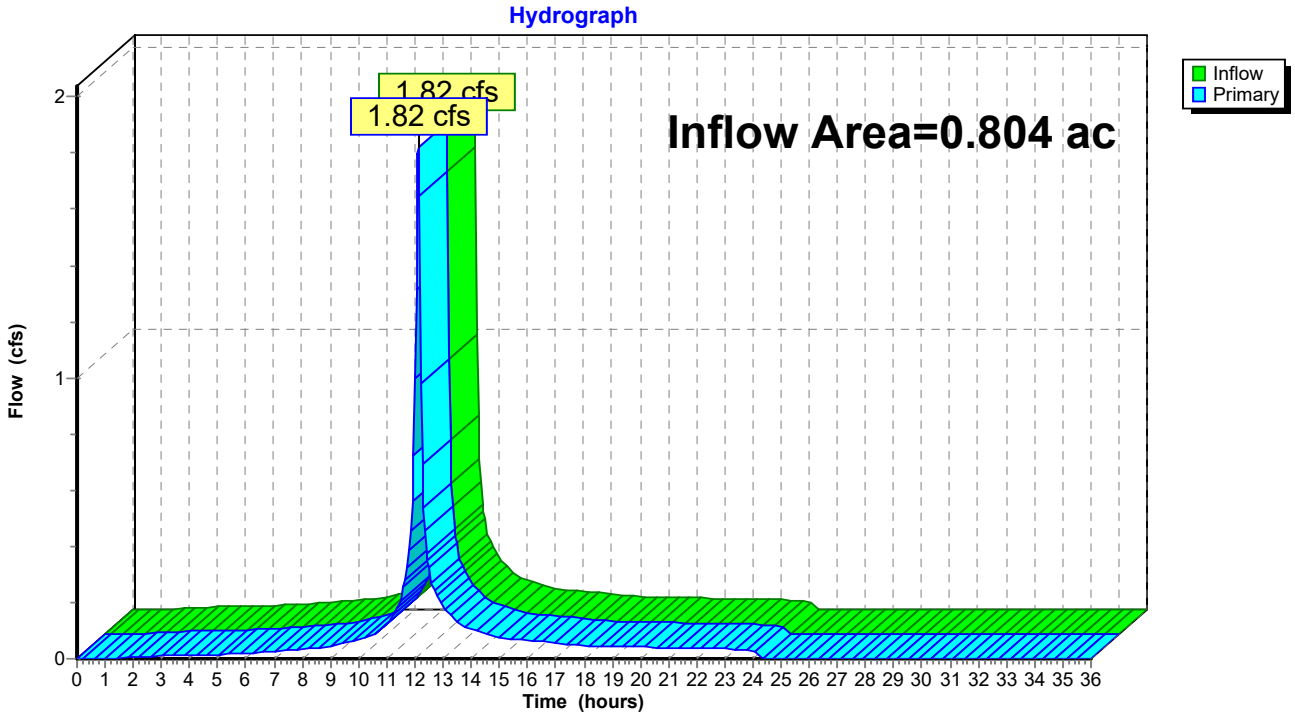


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 72.78% Impervious, Inflow Depth = 2.20" for 2-Year event
Inflow = 1.82 cfs @ 12.11 hrs, Volume= 0.147 af
Primary = 1.82 cfs @ 12.11 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: EX-1 Runoff Area=19,263 sf 55.76% Impervious Runoff Depth=3.16"
Tc=5.0 min CN=87 Runoff=1.51 cfs 0.117 af

Subcatchment EX-2: EX-2 Runoff Area=1,013 sf 0.00% Impervious Runoff Depth=2.11"
Tc=5.0 min CN=75 Runoff=0.05 cfs 0.004 af

Subcatchment EX-3: EX-3 Runoff Area=14,756 sf 100.00% Impervious Runoff Depth=4.33"
Tc=5.0 min CN=98 Runoff=1.40 cfs 0.122 af

Link DP-1: Broadway Drainage Inflow=2.96 cfs 0.243 af
Primary=2.96 cfs 0.243 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.243 af Average Runoff Depth = 3.63"
27.22% Pervious = 0.219 ac 72.78% Impervious = 0.585 ac

Summary for Subcatchment EX-1: EX-1

[49] Hint: Tc<2dt may require smaller dt

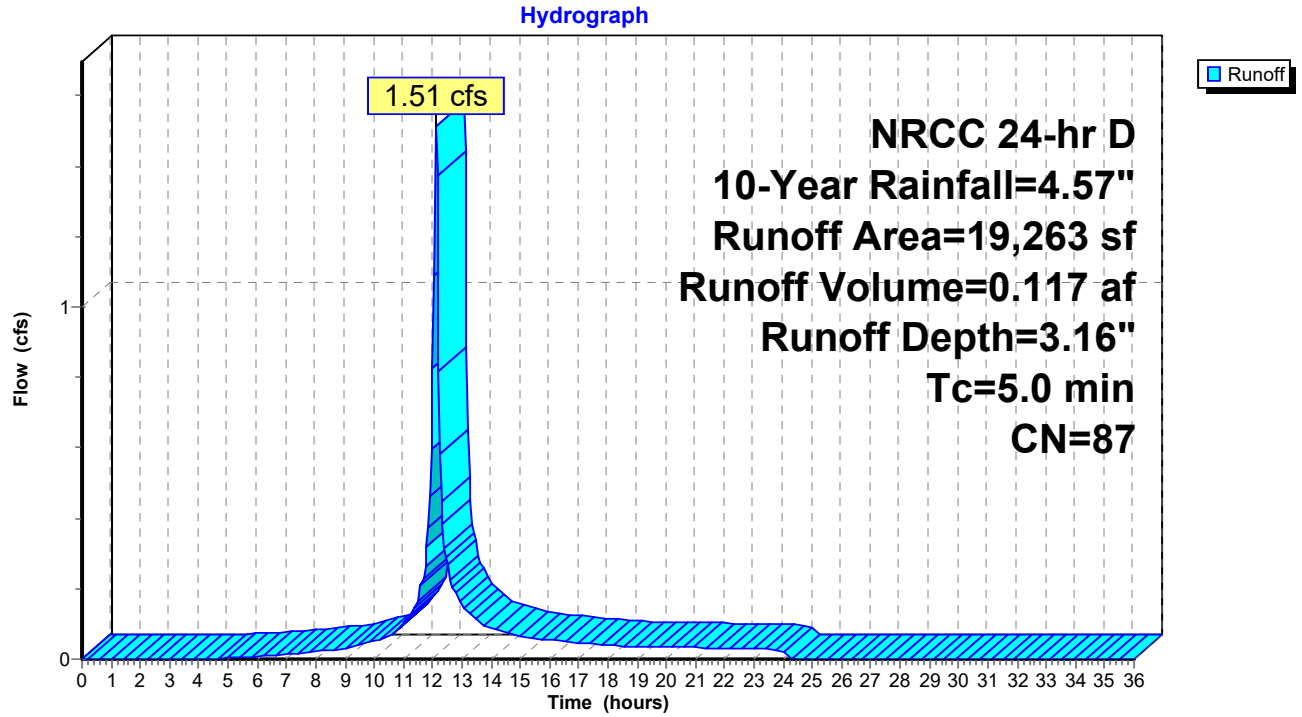
Runoff = 1.51 cfs @ 12.11 hrs, Volume= 0.117 af, Depth= 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

Area (sf)	CN	Description
10,741	98	Roofs, HSG A
6,116	72	Dirt roads, HSG A
2,406	79	<50% Grass cover, Poor, HSG B
19,263	87	Weighted Average
8,522		44.24% Pervious Area
10,741		55.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2

[49] Hint: Tc<2dt may require smaller dt

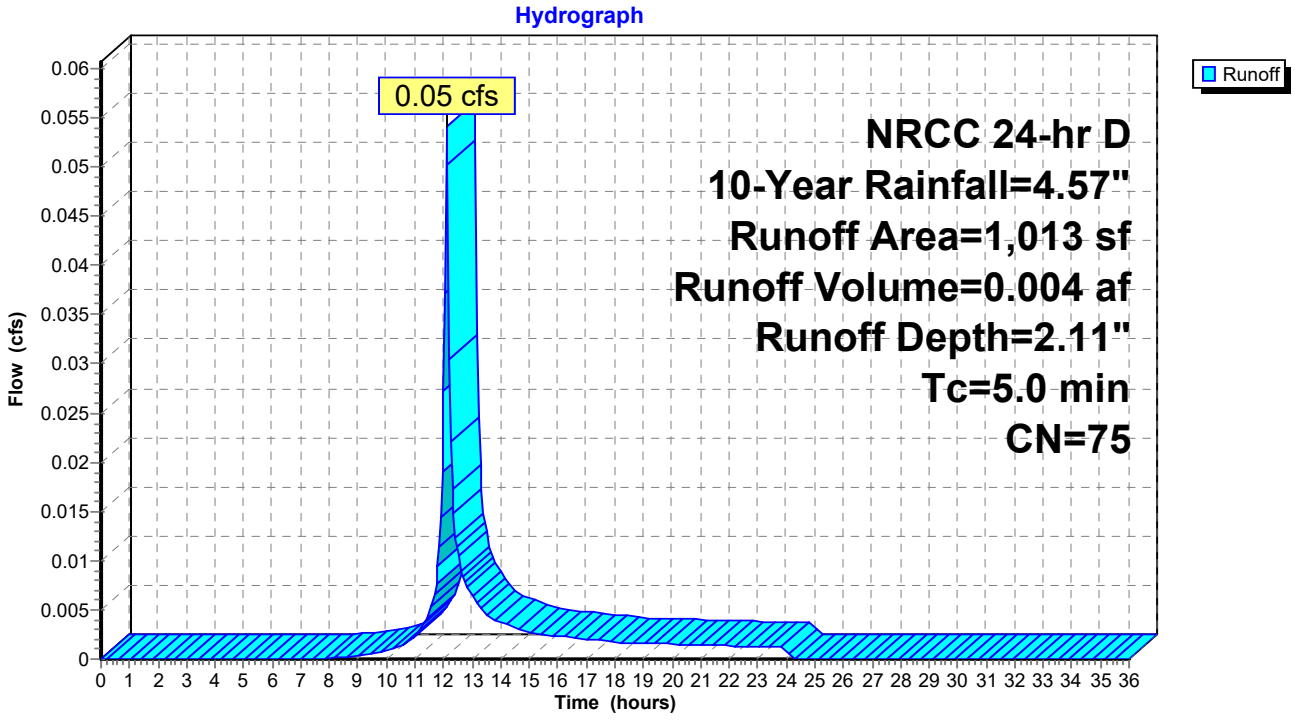
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.004 af, Depth= 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

Area (sf)	CN	Description
645	72	Dirt roads, HSG A
368	79	<50% Grass cover, Poor, HSG B
1,013	75	Weighted Average
1,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2



Summary for Subcatchment EX-3: EX-3

[49] Hint: Tc<2dt may require smaller dt

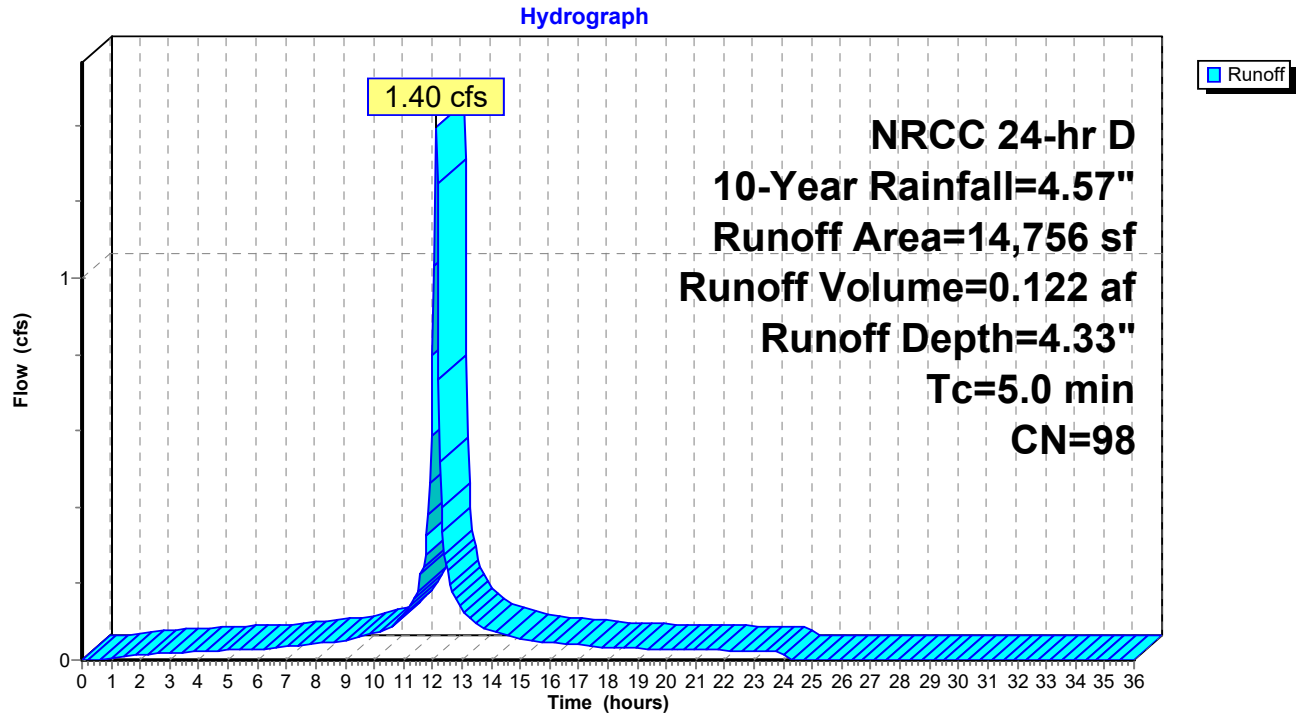
Runoff = 1.40 cfs @ 12.11 hrs, Volume= 0.122 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

Area (sf)	CN	Description
14,756	98	Paved parking, HSG A
14,756		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3

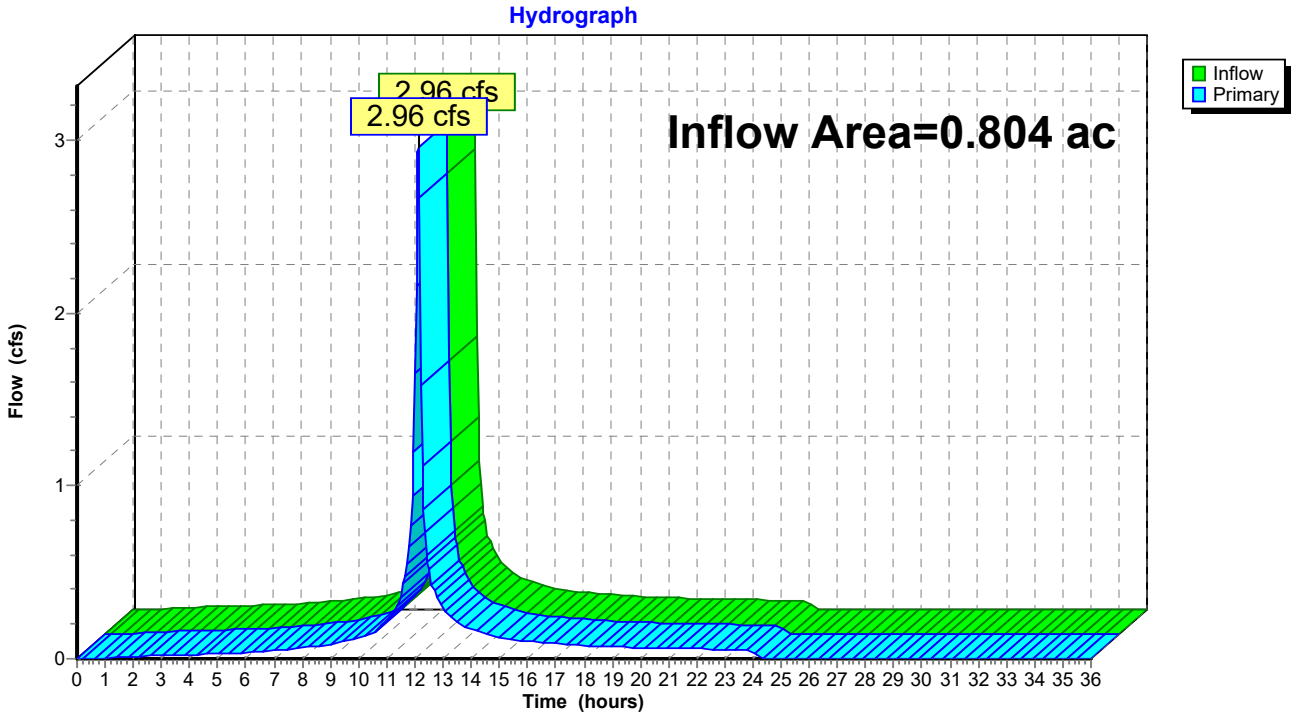


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 72.78% Impervious, Inflow Depth = 3.63" for 10-Year event
Inflow = 2.96 cfs @ 12.11 hrs, Volume= 0.243 af
Primary = 2.96 cfs @ 12.11 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: EX-1 Runoff Area=19,263 sf 55.76% Impervious Runoff Depth=4.30"
Tc=5.0 min CN=87 Runoff=2.02 cfs 0.158 af

Subcatchment EX-2: EX-2 Runoff Area=1,013 sf 0.00% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=75 Runoff=0.08 cfs 0.006 af

Subcatchment EX-3: EX-3 Runoff Area=14,756 sf 100.00% Impervious Runoff Depth=5.53"
Tc=5.0 min CN=98 Runoff=1.77 cfs 0.156 af

Link DP-1: Broadway Drainage Inflow=3.87 cfs 0.321 af
Primary=3.87 cfs 0.321 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.321 af Average Runoff Depth = 4.78"
27.22% Pervious = 0.219 ac 72.78% Impervious = 0.585 ac

Summary for Subcatchment EX-1: EX-1

[49] Hint: Tc<2dt may require smaller dt

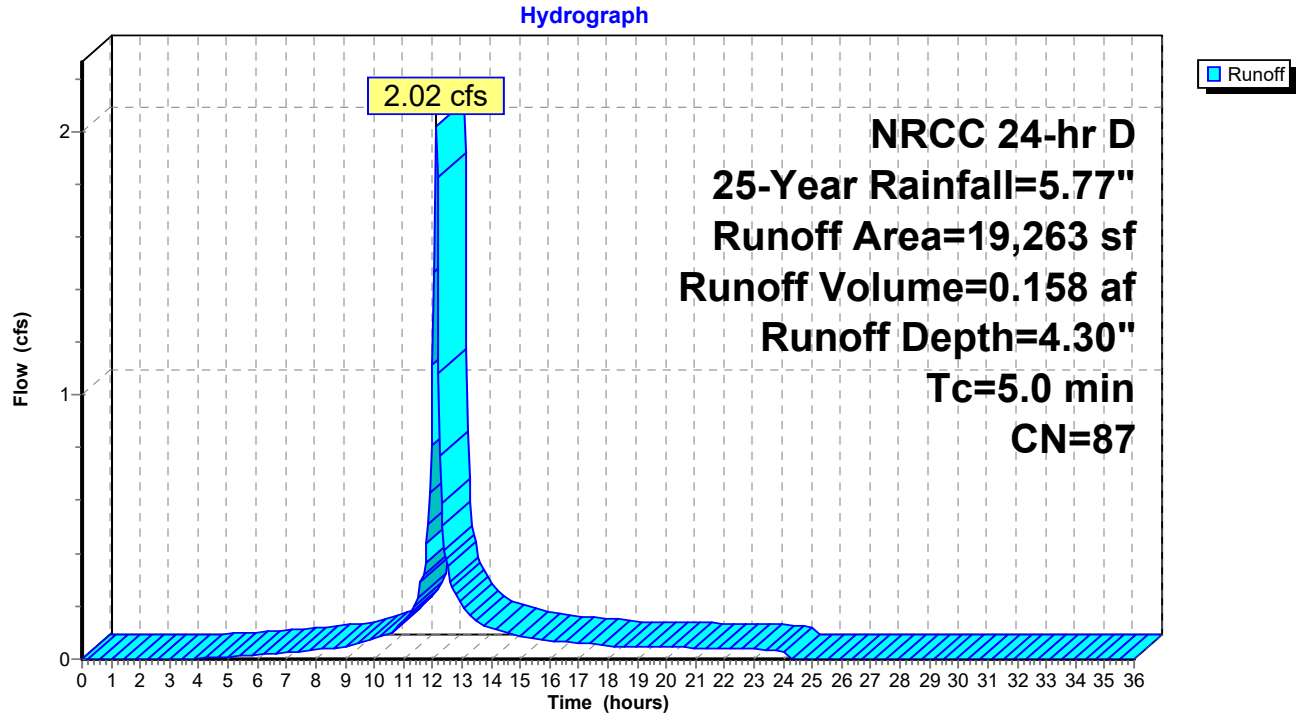
Runoff = 2.02 cfs @ 12.11 hrs, Volume= 0.158 af, Depth= 4.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

Area (sf)	CN	Description
10,741	98	Roofs, HSG A
6,116	72	Dirt roads, HSG A
2,406	79	<50% Grass cover, Poor, HSG B
19,263	87	Weighted Average
8,522		44.24% Pervious Area
10,741		55.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2

[49] Hint: Tc<2dt may require smaller dt

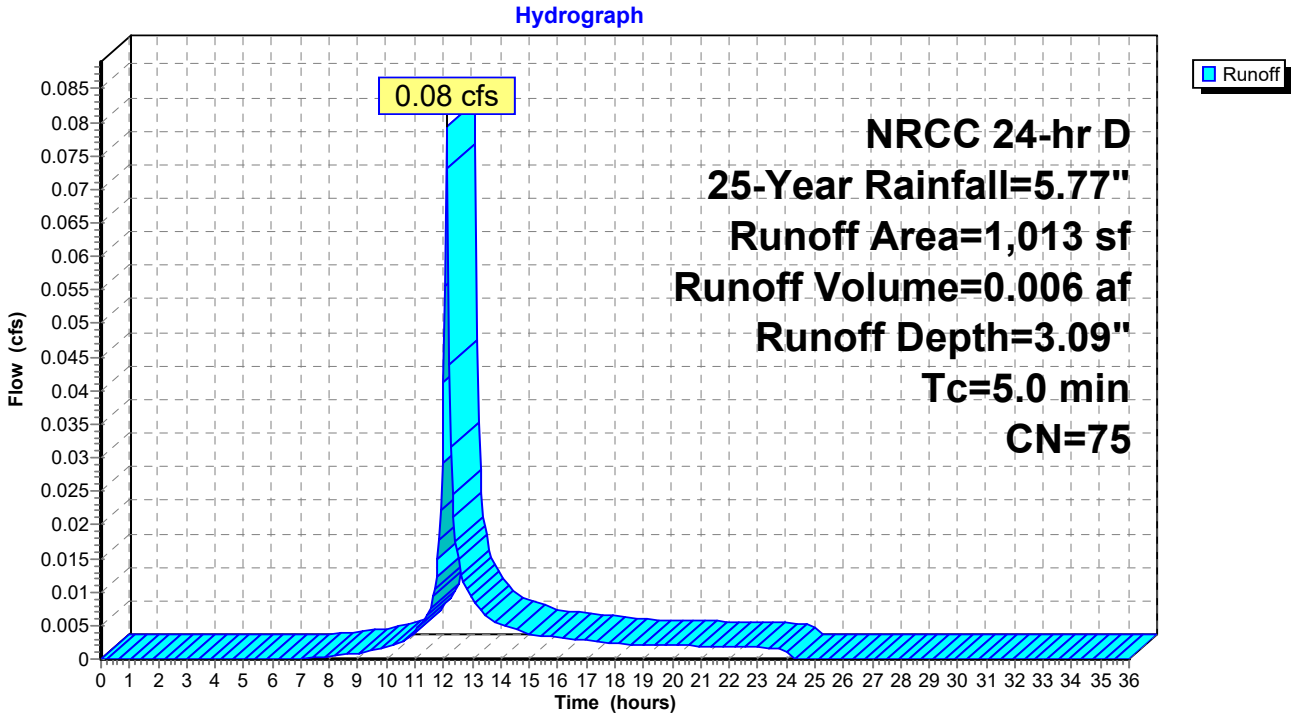
Runoff = 0.08 cfs @ 12.12 hrs, Volume= 0.006 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

Area (sf)	CN	Description
645	72	Dirt roads, HSG A
368	79	<50% Grass cover, Poor, HSG B
1,013	75	Weighted Average
1,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2



Summary for Subcatchment EX-3: EX-3

[49] Hint: Tc<2dt may require smaller dt

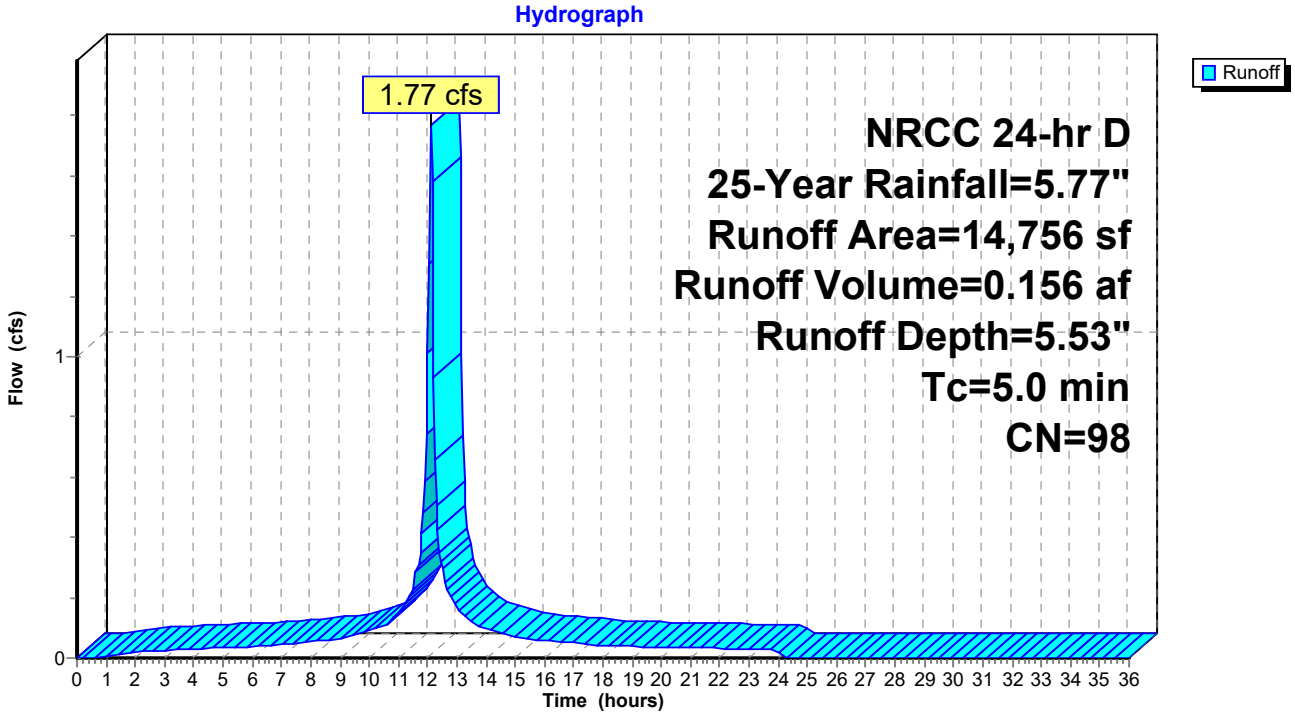
Runoff = 1.77 cfs @ 12.11 hrs, Volume= 0.156 af, Depth= 5.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

Area (sf)	CN	Description
14,756	98	Paved parking, HSG A
14,756		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3

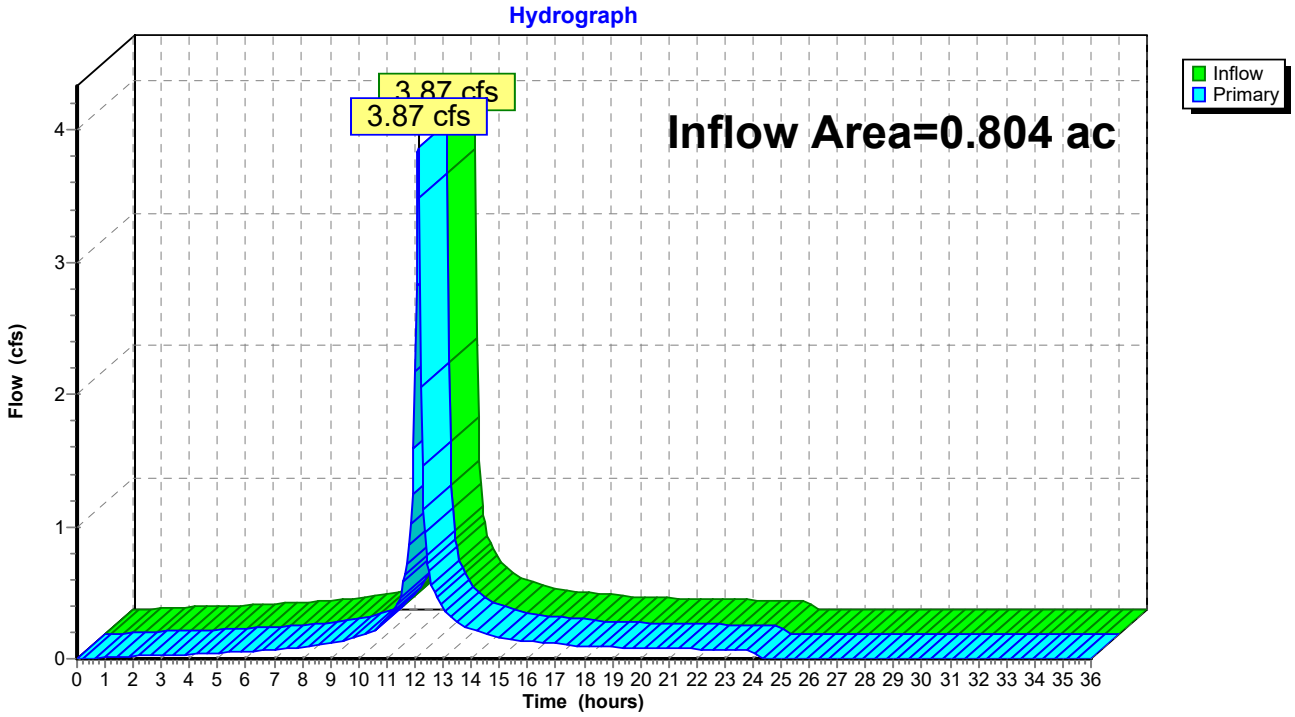


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 72.78% Impervious, Inflow Depth = 4.78" for 25-Year event
Inflow = 3.87 cfs @ 12.11 hrs, Volume= 0.321 af
Primary = 3.87 cfs @ 12.11 hrs, Volume= 0.321 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: EX-1 Runoff Area=19,263 sf 55.76% Impervious Runoff Depth=5.36"
Tc=5.0 min CN=87 Runoff=2.49 cfs 0.198 af

Subcatchment EX-2: EX-2 Runoff Area=1,013 sf 0.00% Impervious Runoff Depth=4.04"
Tc=5.0 min CN=75 Runoff=0.10 cfs 0.008 af

Subcatchment EX-3: EX-3 Runoff Area=14,756 sf 100.00% Impervious Runoff Depth=6.64"
Tc=5.0 min CN=98 Runoff=2.11 cfs 0.187 af

Link DP-1: Broadway Drainage Inflow=4.71 cfs 0.393 af
Primary=4.71 cfs 0.393 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.393 af Average Runoff Depth = 5.86"
27.22% Pervious = 0.219 ac 72.78% Impervious = 0.585 ac

Summary for Subcatchment EX-1: EX-1

[49] Hint: Tc<2dt may require smaller dt

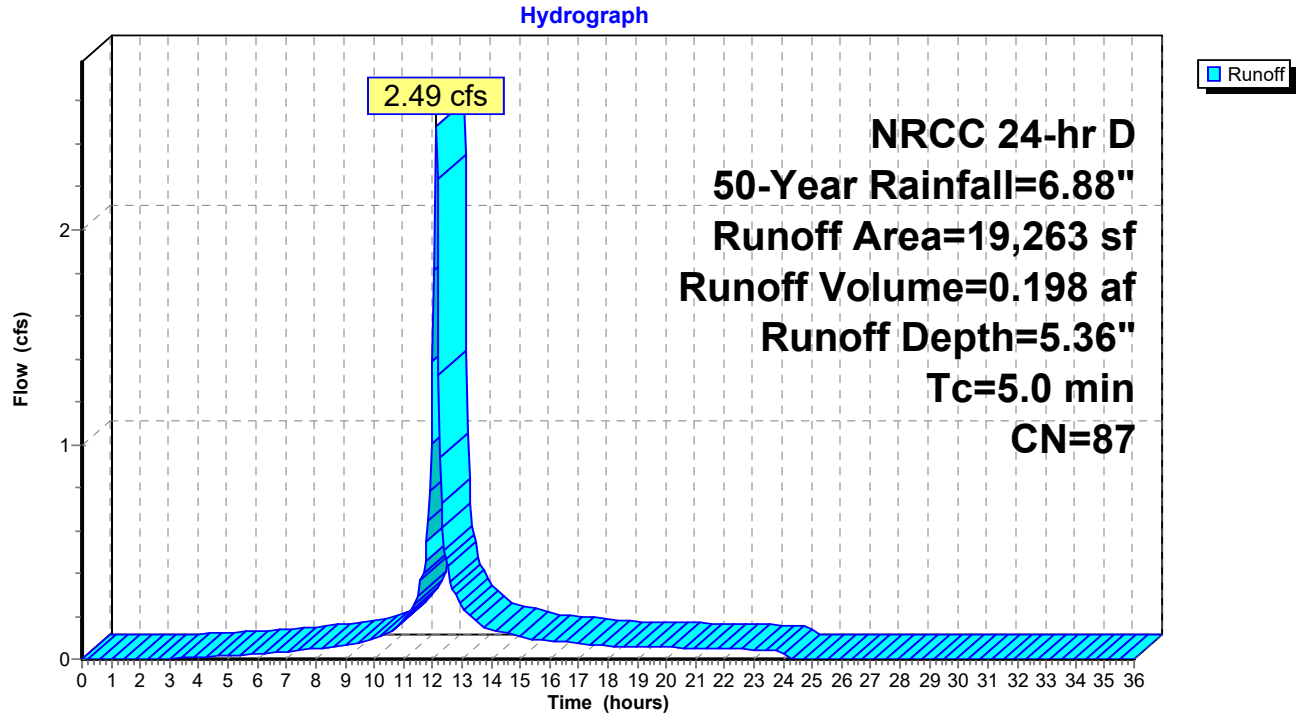
Runoff = 2.49 cfs @ 12.11 hrs, Volume= 0.198 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

Area (sf)	CN	Description
10,741	98	Roofs, HSG A
6,116	72	Dirt roads, HSG A
2,406	79	<50% Grass cover, Poor, HSG B
19,263	87	Weighted Average
8,522		44.24% Pervious Area
10,741		55.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2

[49] Hint: Tc<2dt may require smaller dt

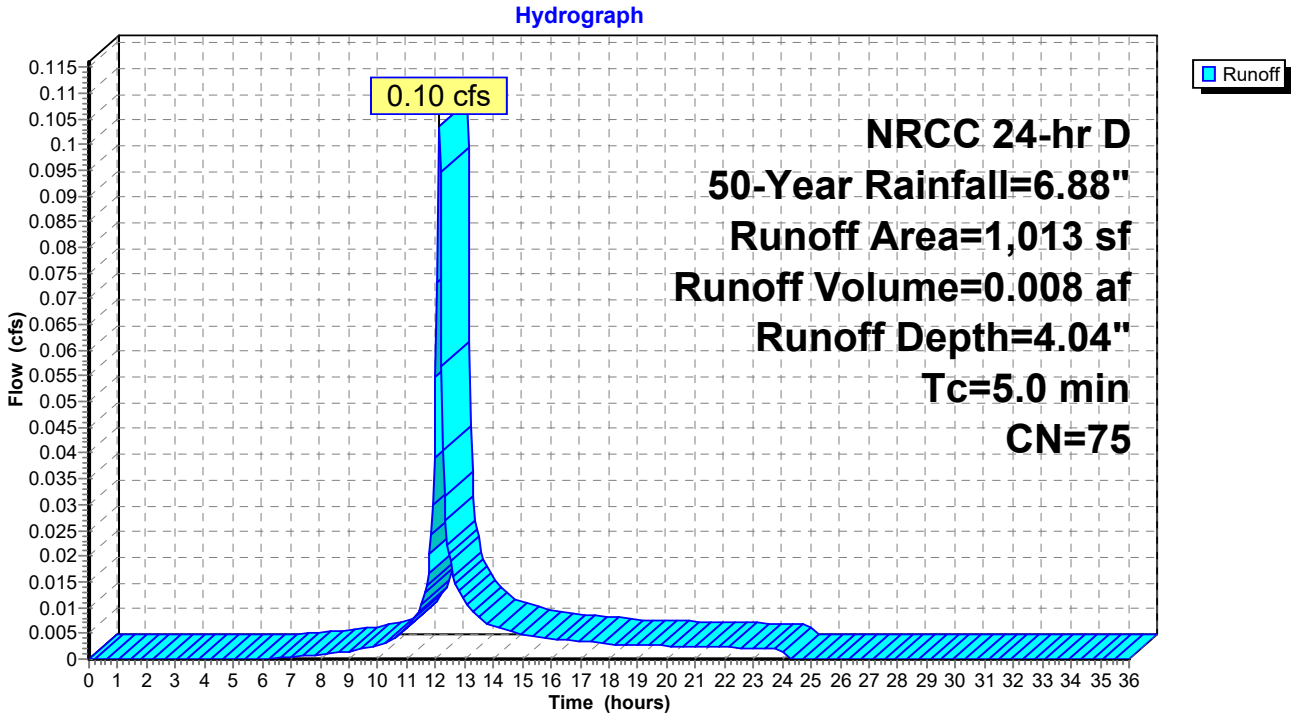
Runoff = 0.10 cfs @ 12.11 hrs, Volume= 0.008 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

Area (sf)	CN	Description
645	72	Dirt roads, HSG A
368	79	<50% Grass cover, Poor, HSG B
1,013	75	Weighted Average
1,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2



Summary for Subcatchment EX-3: EX-3

[49] Hint: Tc<2dt may require smaller dt

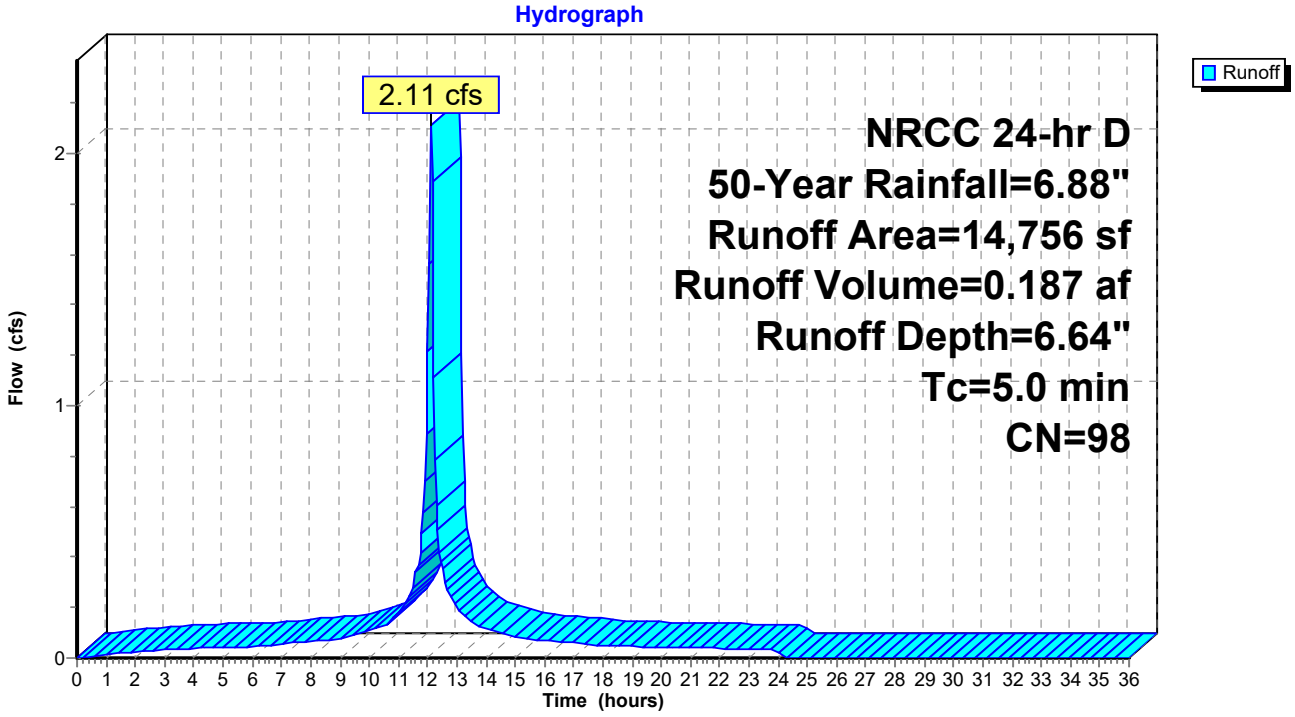
Runoff = 2.11 cfs @ 12.11 hrs, Volume= 0.187 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

Area (sf)	CN	Description
14,756	98	Paved parking, HSG A
14,756		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3

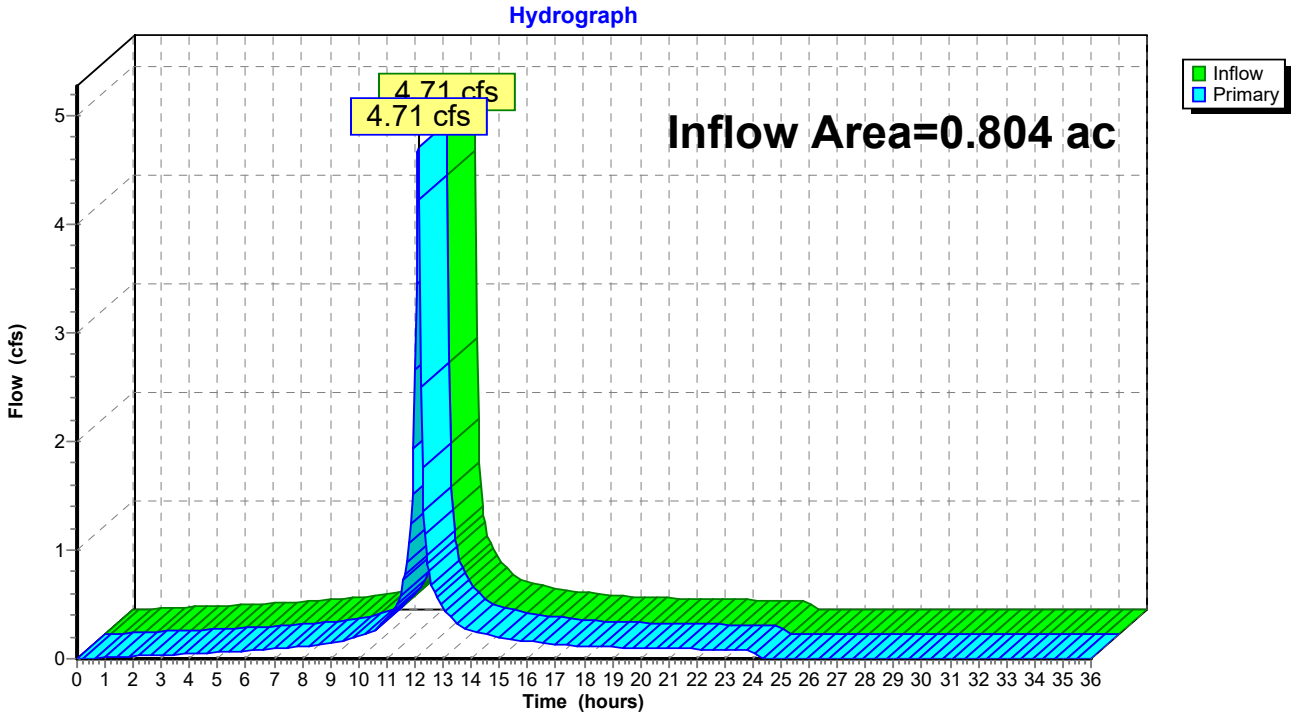


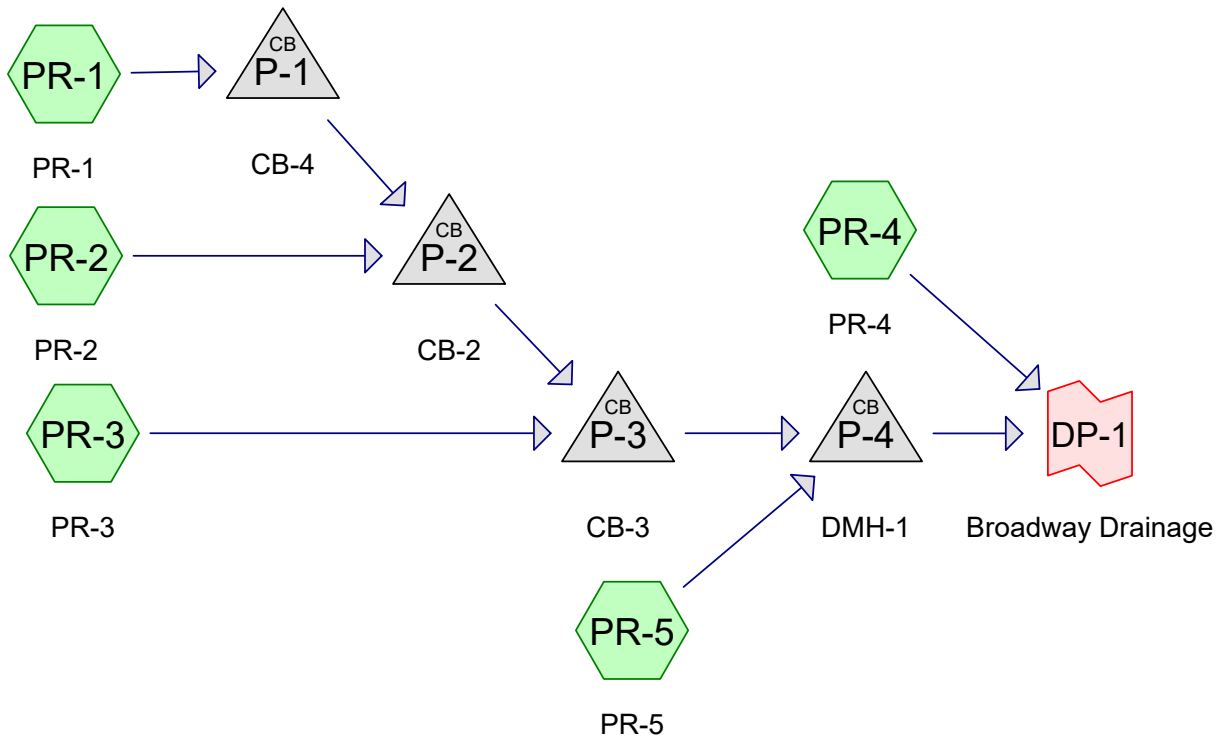
Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 72.78% Impervious, Inflow Depth = 5.86" for 50-Year event
Inflow = 4.71 cfs @ 12.11 hrs, Volume= 0.393 af
Primary = 4.71 cfs @ 12.11 hrs, Volume= 0.393 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP-1: Broadway Drainage





Subcat Reach Pond Link

Routing Diagram for 946.02_Post
Prepared by IO, Printed 11/23/2021
HydroCAD® 10.00-26 s/n 02793 © 2020 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 6520 NH Strafford

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.133	49	50-75% Grass cover, Fair, HSG A (PR-1, PR-2, PR-3, PR-4)
0.057	98	Cement Concrete Sidewalk, HSG A (PR-1, PR-2, PR-3, PR-4)
0.274	98	Paved parking, HSG A (PR-1, PR-2, PR-3)
0.339	98	Roofs, HSG A (PR-5)
0.804	**90**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.804	HSG A	PR-1, PR-2, PR-3, PR-4, PR-5
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.804		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.133	0.000	0.000	0.000	0.000	0.133	50-75% Grass cover, Fair	PR-1, PR-2, PR-3, PR-4
0.057	0.000	0.000	0.000	0.000	0.057	Cement Concrete Sidewalk	PR-1, PR-2, PR-3, PR-4
0.274	0.000	0.000	0.000	0.000	0.274	Paved parking	PR-1, PR-2, PR-3
0.339	0.000	0.000	0.000	0.000	0.339	Roofs	PR-5
0.804	**0.000**	**0.000**	**0.000**	**0.000**	**0.804**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	P-1	67.45	67.40	40.5	0.0012	0.012	12.0	0.0	0.0
2	P-2	67.00	66.85	63.0	0.0024	0.012	12.0	0.0	0.0
3	P-3	66.80	66.60	41.0	0.0049	0.012	12.0	0.0	0.0
4	P-4	66.50	66.10	72.0	0.0056	0.013	12.0	0.0	0.0

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: PR-1 Runoff Area=7,522 sf 80.48% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=88 Runoff=0.37 cfs 0.027 af

Subcatchment PR-2: PR-2 Runoff Area=6,666 sf 69.32% Impervious Runoff Depth=1.49"
Tc=5.0 min CN=83 Runoff=0.26 cfs 0.019 af

Subcatchment PR-3: PR-3 Runoff Area=3,515 sf 86.06% Impervious Runoff Depth=2.12"
Tc=5.0 min CN=91 Runoff=0.19 cfs 0.014 af

Subcatchment PR-4: PR-4 Runoff Area=2,549 sf 28.95% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=63 Runoff=0.02 cfs 0.002 af

Subcatchment PR-5: PR-5 Runoff Area=14,778 sf 100.00% Impervious Runoff Depth=2.82"
Tc=5.0 min CN=98 Runoff=0.95 cfs 0.080 af

Pond P-1: CB-4 Peak Elev=67.88' Inflow=0.37 cfs 0.027 af
12.0" Round Culvert n=0.012 L=40.5' S=0.0012 '/' Outflow=0.37 cfs 0.027 af

Pond P-2: CB-2 Peak Elev=67.53' Inflow=0.63 cfs 0.046 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0024 '/' Outflow=0.63 cfs 0.046 af

Pond P-3: CB-3 Peak Elev=67.36' Inflow=0.82 cfs 0.060 af
12.0" Round Culvert n=0.012 L=41.0' S=0.0049 '/' Outflow=0.82 cfs 0.060 af

Pond P-4: DMH-1 Peak Elev=67.37' Inflow=1.77 cfs 0.140 af
12.0" Round Culvert n=0.013 L=72.0' S=0.0056 '/' Outflow=1.77 cfs 0.140 af

Link DP-1: Broadway Drainage Inflow=1.79 cfs 0.142 af
Primary=1.79 cfs 0.142 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.142 af Average Runoff Depth = 2.12"
16.60% Pervious = 0.133 ac 83.40% Impervious = 0.671 ac

Summary for Subcatchment PR-1: PR-1

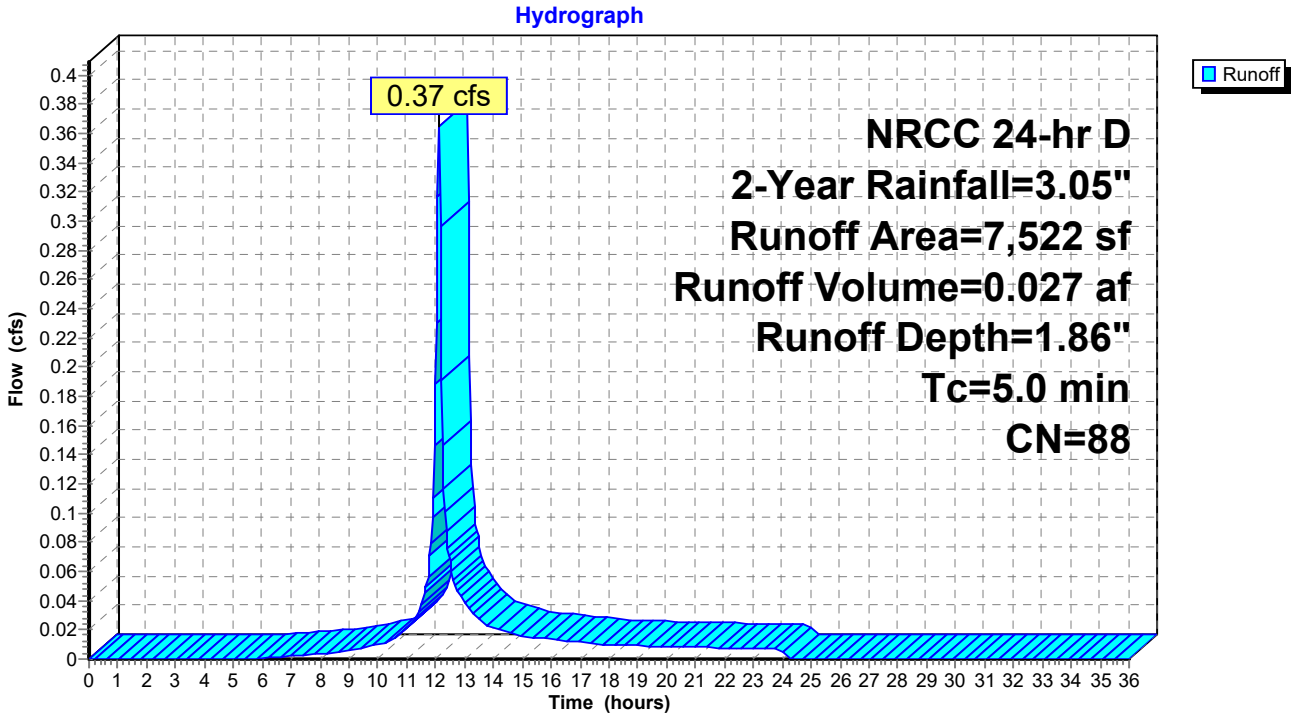
Runoff = 0.37 cfs @ 12.12 hrs, Volume= 0.027 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

	Area (sf)	CN	Description
	5,997	98	Paved parking, HSG A
	1,468	49	50-75% Grass cover, Fair, HSG A
*	57	98	Cement Concrete Sidewalk, HSG A
	7,522	88	Weighted Average
	1,468		19.52% Pervious Area
	6,054		80.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

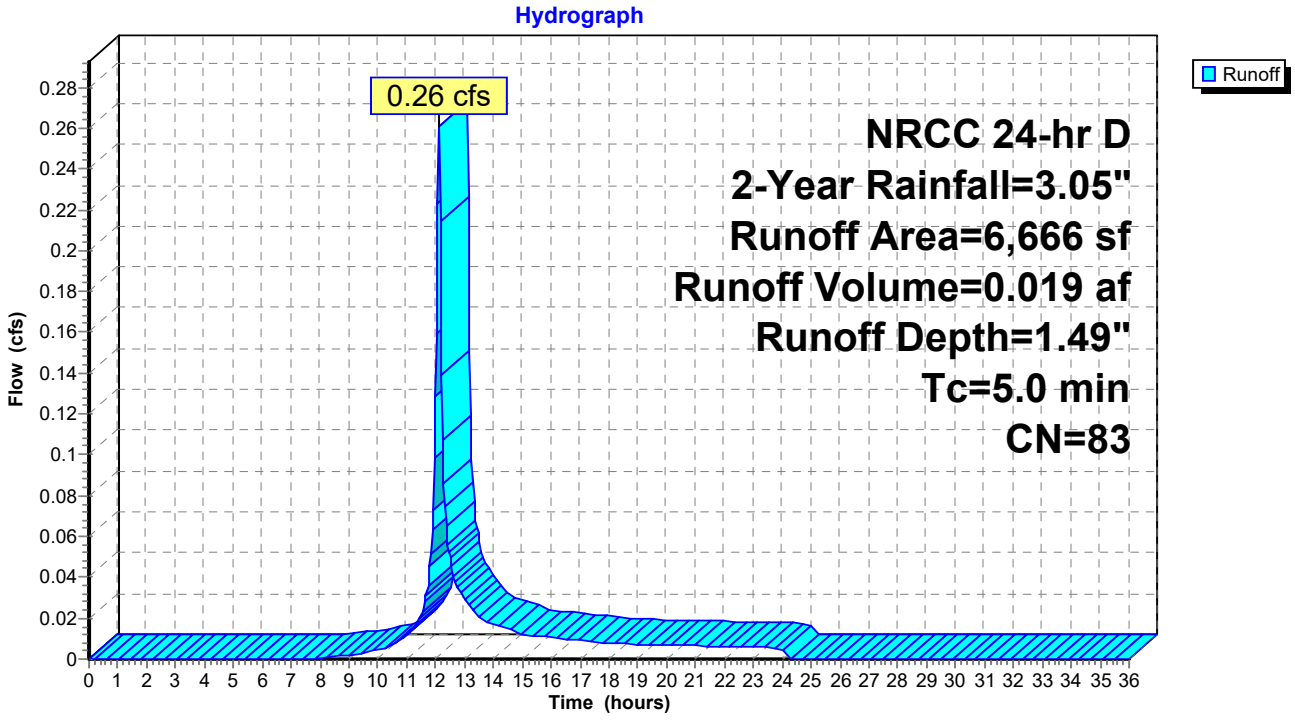
Runoff = 0.26 cfs @ 12.12 hrs, Volume= 0.019 af, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

	Area (sf)	CN	Description
	3,694	98	Paved parking, HSG A
	2,045	49	50-75% Grass cover, Fair, HSG A
*	927	98	Cement Concrete Sidewalk, HSG A
	6,666	83	Weighted Average
	2,045		30.68% Pervious Area
	4,621		69.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

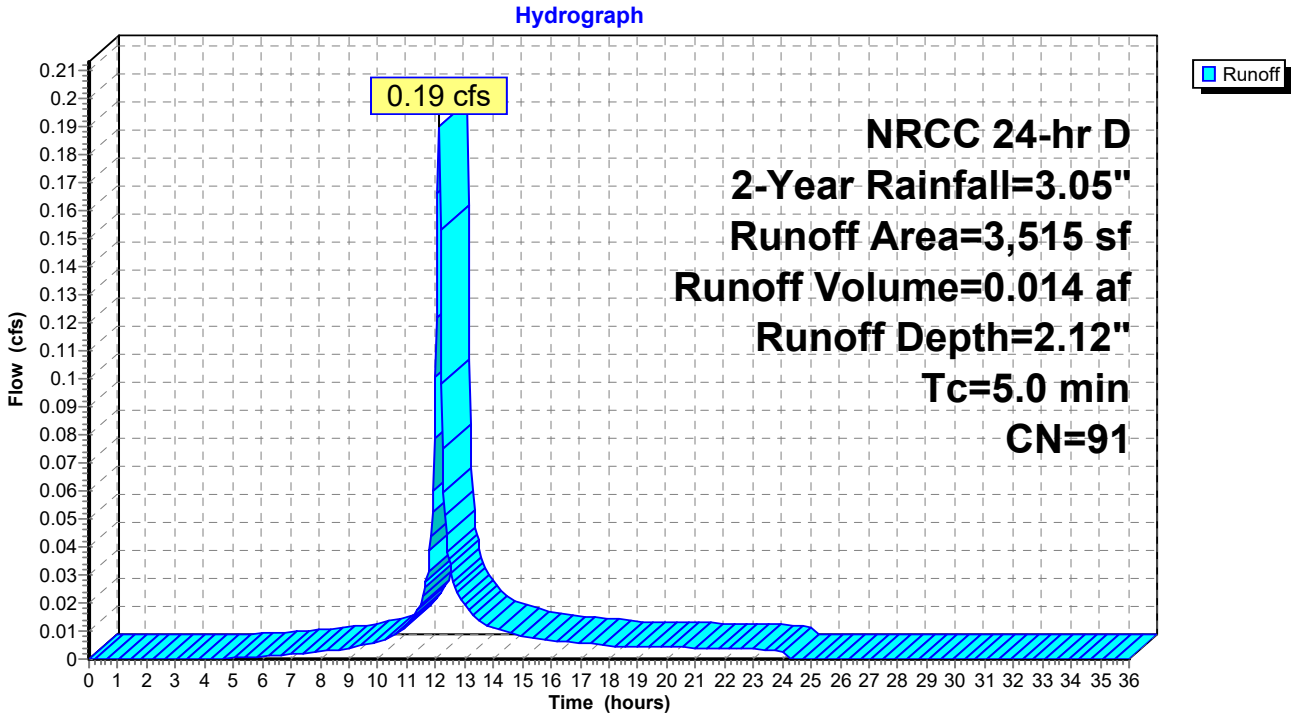
Runoff = 0.19 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

	Area (sf)	CN	Description
	2,249	98	Paved parking, HSG A
	490	49	50-75% Grass cover, Fair, HSG A
*	776	98	Cement Concrete Sidewalk, HSG A
	3,515	91	Weighted Average
	490		13.94% Pervious Area
	3,025		86.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-3: PR-3



Summary for Subcatchment PR-4: PR-4

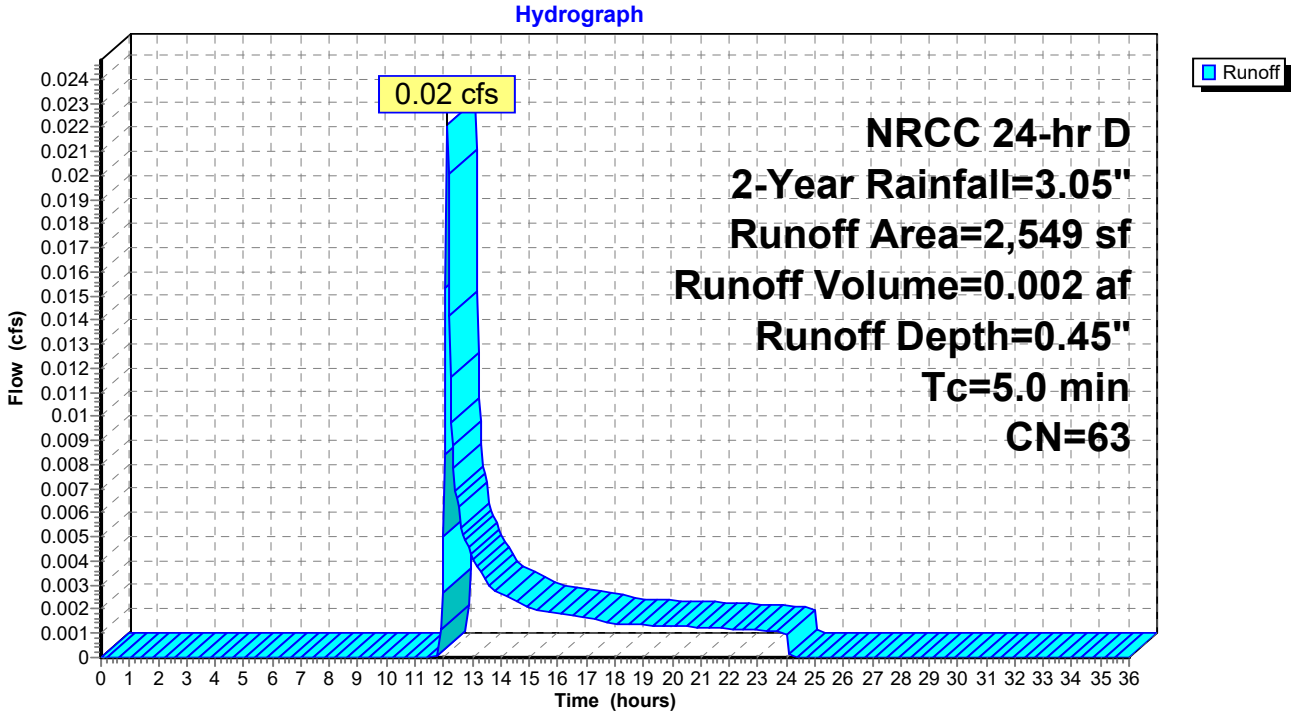
Runoff = 0.02 cfs @ 12.13 hrs, Volume= 0.002 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

	Area (sf)	CN	Description
	1,811	49	50-75% Grass cover, Fair, HSG A
*	738	98	Cement Concrete Sidewalk, HSG A
	2,549	63	Weighted Average
	1,811		71.05% Pervious Area
	738		28.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-4: PR-4



Summary for Subcatchment PR-5: PR-5

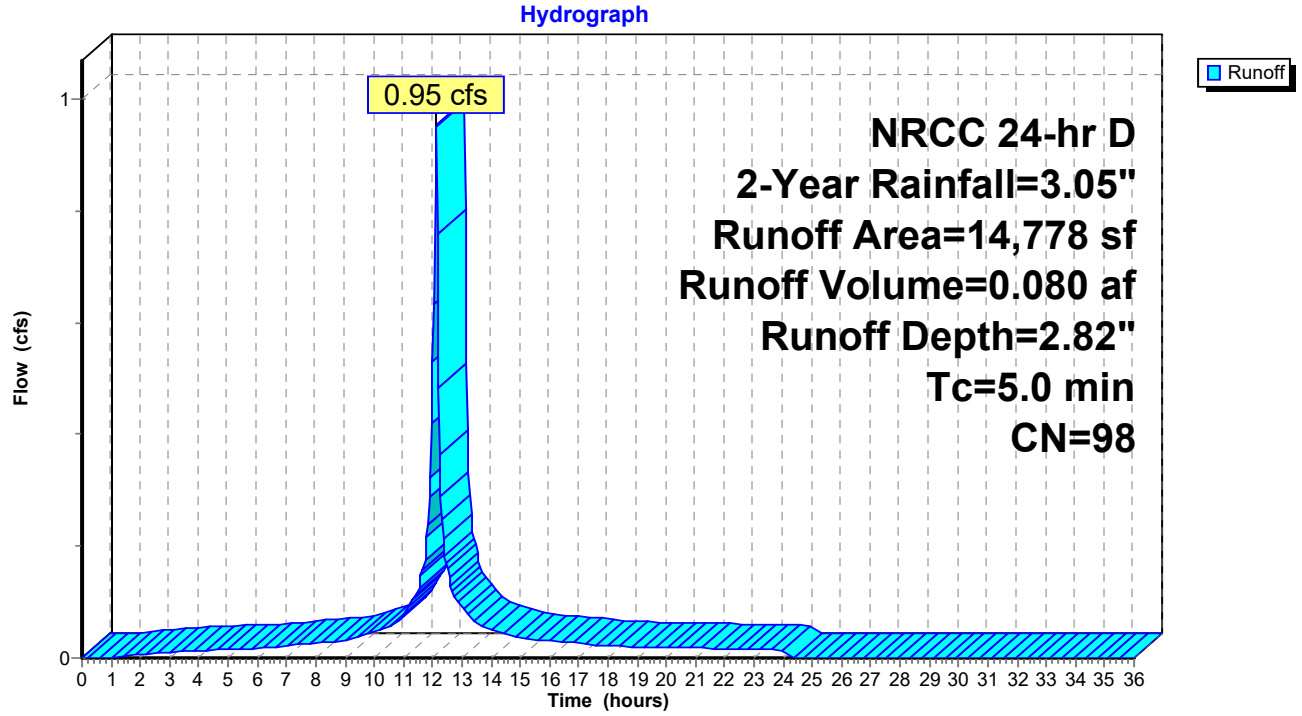
Runoff = 0.95 cfs @ 12.11 hrs, Volume= 0.080 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 2-Year Rainfall=3.05"

Area (sf)	CN	Description
14,778	98	Roofs, HSG A
14,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-5: PR-5



Summary for Pond P-1: CB-4

[57] Hint: Peaked at 67.88' (Flood elevation advised)

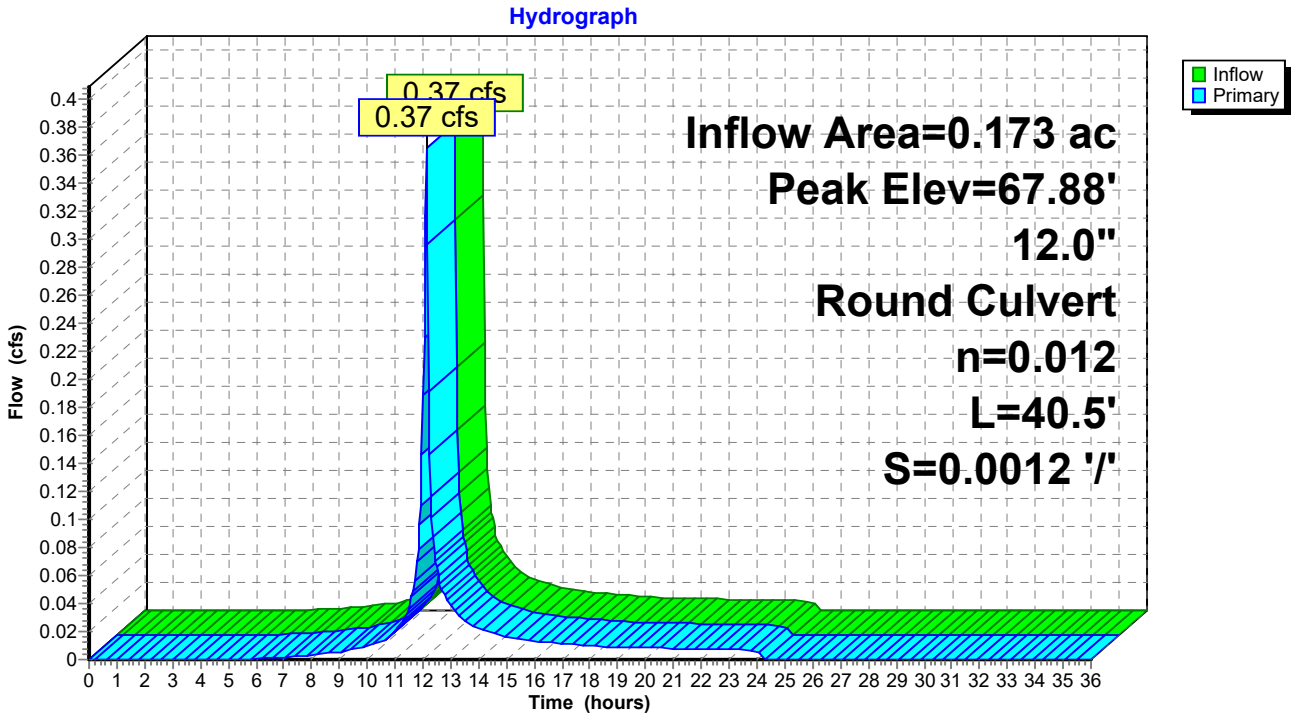
Inflow Area = 0.173 ac, 80.48% Impervious, Inflow Depth = 1.86" for 2-Year event
Inflow = 0.37 cfs @ 12.12 hrs, Volume= 0.027 af
Outflow = 0.37 cfs @ 12.12 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.12 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.88' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.45'	**12.0" Round Outlet Pipe** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.45' / 67.40' S= 0.0012 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.36 cfs @ 12.12 hrs HW=67.87' (Free Discharge)
1=Outlet Pipe (Barrel Controls 0.36 cfs @ 1.67 fps)

Pond P-1: CB-4



Summary for Pond P-2: CB-2

[57] Hint: Peaked at 67.53' (Flood elevation advised)
[79] Warning: Submerged Pond P-1 Primary device # 1 INLET by 0.08'

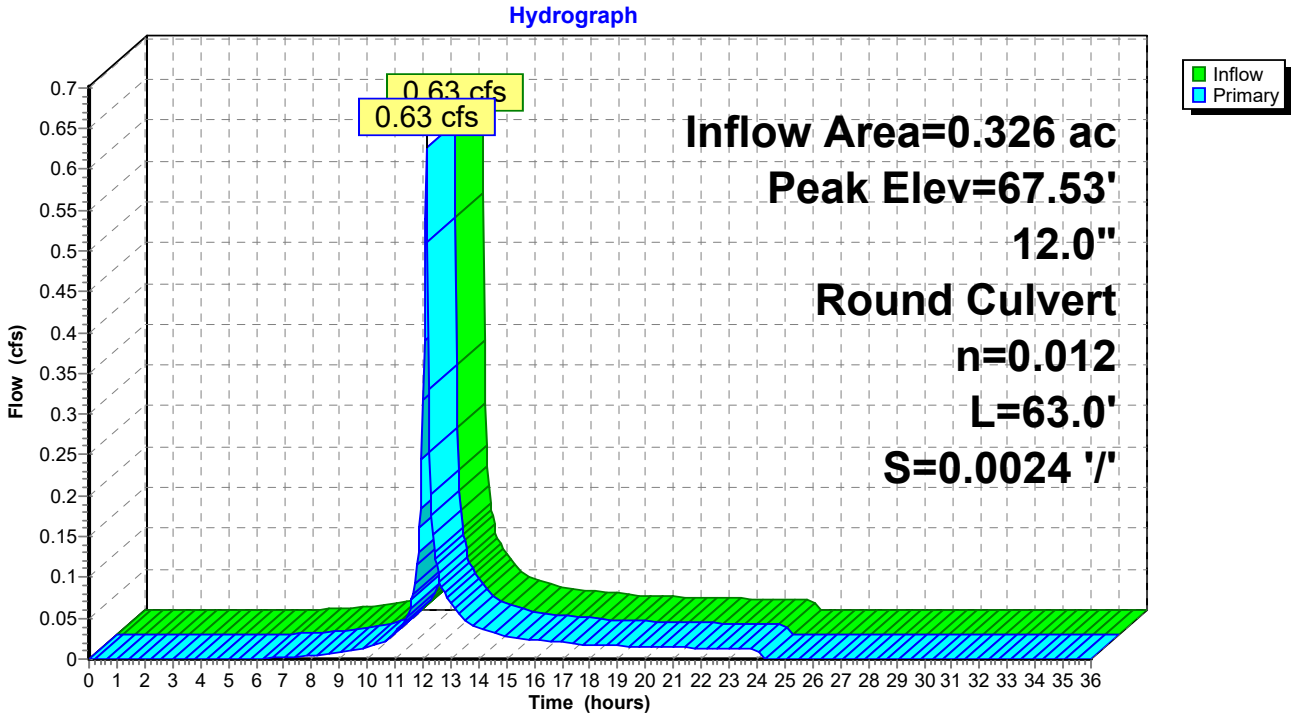
Inflow Area = 0.326 ac, 75.24% Impervious, Inflow Depth = 1.69" for 2-Year event
Inflow = 0.63 cfs @ 12.12 hrs, Volume= 0.046 af
Outflow = 0.63 cfs @ 12.12 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.12 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.53' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**12.0" Round Outlet Pipe** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.85' S= 0.0024 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.12 hrs HW=67.53' (Free Discharge)
1=Outlet Pipe (Barrel Controls 0.62 cfs @ 2.14 fps)

Pond P-2: CB-2



Summary for Pond P-3: CB-3

[57] Hint: Peaked at 67.36' (Flood elevation advised)
[79] Warning: Submerged Pond P-2 Primary device # 1 INLET by 0.36'

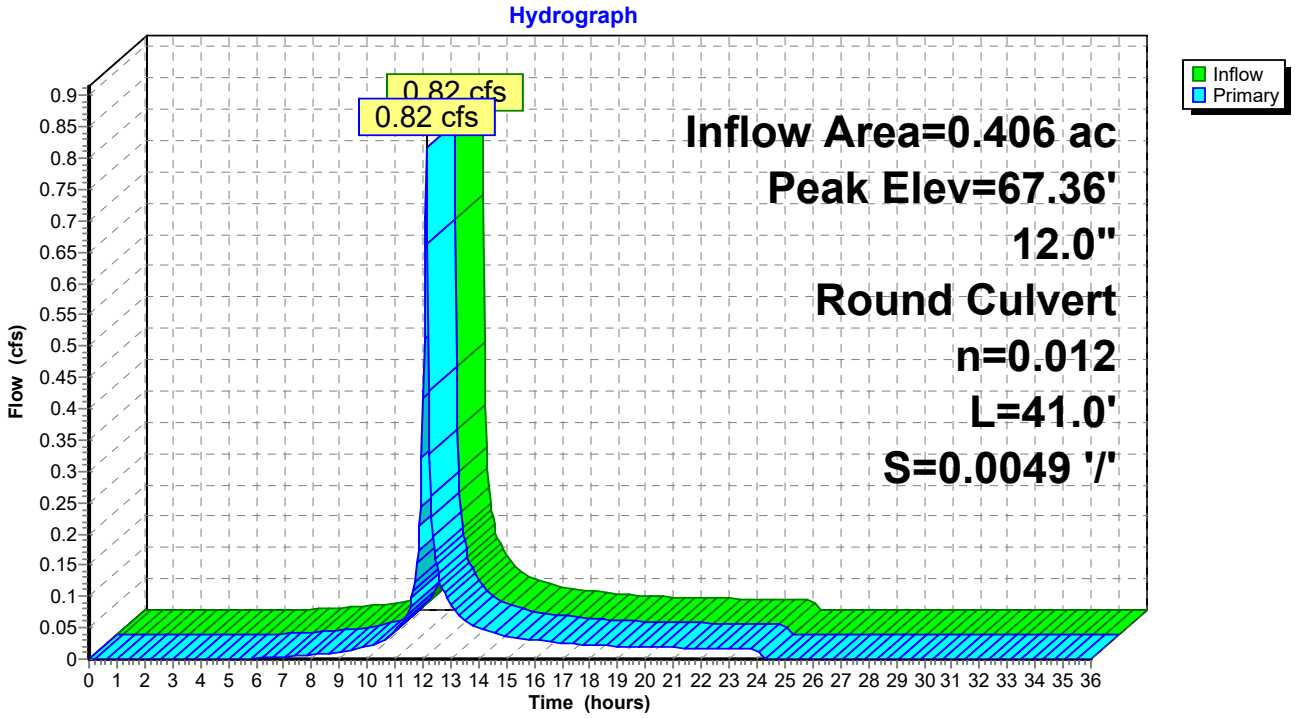
Inflow Area = 0.406 ac, 77.39% Impervious, Inflow Depth = 1.77" for 2-Year event
Inflow = 0.82 cfs @ 12.12 hrs, Volume= 0.060 af
Outflow = 0.82 cfs @ 12.12 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.12 hrs, Volume= 0.060 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.36' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.80'	**12.0" Round Outlet Pipe** L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.80' / 66.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.12 hrs HW=67.35' (Free Discharge)
1=Outlet Pipe (Barrel Controls 0.81 cfs @ 2.61 fps)

Pond P-3: CB-3



Summary for Pond P-4: DMH-1

[57] Hint: Peaked at 67.37' (Flood elevation advised)
[81] Warning: Exceeded Pond P-3 by 0.01' @ 12.12 hrs

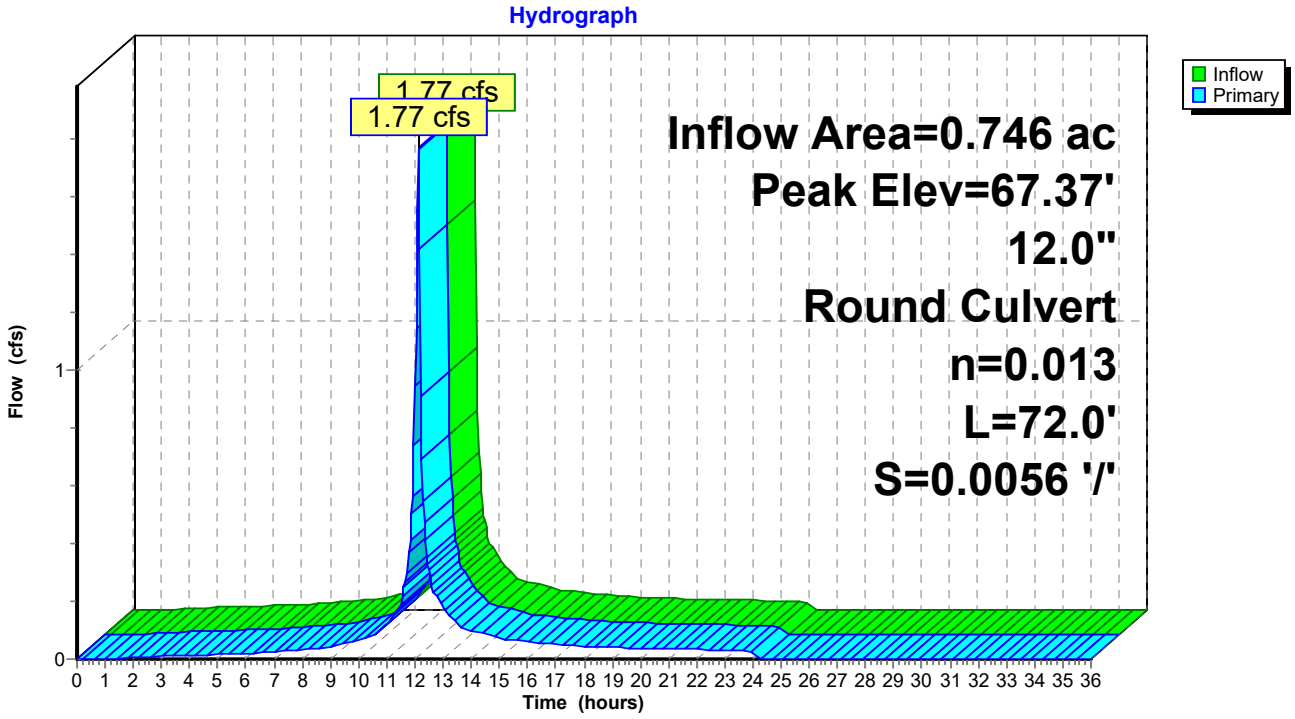
Inflow Area = 0.746 ac, 87.68% Impervious, Inflow Depth = 2.25" for 2-Year event
Inflow = 1.77 cfs @ 12.12 hrs, Volume= 0.140 af
Outflow = 1.77 cfs @ 12.12 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min
Primary = 1.77 cfs @ 12.12 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.37' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**12.0" Round Outlet Pipe** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.50' / 66.10' S= 0.0056 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf

Primary OutFlow Max=1.74 cfs @ 12.12 hrs HW=67.36' (Free Discharge)
└**1=Outlet Pipe** (Barrel Controls 1.74 cfs @ 3.24 fps)

Pond P-4: DMH-1

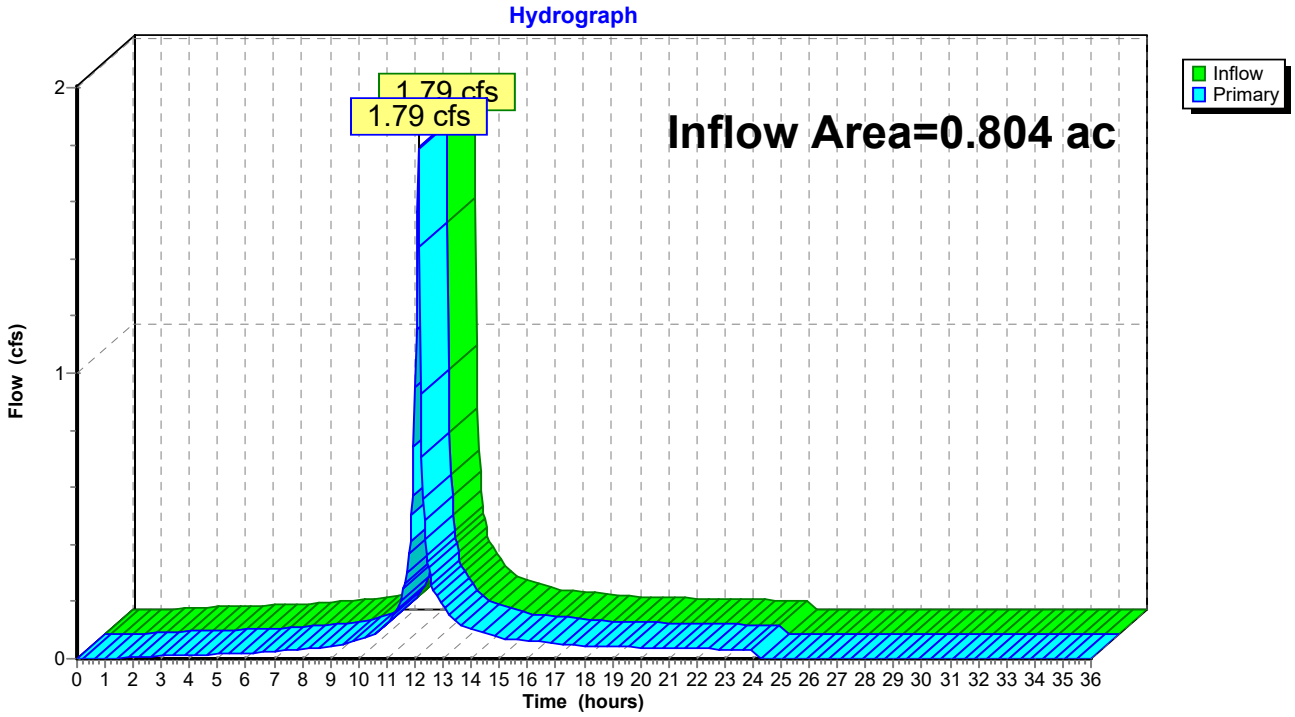


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 83.40% Impervious, Inflow Depth = 2.12" for 2-Year event
Inflow = 1.79 cfs @ 12.12 hrs, Volume= 0.142 af
Primary = 1.79 cfs @ 12.12 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: PR-1 Runoff Area=7,522 sf 80.48% Impervious Runoff Depth=3.26"
Tc=5.0 min CN=88 Runoff=0.62 cfs 0.047 af

Subcatchment PR-2: PR-2 Runoff Area=6,666 sf 69.32% Impervious Runoff Depth=2.79"
Tc=5.0 min CN=83 Runoff=0.48 cfs 0.036 af

Subcatchment PR-3: PR-3 Runoff Area=3,515 sf 86.06% Impervious Runoff Depth=3.57"
Tc=5.0 min CN=91 Runoff=0.31 cfs 0.024 af

Subcatchment PR-4: PR-4 Runoff Area=2,549 sf 28.95% Impervious Runoff Depth=1.24"
Tc=5.0 min CN=63 Runoff=0.08 cfs 0.006 af

Subcatchment PR-5: PR-5 Runoff Area=14,778 sf 100.00% Impervious Runoff Depth=4.33"
Tc=5.0 min CN=98 Runoff=1.44 cfs 0.123 af

Pond P-1: CB-4 Peak Elev=68.01' Inflow=0.62 cfs 0.047 af
12.0" Round Culvert n=0.012 L=40.5' S=0.0012 '/' Outflow=0.62 cfs 0.047 af

Pond P-2: CB-2 Peak Elev=67.74' Inflow=1.11 cfs 0.082 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0024 '/' Outflow=1.11 cfs 0.082 af

Pond P-3: CB-3 Peak Elev=67.58' Inflow=1.42 cfs 0.106 af
12.0" Round Culvert n=0.012 L=41.0' S=0.0049 '/' Outflow=1.42 cfs 0.106 af

Pond P-4: DMH-1 Peak Elev=67.96' Inflow=2.86 cfs 0.229 af
12.0" Round Culvert n=0.013 L=72.0' S=0.0056 '/' Outflow=2.86 cfs 0.229 af

Link DP-1: Broadway Drainage Inflow=2.94 cfs 0.235 af
Primary=2.94 cfs 0.235 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.235 af Average Runoff Depth = 3.51"
16.60% Pervious = 0.133 ac 83.40% Impervious = 0.671 ac

Summary for Subcatchment PR-1: PR-1

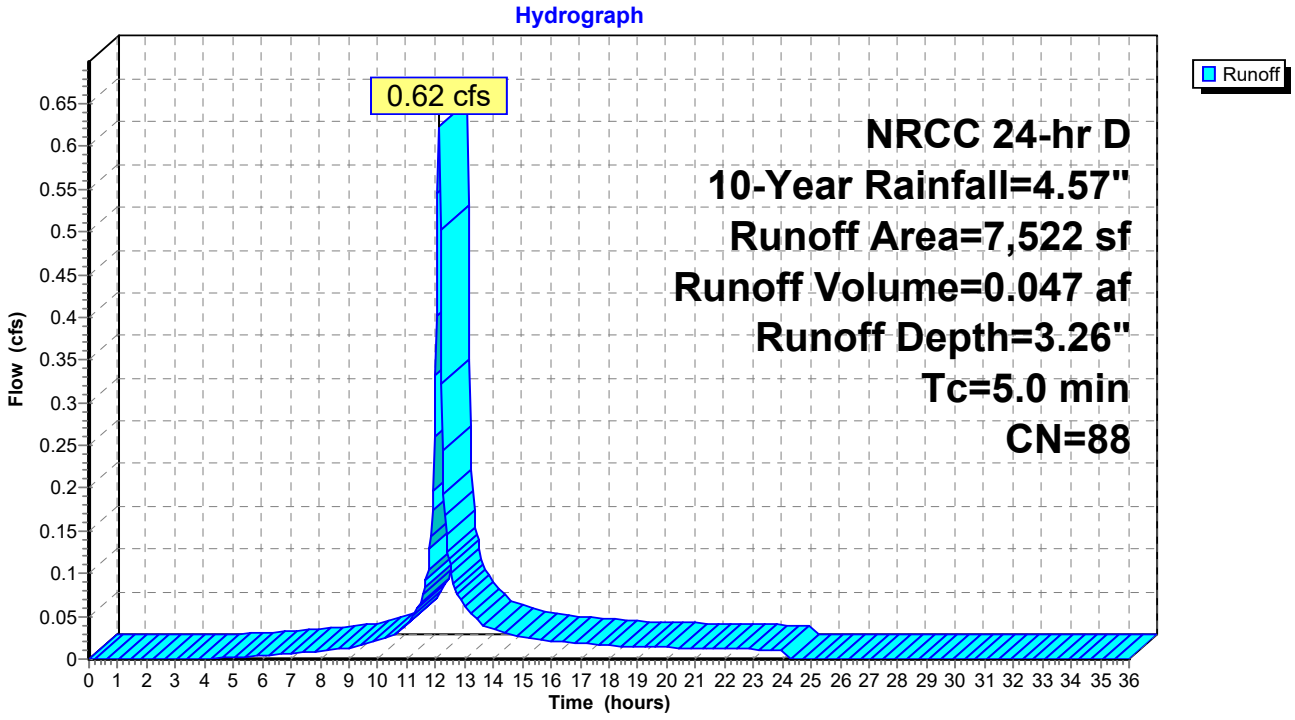
Runoff = 0.62 cfs @ 12.12 hrs, Volume= 0.047 af, Depth= 3.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

	Area (sf)	CN	Description
	5,997	98	Paved parking, HSG A
	1,468	49	50-75% Grass cover, Fair, HSG A
*	57	98	Cement Concrete Sidewalk, HSG A
	7,522	88	Weighted Average
	1,468		19.52% Pervious Area
	6,054		80.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

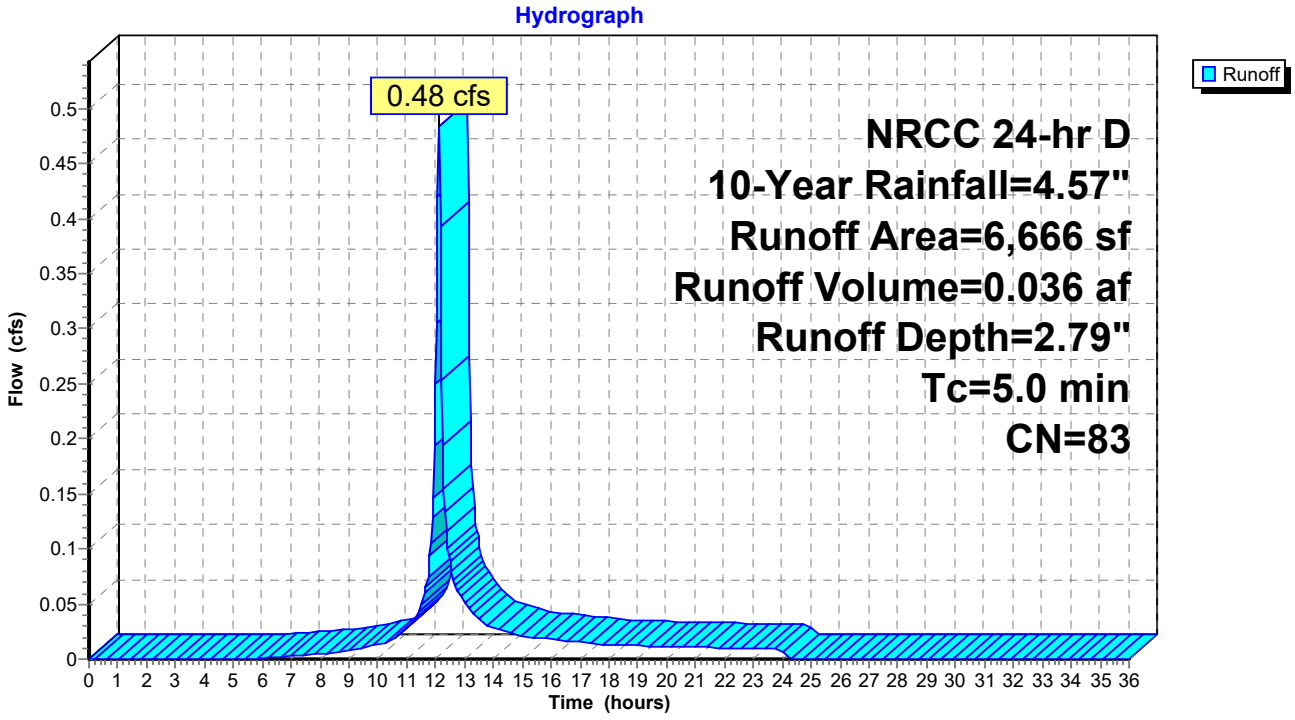
Runoff = 0.48 cfs @ 12.12 hrs, Volume= 0.036 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

	Area (sf)	CN	Description
	3,694	98	Paved parking, HSG A
	2,045	49	50-75% Grass cover, Fair, HSG A
*	927	98	Cement Concrete Sidewalk, HSG A
	6,666	83	Weighted Average
	2,045		30.68% Pervious Area
	4,621		69.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

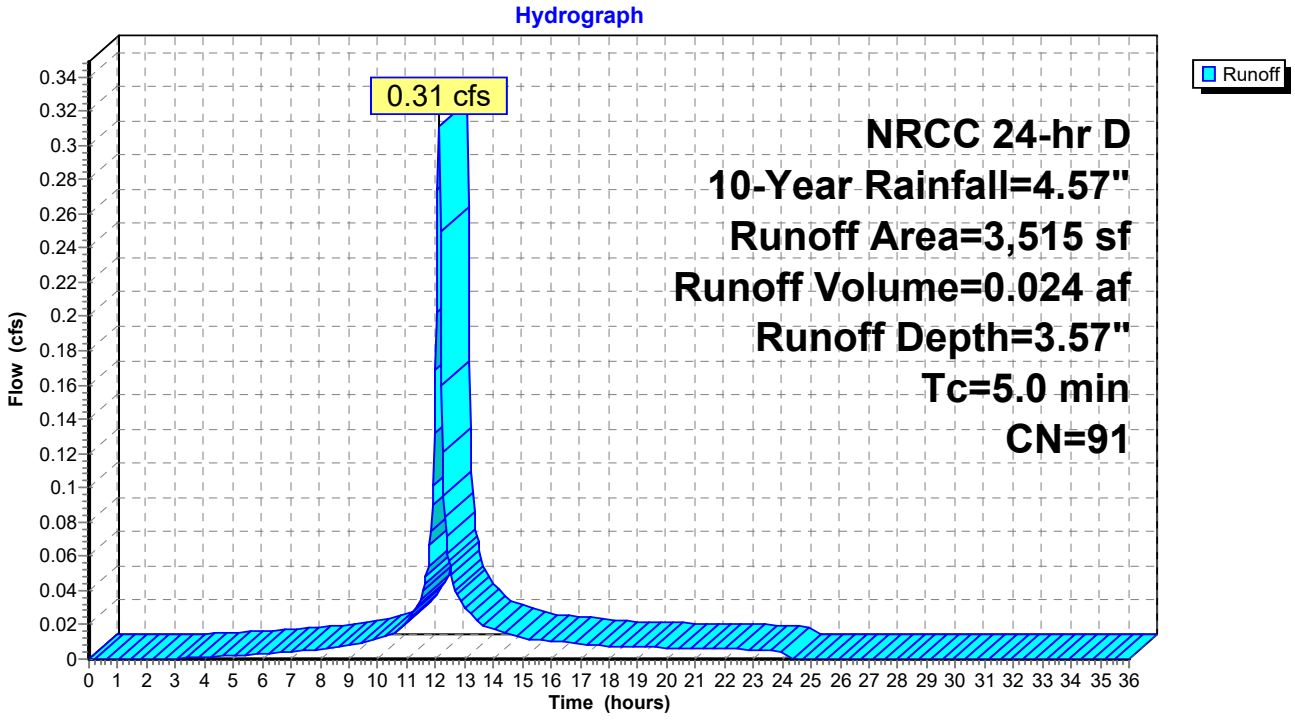
Runoff = 0.31 cfs @ 12.12 hrs, Volume= 0.024 af, Depth= 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

	Area (sf)	CN	Description
	2,249	98	Paved parking, HSG A
	490	49	50-75% Grass cover, Fair, HSG A
*	776	98	Cement Concrete Sidewalk, HSG A
	3,515	91	Weighted Average
	490		13.94% Pervious Area
	3,025		86.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-3: PR-3



Summary for Subcatchment PR-4: PR-4

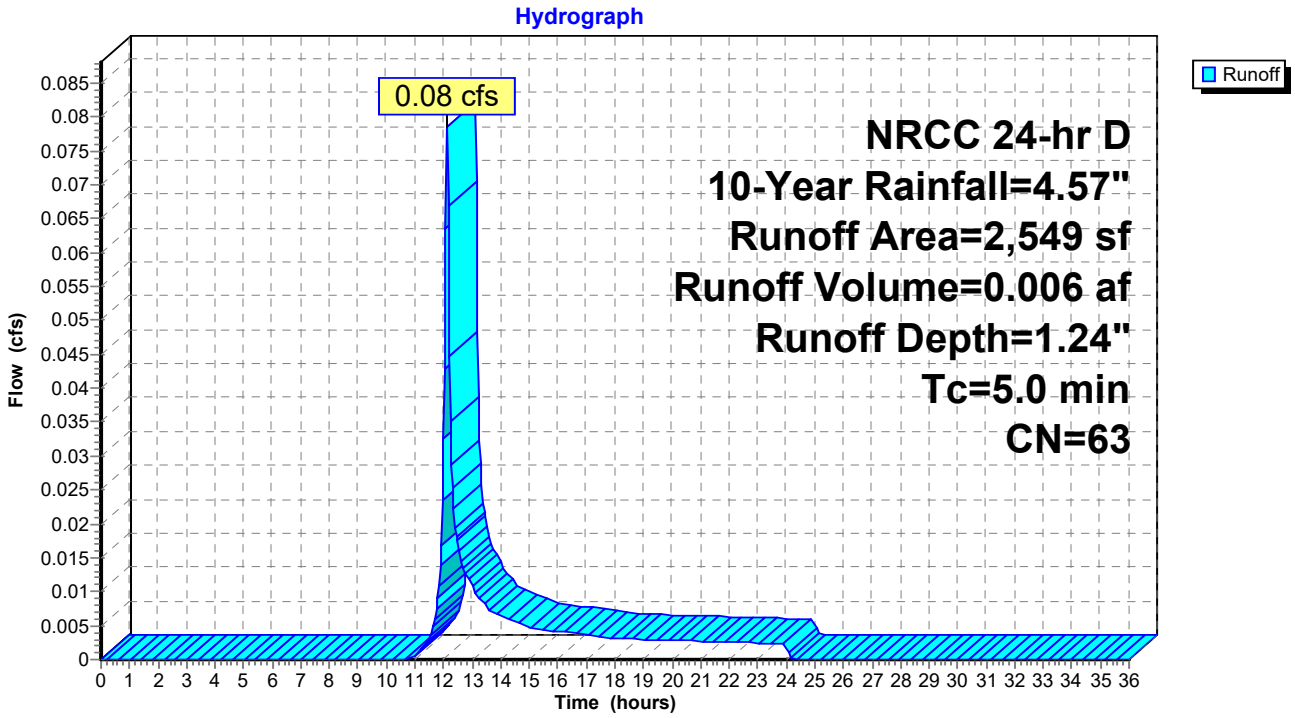
Runoff = 0.08 cfs @ 12.12 hrs, Volume= 0.006 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

	Area (sf)	CN	Description
	1,811	49	50-75% Grass cover, Fair, HSG A
*	738	98	Cement Concrete Sidewalk, HSG A
	2,549	63	Weighted Average
	1,811		71.05% Pervious Area
	738		28.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-4: PR-4



Summary for Subcatchment PR-5: PR-5

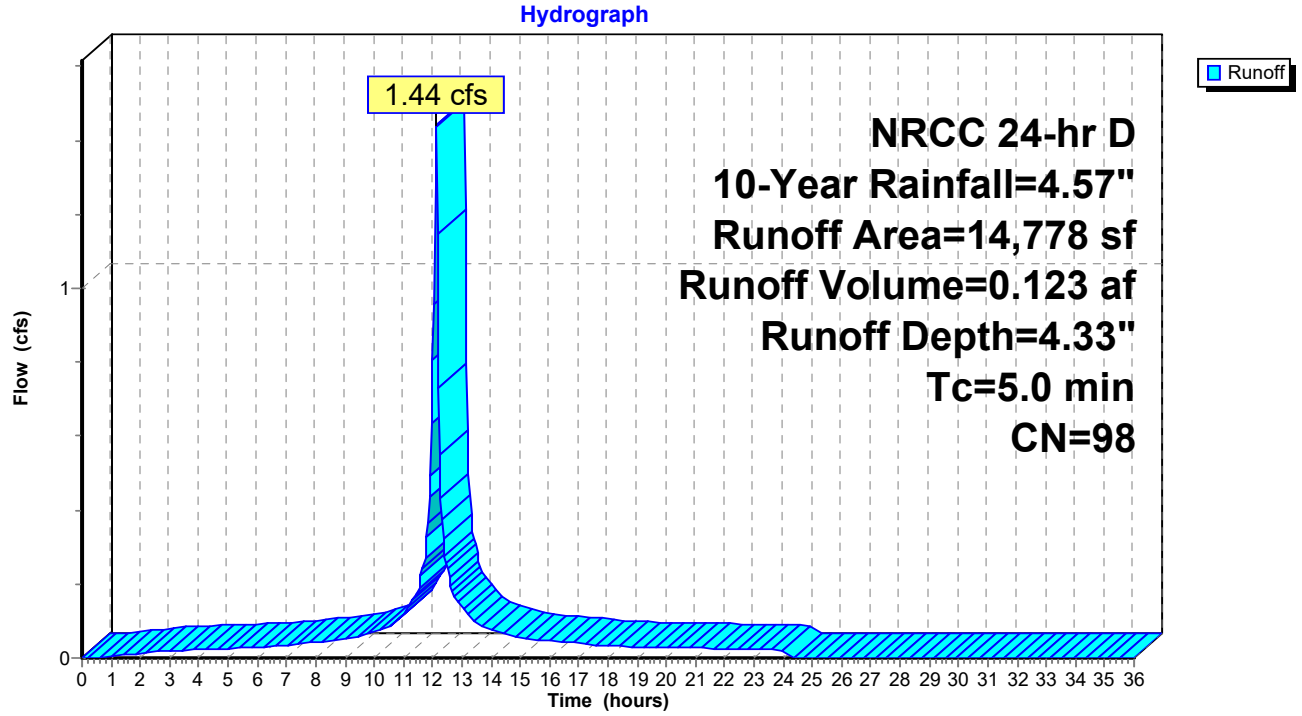
Runoff = 1.44 cfs @ 12.11 hrs, Volume= 0.123 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 10-Year Rainfall=4.57"

Area (sf)	CN	Description
14,778	98	Roofs, HSG A
14,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-5: PR-5



Summary for Pond P-1: CB-4

[57] Hint: Peaked at 68.01' (Flood elevation advised)

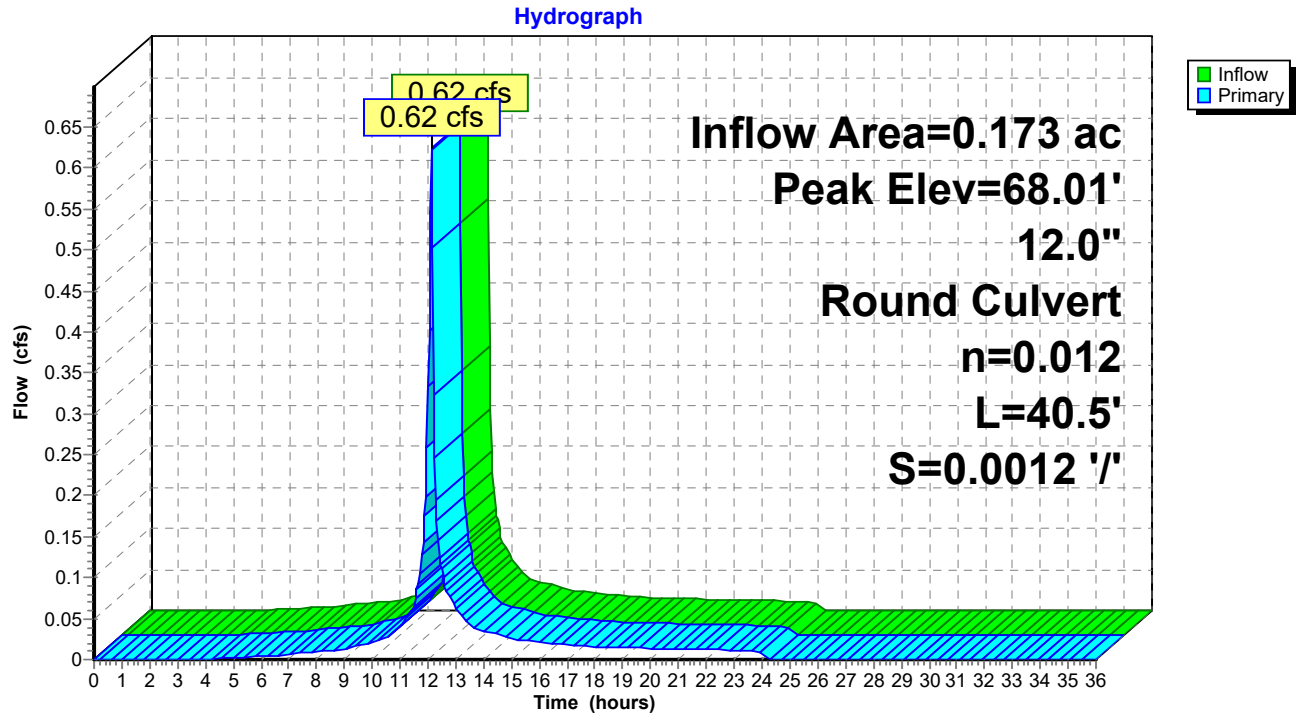
Inflow Area = 0.173 ac, 80.48% Impervious, Inflow Depth = 3.26" for 10-Year event
Inflow = 0.62 cfs @ 12.12 hrs, Volume= 0.047 af
Outflow = 0.62 cfs @ 12.12 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Primary = 0.62 cfs @ 12.12 hrs, Volume= 0.047 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 68.01' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.45'	**12.0" Round Outlet Pipe** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.45' / 67.40' S= 0.0012 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.61 cfs @ 12.12 hrs HW=68.01' (Free Discharge)
1=Outlet Pipe (Barrel Controls 0.61 cfs @ 1.96 fps)

Pond P-1: CB-4



Summary for Pond P-2: CB-2

[57] Hint: Peaked at 67.74' (Flood elevation advised)
[79] Warning: Submerged Pond P-1 Primary device # 1 INLET by 0.29'

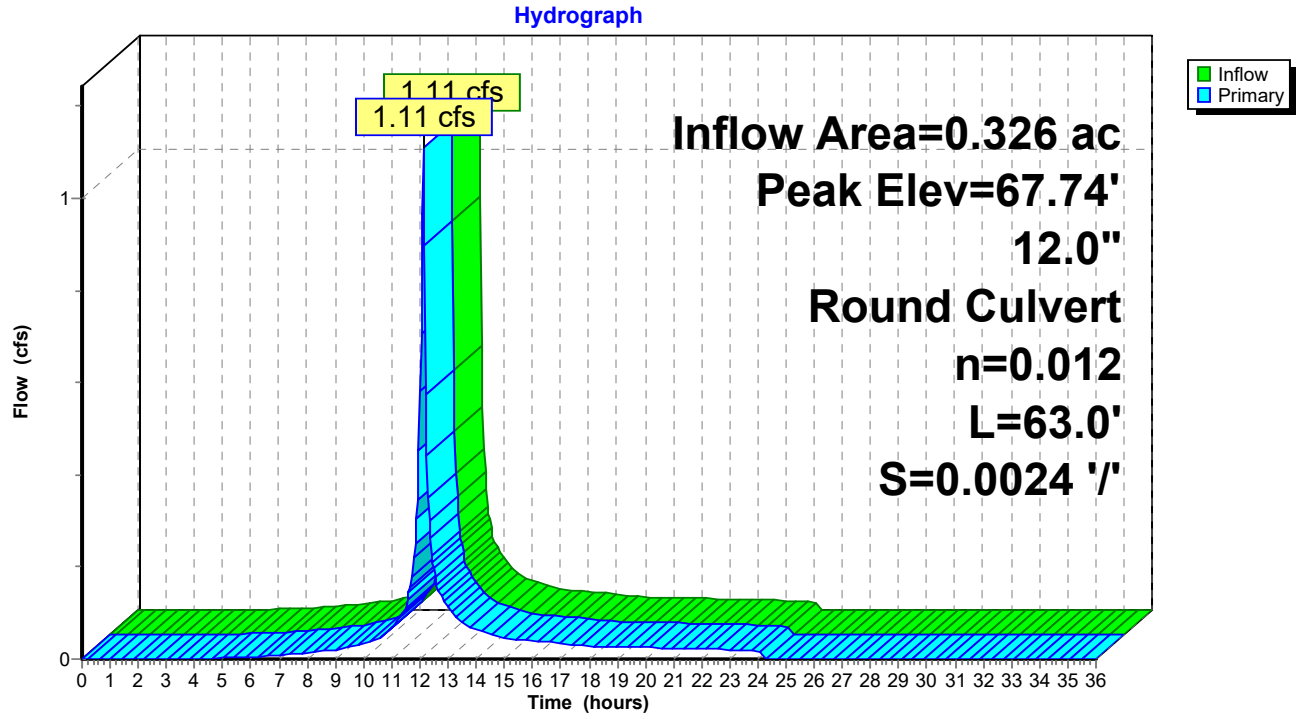
Inflow Area = 0.326 ac, 75.24% Impervious, Inflow Depth = 3.04" for 10-Year event
Inflow = 1.11 cfs @ 12.12 hrs, Volume= 0.082 af
Outflow = 1.11 cfs @ 12.12 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 12.12 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.74' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**12.0" Round Outlet Pipe** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.85' S= 0.0024 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.09 cfs @ 12.12 hrs HW=67.73' (Free Discharge)
1=Outlet Pipe (Barrel Controls 1.09 cfs @ 2.48 fps)

Pond P-2: CB-2



Summary for Pond P-3: CB-3

[57] Hint: Peaked at 67.58' (Flood elevation advised)
[79] Warning: Submerged Pond P-2 Primary device # 1 INLET by 0.58'

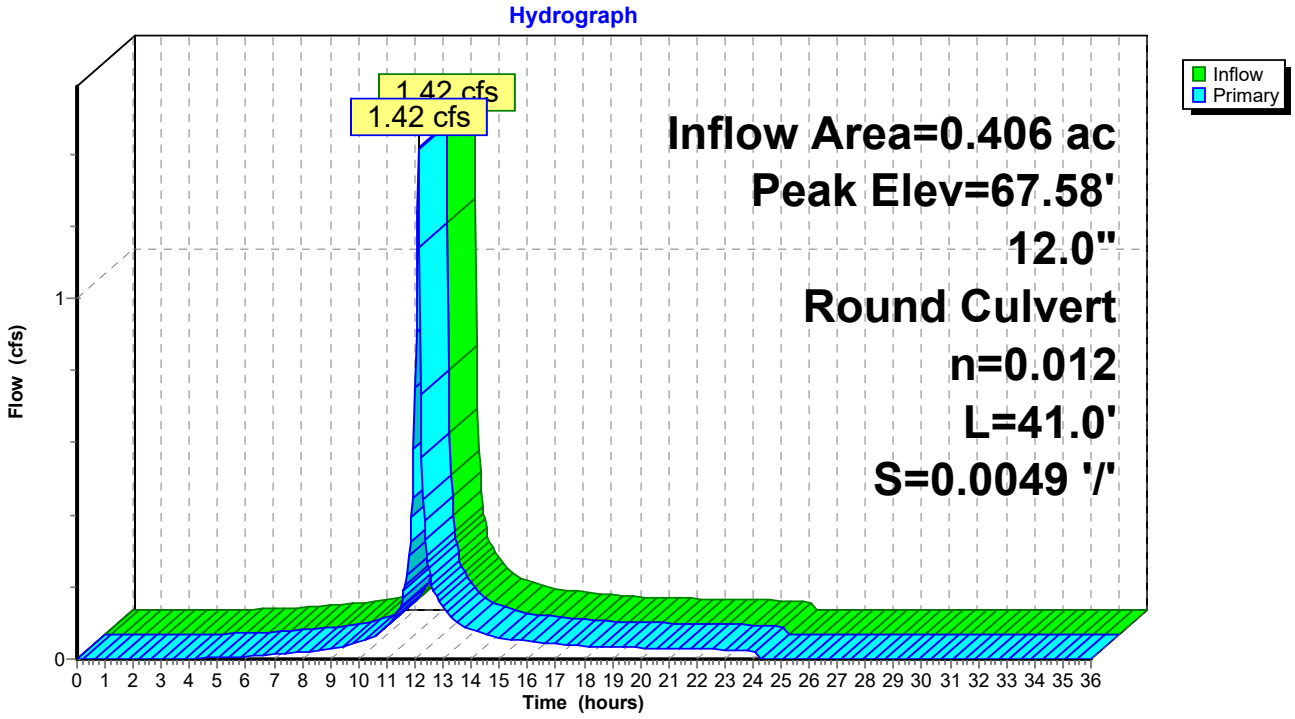
Inflow Area = 0.406 ac, 77.39% Impervious, Inflow Depth = 3.14" for 10-Year event
Inflow = 1.42 cfs @ 12.12 hrs, Volume= 0.106 af
Outflow = 1.42 cfs @ 12.12 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.12 hrs, Volume= 0.106 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.58' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.80'	**12.0" Round Outlet Pipe** L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.80' / 66.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.40 cfs @ 12.12 hrs HW=67.57' (Free Discharge)
1=Outlet Pipe (Barrel Controls 1.40 cfs @ 2.97 fps)

Pond P-3: CB-3



Summary for Pond P-4: DMH-1

[57] Hint: Peaked at 67.96' (Flood elevation advised)
[81] Warning: Exceeded Pond P-3 by 0.37' @ 12.12 hrs

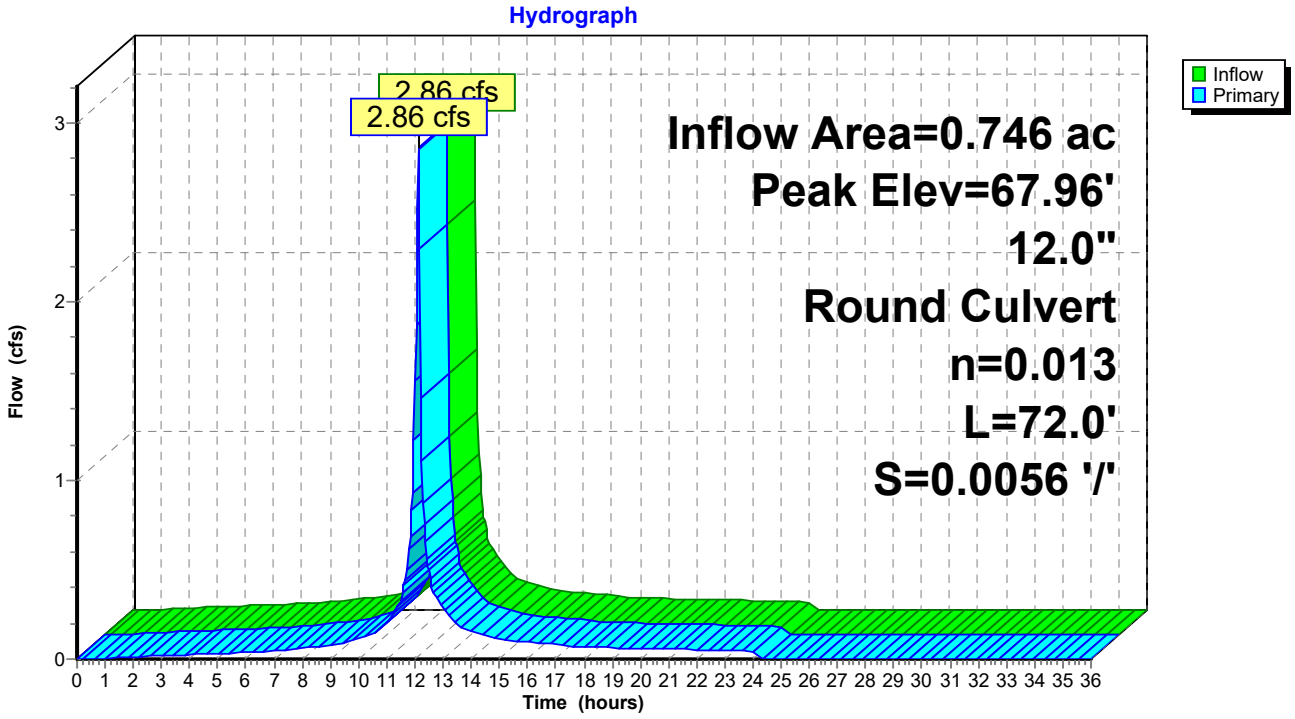
Inflow Area = 0.746 ac, 87.68% Impervious, Inflow Depth = 3.69" for 10-Year event
Inflow = 2.86 cfs @ 12.11 hrs, Volume= 0.229 af
Outflow = 2.86 cfs @ 12.11 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min
Primary = 2.86 cfs @ 12.11 hrs, Volume= 0.229 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.96' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**12.0" Round Outlet Pipe** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.50' / 66.10' S= 0.0056 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf

Primary OutFlow Max=2.80 cfs @ 12.11 hrs HW=67.92' (Free Discharge)
└**1=Outlet Pipe** (Barrel Controls 2.80 cfs @ 3.57 fps)

Pond P-4: DMH-1

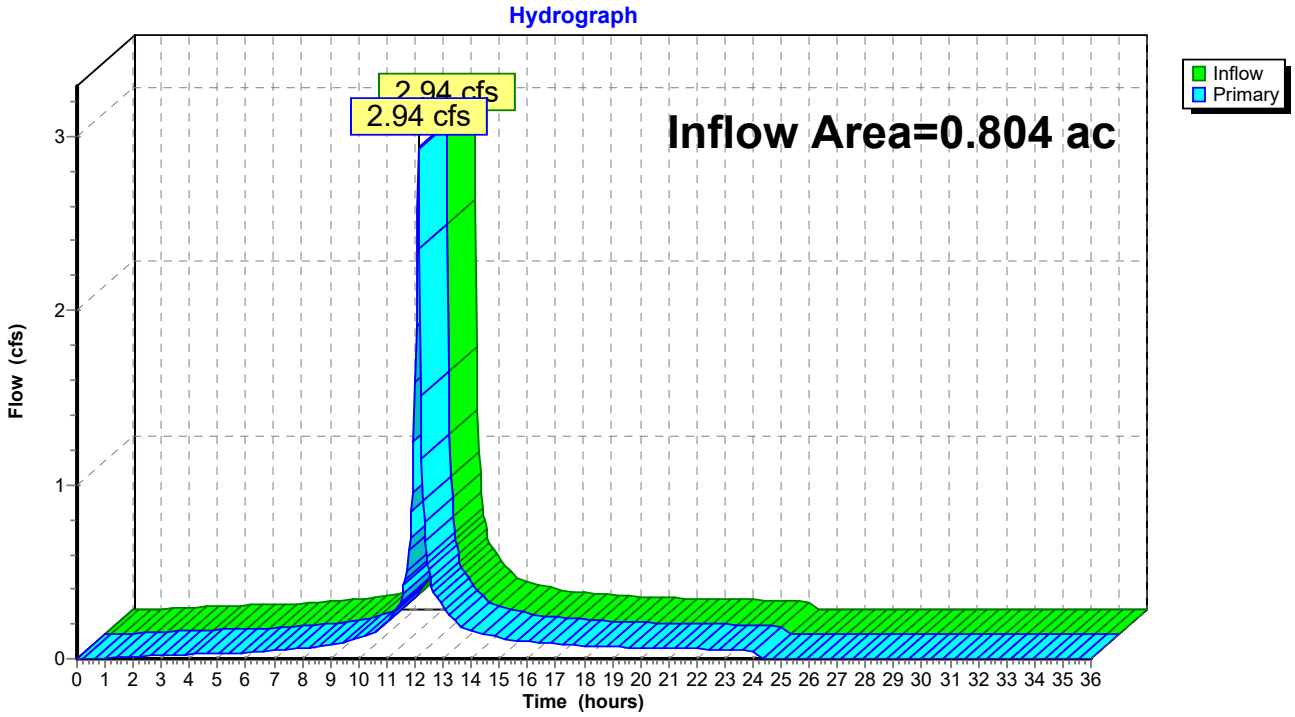


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 83.40% Impervious, Inflow Depth = 3.51" for 10-Year event
Inflow = 2.94 cfs @ 12.12 hrs, Volume= 0.235 af
Primary = 2.94 cfs @ 12.12 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: PR-1 Runoff Area=7,522 sf 80.48% Impervious Runoff Depth=4.40"
Tc=5.0 min CN=88 Runoff=0.83 cfs 0.063 af

Subcatchment PR-2: PR-2 Runoff Area=6,666 sf 69.32% Impervious Runoff Depth=3.88"
Tc=5.0 min CN=83 Runoff=0.67 cfs 0.049 af

Subcatchment PR-3: PR-3 Runoff Area=3,515 sf 86.06% Impervious Runoff Depth=4.73"
Tc=5.0 min CN=91 Runoff=0.41 cfs 0.032 af

Subcatchment PR-4: PR-4 Runoff Area=2,549 sf 28.95% Impervious Runoff Depth=2.02"
Tc=5.0 min CN=63 Runoff=0.13 cfs 0.010 af

Subcatchment PR-5: PR-5 Runoff Area=14,778 sf 100.00% Impervious Runoff Depth=5.53"
Tc=5.0 min CN=98 Runoff=1.82 cfs 0.156 af

Pond P-1: CB-4 Peak Elev=68.11' Inflow=0.83 cfs 0.063 af
12.0" Round Culvert n=0.012 L=40.5' S=0.0012 '/' Outflow=0.83 cfs 0.063 af

Pond P-2: CB-2 Peak Elev=67.88' Inflow=1.49 cfs 0.113 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0024 '/' Outflow=1.49 cfs 0.113 af

Pond P-3: CB-3 Peak Elev=67.75' Inflow=1.90 cfs 0.145 af
12.0" Round Culvert n=0.012 L=41.0' S=0.0049 '/' Outflow=1.90 cfs 0.145 af

Pond P-4: DMH-1 Peak Elev=68.55' Inflow=3.72 cfs 0.301 af
12.0" Round Culvert n=0.013 L=72.0' S=0.0056 '/' Outflow=3.72 cfs 0.301 af

Link DP-1: Broadway Drainage Inflow=3.86 cfs 0.311 af
Primary=3.86 cfs 0.311 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.311 af Average Runoff Depth = 4.64"
16.60% Pervious = 0.133 ac 83.40% Impervious = 0.671 ac

Summary for Subcatchment PR-1: PR-1

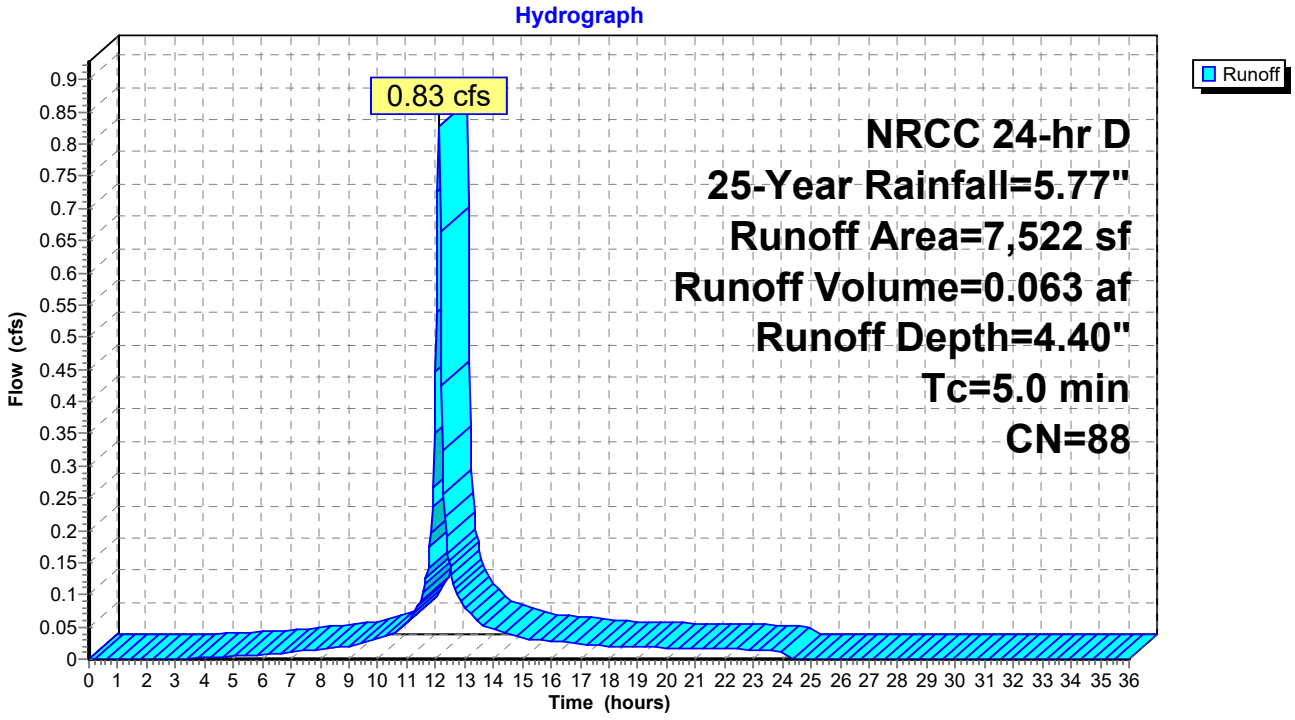
Runoff = 0.83 cfs @ 12.12 hrs, Volume= 0.063 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
	5,997	98	Paved parking, HSG A
	1,468	49	50-75% Grass cover, Fair, HSG A
*	57	98	Cement Concrete Sidewalk, HSG A
	7,522	88	Weighted Average
	1,468		19.52% Pervious Area
	6,054		80.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

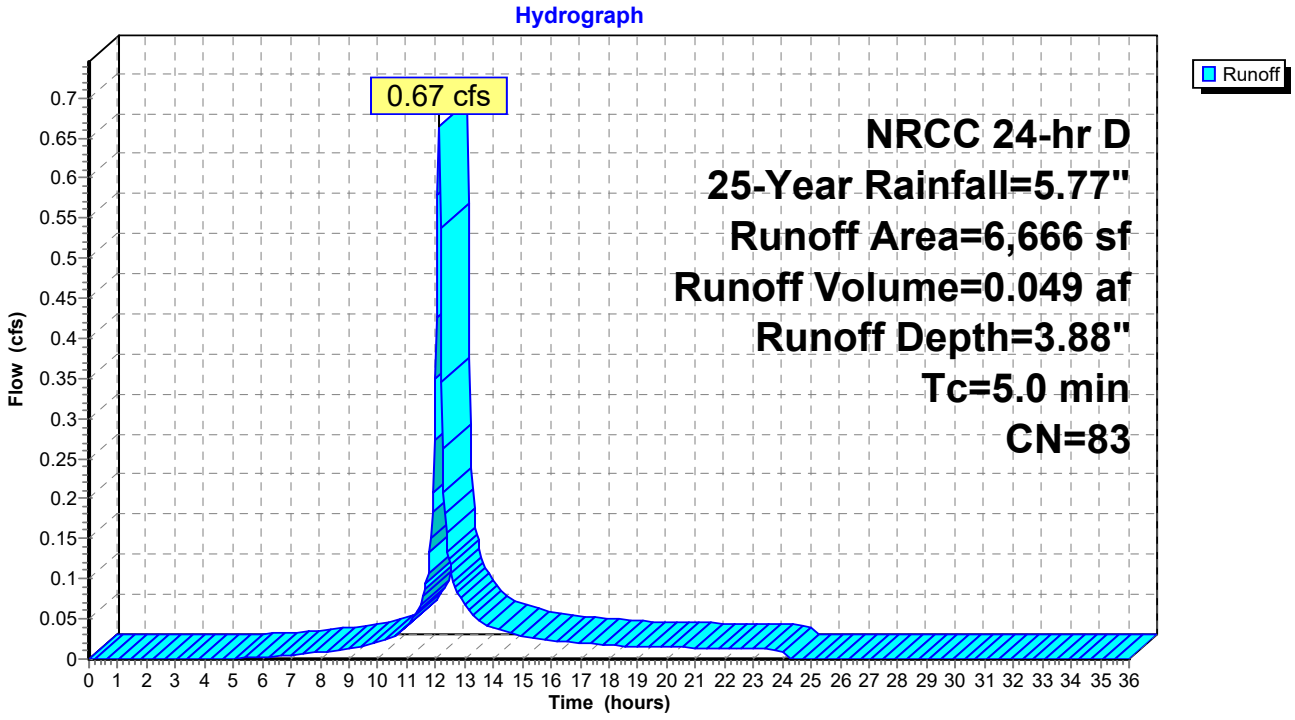
Runoff = 0.67 cfs @ 12.12 hrs, Volume= 0.049 af, Depth= 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
	3,694	98	Paved parking, HSG A
	2,045	49	50-75% Grass cover, Fair, HSG A
*	927	98	Cement Concrete Sidewalk, HSG A
	6,666	83	Weighted Average
	2,045		30.68% Pervious Area
	4,621		69.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

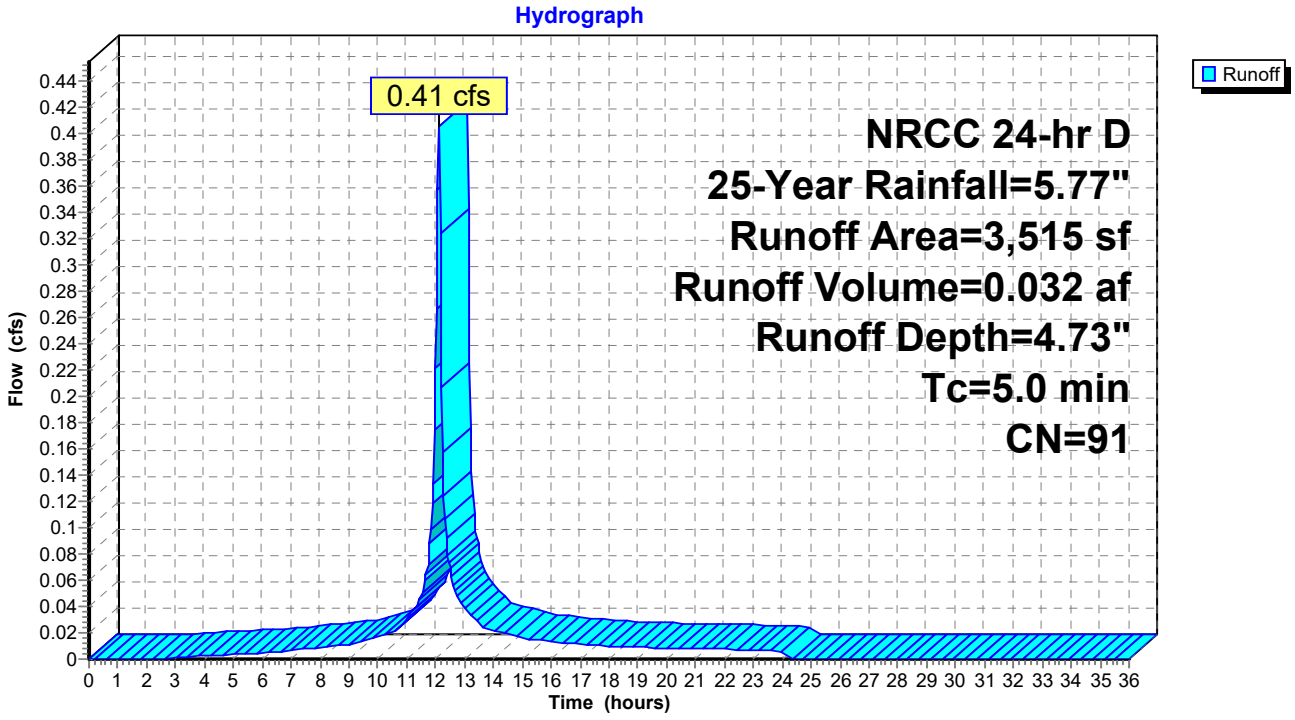
Runoff = 0.41 cfs @ 12.11 hrs, Volume= 0.032 af, Depth= 4.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
	2,249	98	Paved parking, HSG A
	490	49	50-75% Grass cover, Fair, HSG A
*	776	98	Cement Concrete Sidewalk, HSG A
	3,515	91	Weighted Average
	490		13.94% Pervious Area
	3,025		86.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-3: PR-3



Summary for Subcatchment PR-4: PR-4

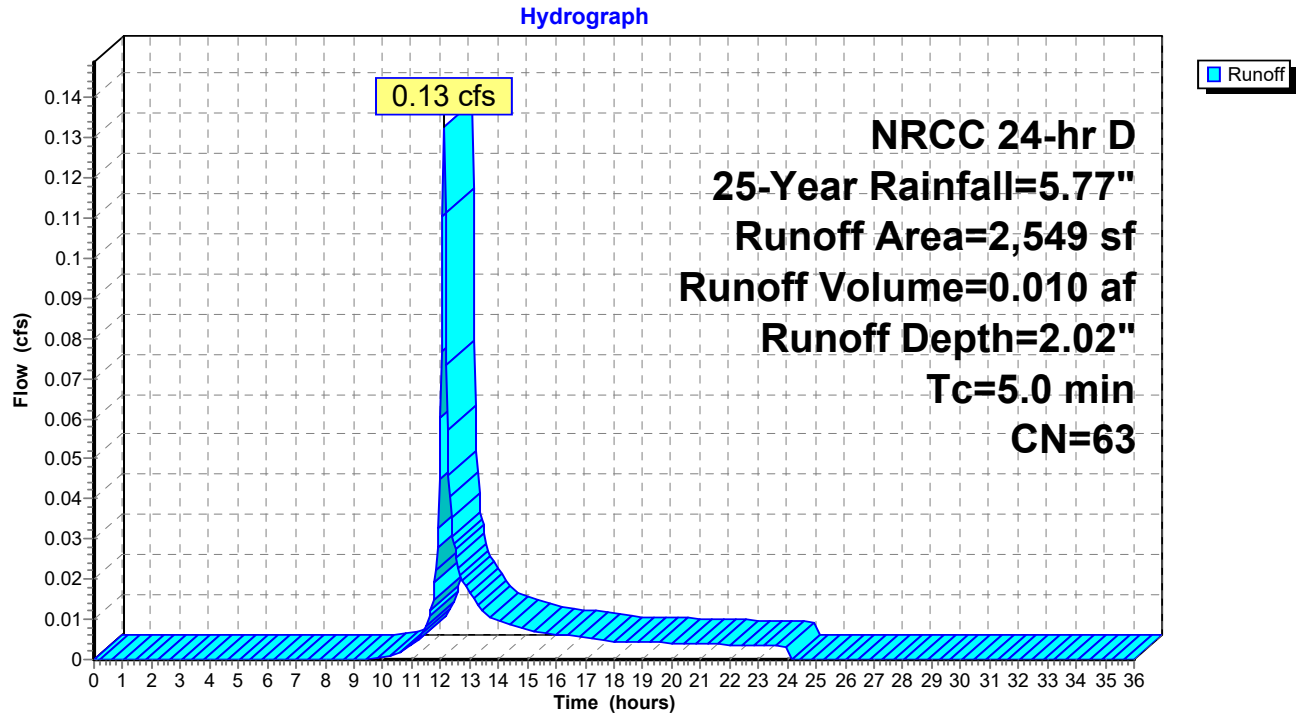
Runoff = 0.13 cfs @ 12.12 hrs, Volume= 0.010 af, Depth= 2.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
	1,811	49	50-75% Grass cover, Fair, HSG A
*	738	98	Cement Concrete Sidewalk, HSG A
	2,549	63	Weighted Average
	1,811		71.05% Pervious Area
	738		28.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-4: PR-4



Summary for Subcatchment PR-5: PR-5

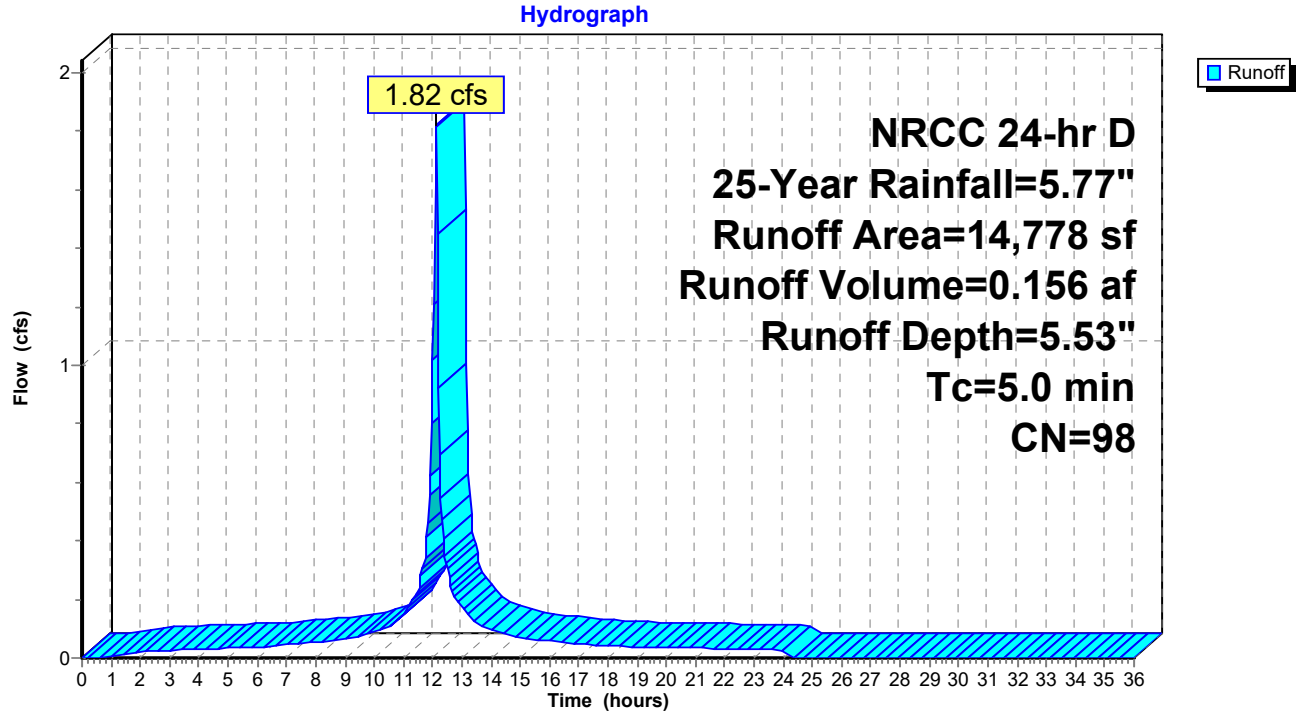
Runoff = 1.82 cfs @ 12.11 hrs, Volume= 0.156 af, Depth= 5.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 25-Year Rainfall=5.77"

Area (sf)	CN	Description
14,778	98	Roofs, HSG A
14,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-5: PR-5



Summary for Pond P-1: CB-4

[57] Hint: Peaked at 68.11' (Flood elevation advised)

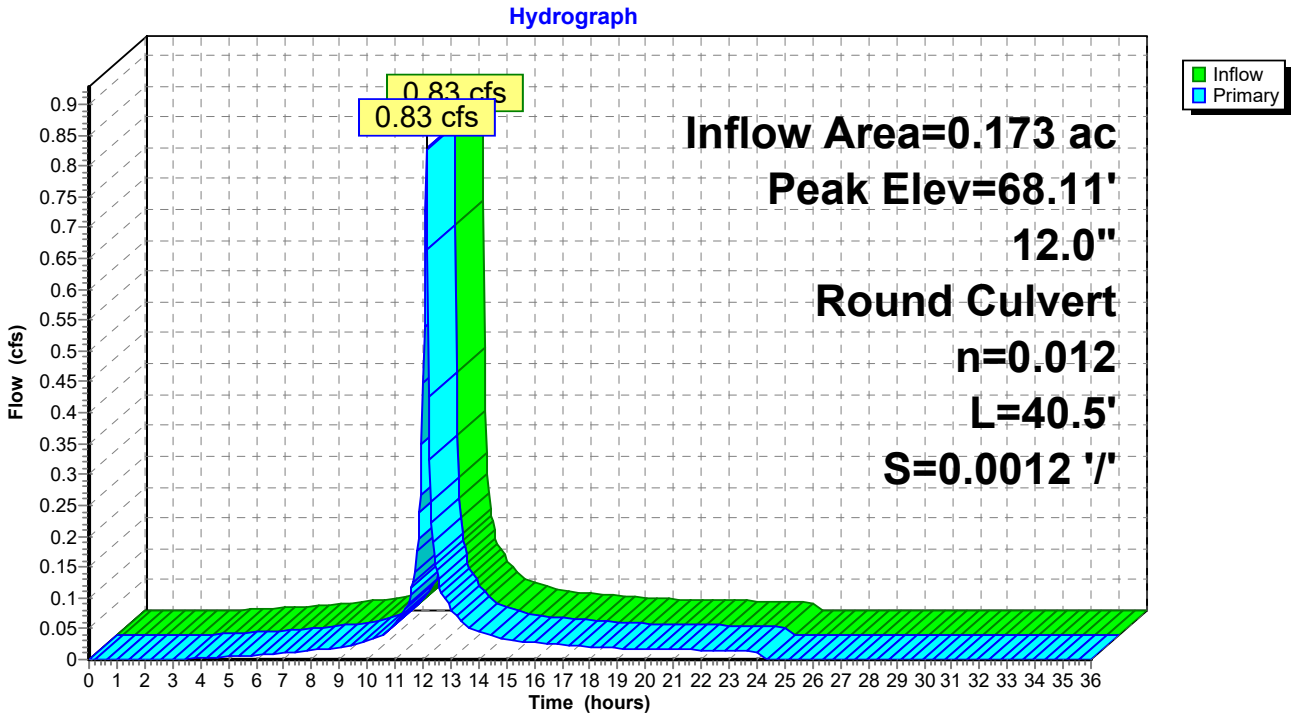
Inflow Area = 0.173 ac, 80.48% Impervious, Inflow Depth = 4.40" for 25-Year event
Inflow = 0.83 cfs @ 12.12 hrs, Volume= 0.063 af
Outflow = 0.83 cfs @ 12.12 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.12 hrs, Volume= 0.063 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 68.11' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.45'	**12.0" Round Outlet Pipe** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.45' / 67.40' S= 0.0012 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.12 hrs HW=68.10' (Free Discharge)
1=Outlet Pipe (Barrel Controls 0.81 cfs @ 2.14 fps)

Pond P-1: CB-4



Summary for Pond P-2: CB-2

[57] Hint: Peaked at 67.88' (Flood elevation advised)
[79] Warning: Submerged Pond P-1 Primary device # 1 INLET by 0.43'

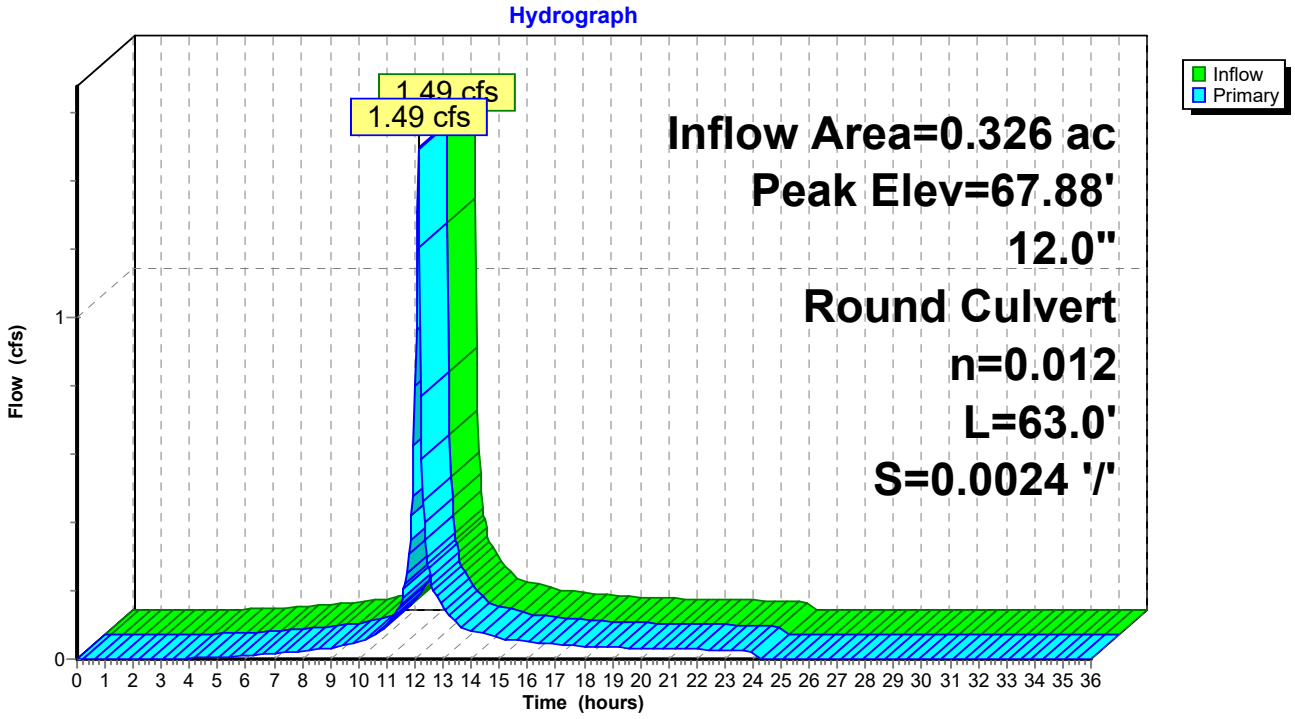
Inflow Area = 0.326 ac, 75.24% Impervious, Inflow Depth = 4.16" for 25-Year event
Inflow = 1.49 cfs @ 12.12 hrs, Volume= 0.113 af
Outflow = 1.49 cfs @ 12.12 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
Primary = 1.49 cfs @ 12.12 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.88' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**12.0" Round Outlet Pipe** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.85' S= 0.0024 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.47 cfs @ 12.12 hrs HW=67.88' (Free Discharge)
1=Outlet Pipe (Barrel Controls 1.47 cfs @ 2.69 fps)

Pond P-2: CB-2



Summary for Pond P-3: CB-3

[57] Hint: Peaked at 67.75' (Flood elevation advised)
[79] Warning: Submerged Pond P-2 Primary device # 1 INLET by 0.75'

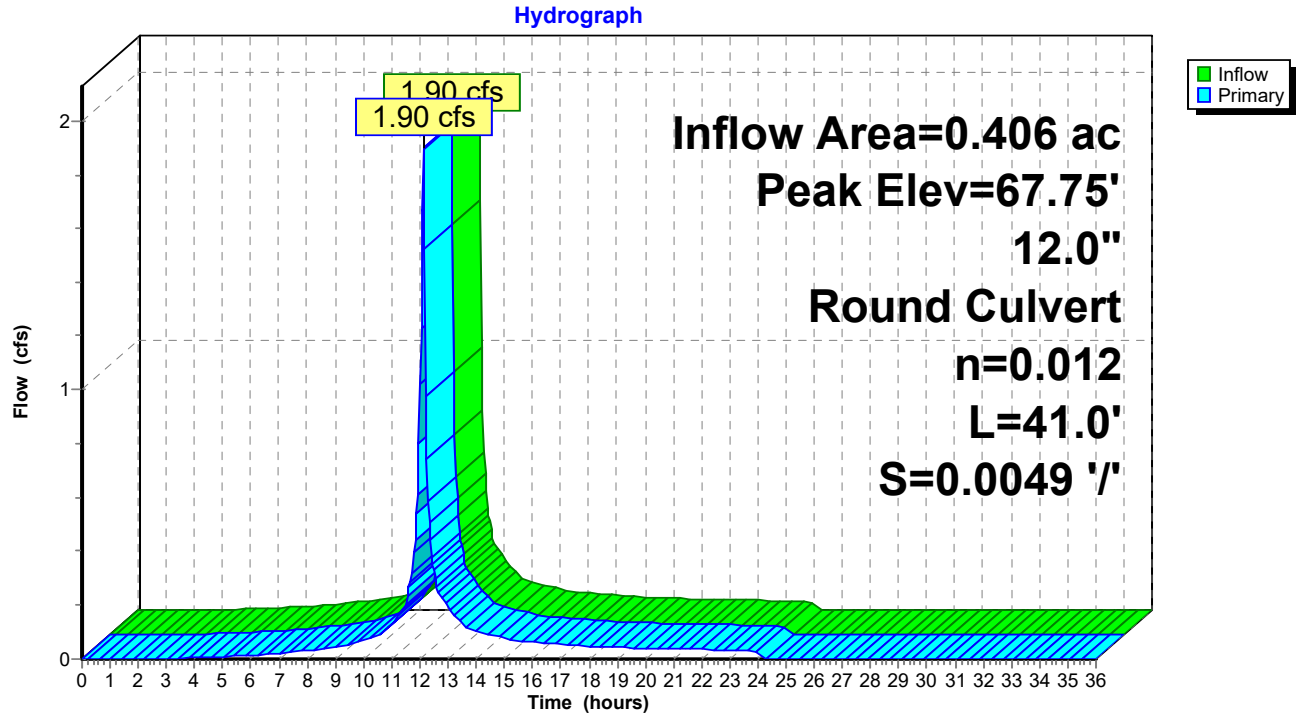
Inflow Area = 0.406 ac, 77.39% Impervious, Inflow Depth = 4.27" for 25-Year event
Inflow = 1.90 cfs @ 12.12 hrs, Volume= 0.145 af
Outflow = 1.90 cfs @ 12.12 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min
Primary = 1.90 cfs @ 12.12 hrs, Volume= 0.145 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.75' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.80'	**12.0" Round Outlet Pipe** L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.80' / 66.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.87 cfs @ 12.12 hrs HW=67.74' (Free Discharge)
└**1=Outlet Pipe** (Barrel Controls 1.87 cfs @ 3.17 fps)

Pond P-3: CB-3



Summary for Pond P-4: DMH-1

[57] Hint: Peaked at 68.55' (Flood elevation advised)
[81] Warning: Exceeded Pond P-3 by 0.80' @ 12.12 hrs

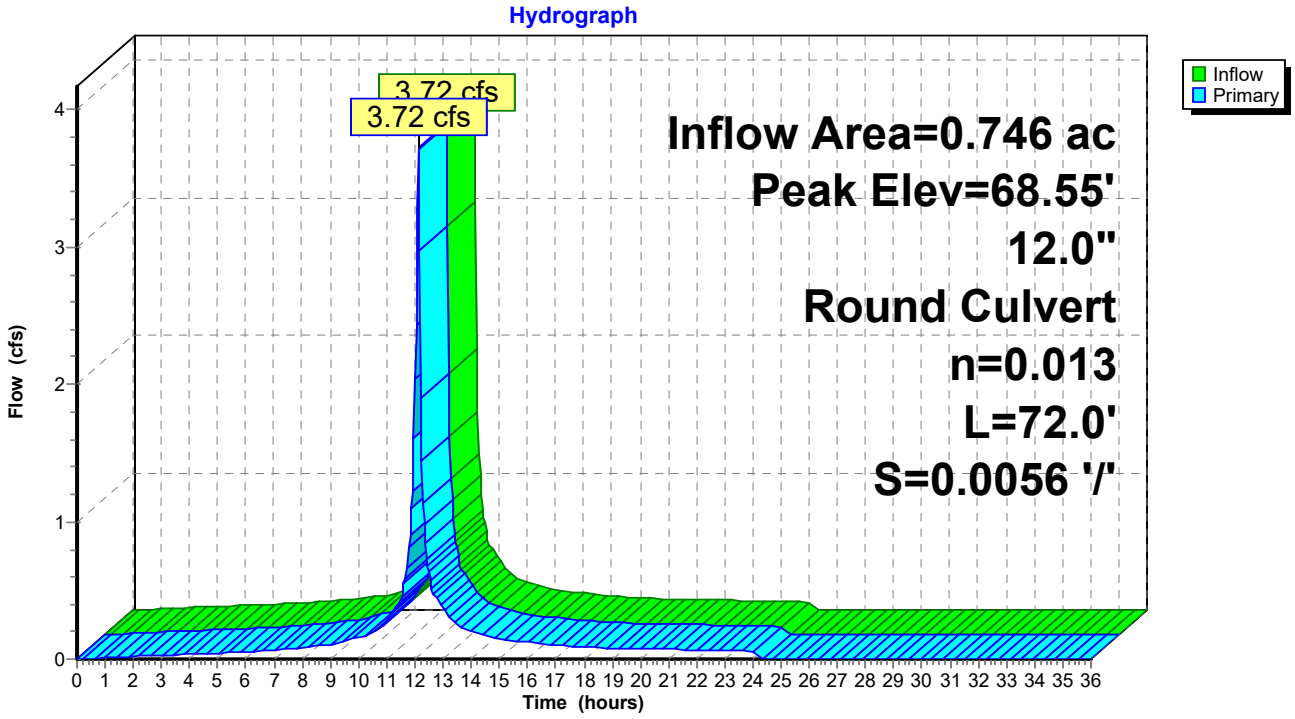
Inflow Area = 0.746 ac, 87.68% Impervious, Inflow Depth = 4.85" for 25-Year event
Inflow = 3.72 cfs @ 12.11 hrs, Volume= 0.301 af
Outflow = 3.72 cfs @ 12.11 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min
Primary = 3.72 cfs @ 12.11 hrs, Volume= 0.301 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 68.55' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**12.0" Round Outlet Pipe** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.50' / 66.10' S= 0.0056 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf

Primary OutFlow Max=3.66 cfs @ 12.11 hrs HW=68.51' (Free Discharge)
└**1=Outlet Pipe** (Inlet Controls 3.66 cfs @ 4.66 fps)

Pond P-4: DMH-1

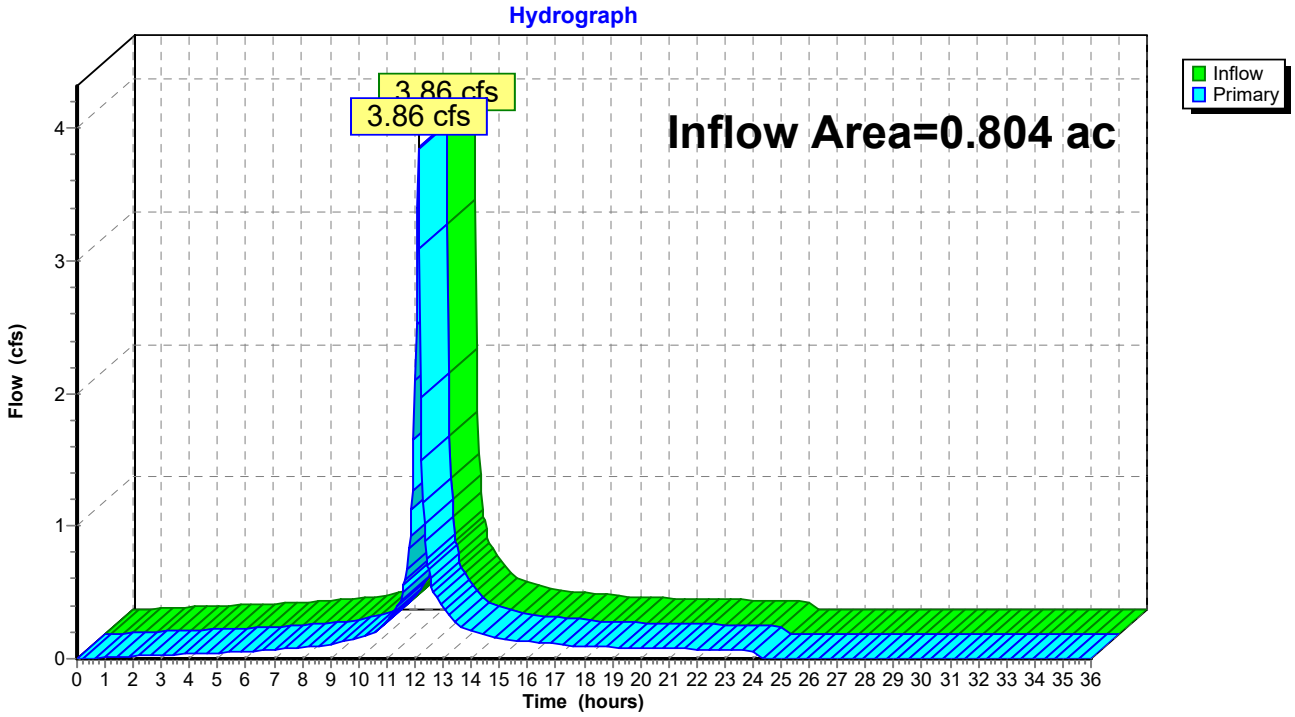


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 83.40% Impervious, Inflow Depth = 4.64" for 25-Year event
Inflow = 3.86 cfs @ 12.11 hrs, Volume= 0.311 af
Primary = 3.86 cfs @ 12.11 hrs, Volume= 0.311 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link DP-1: Broadway Drainage



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: PR-1 Runoff Area=7,522 sf 80.48% Impervious Runoff Depth=5.48"
Tc=5.0 min CN=88 Runoff=1.02 cfs 0.079 af

Subcatchment PR-2: PR-2 Runoff Area=6,666 sf 69.32% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=83 Runoff=0.83 cfs 0.063 af

Subcatchment PR-3: PR-3 Runoff Area=3,515 sf 86.06% Impervious Runoff Depth=5.82"
Tc=5.0 min CN=91 Runoff=0.49 cfs 0.039 af

Subcatchment PR-4: PR-4 Runoff Area=2,549 sf 28.95% Impervious Runoff Depth=2.81"
Tc=5.0 min CN=63 Runoff=0.19 cfs 0.014 af

Subcatchment PR-5: PR-5 Runoff Area=14,778 sf 100.00% Impervious Runoff Depth=6.64"
Tc=5.0 min CN=98 Runoff=2.18 cfs 0.188 af

Pond P-1: CB-4 Peak Elev=68.19' Inflow=1.02 cfs 0.079 af
12.0" Round Culvert n=0.012 L=40.5' S=0.0012 '/' Outflow=1.02 cfs 0.079 af

Pond P-2: CB-2 Peak Elev=68.02' Inflow=1.85 cfs 0.141 af
12.0" Round Culvert n=0.012 L=63.0' S=0.0024 '/' Outflow=1.85 cfs 0.141 af

Pond P-3: CB-3 Peak Elev=67.91' Inflow=2.34 cfs 0.181 af
12.0" Round Culvert n=0.012 L=41.0' S=0.0049 '/' Outflow=2.34 cfs 0.181 af

Pond P-4: DMH-1 Peak Elev=69.29' Inflow=4.52 cfs 0.368 af
12.0" Round Culvert n=0.013 L=72.0' S=0.0056 '/' Outflow=4.52 cfs 0.368 af

Link DP-1: Broadway Drainage Inflow=4.71 cfs 0.382 af
Primary=4.71 cfs 0.382 af

Total Runoff Area = 0.804 ac Runoff Volume = 0.382 af Average Runoff Depth = 5.70"
16.60% Pervious = 0.133 ac 83.40% Impervious = 0.671 ac

Summary for Subcatchment PR-1: PR-1

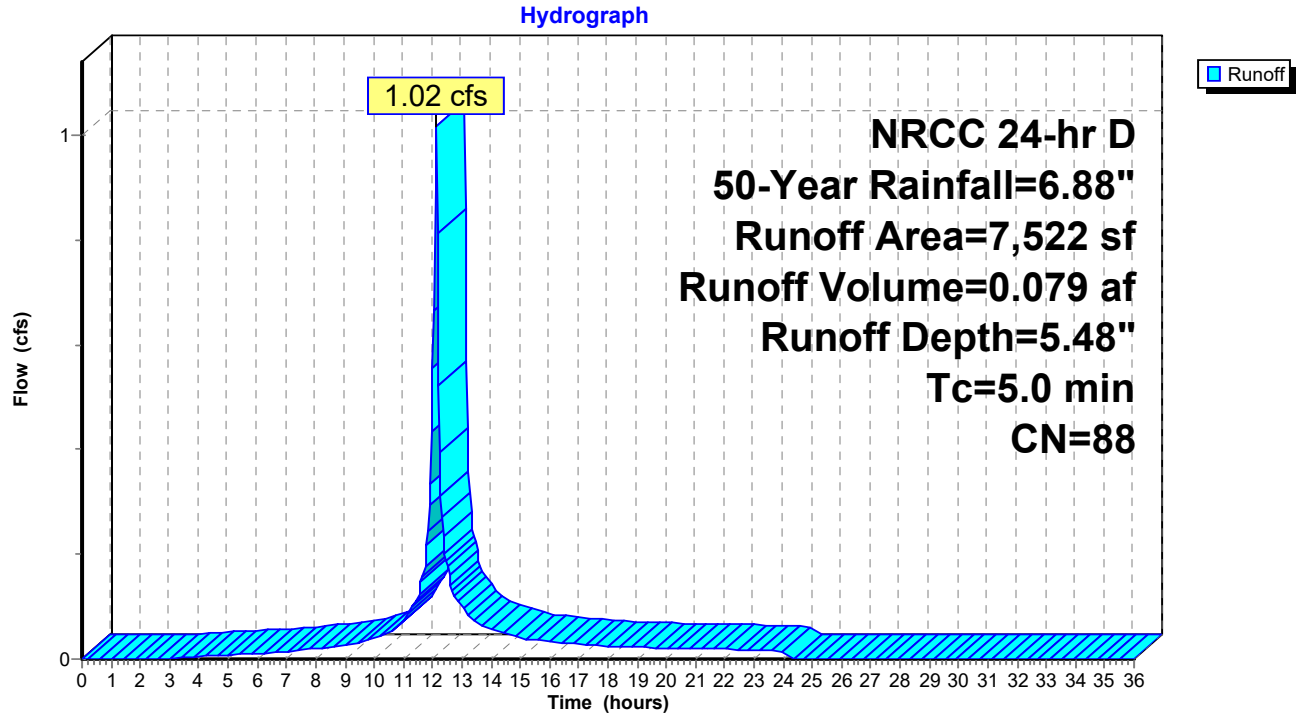
Runoff = 1.02 cfs @ 12.11 hrs, Volume= 0.079 af, Depth= 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
	5,997	98	Paved parking, HSG A
	1,468	49	50-75% Grass cover, Fair, HSG A
*	57	98	Cement Concrete Sidewalk, HSG A
	7,522	88	Weighted Average
	1,468		19.52% Pervious Area
	6,054		80.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

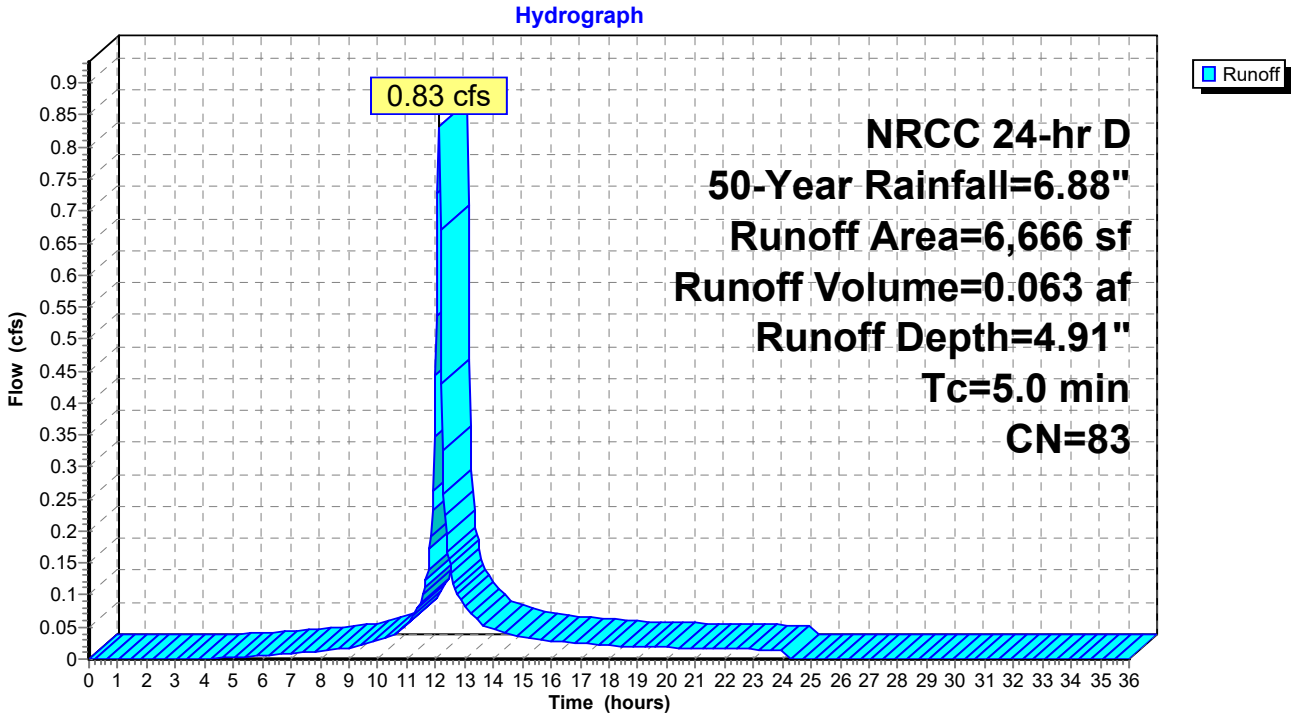
Runoff = 0.83 cfs @ 12.12 hrs, Volume= 0.063 af, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
	3,694	98	Paved parking, HSG A
	2,045	49	50-75% Grass cover, Fair, HSG A
*	927	98	Cement Concrete Sidewalk, HSG A
	6,666	83	Weighted Average
	2,045		30.68% Pervious Area
	4,621		69.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

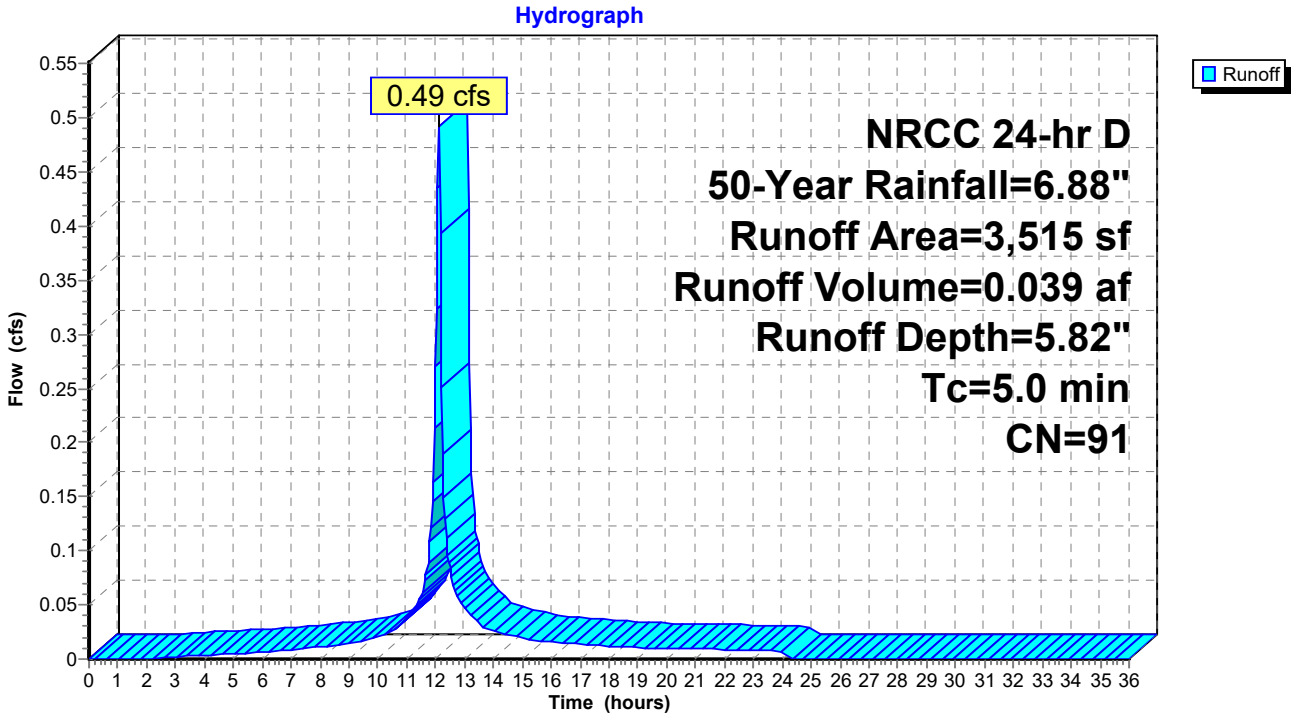
Runoff = 0.49 cfs @ 12.11 hrs, Volume= 0.039 af, Depth= 5.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
	2,249	98	Paved parking, HSG A
	490	49	50-75% Grass cover, Fair, HSG A
*	776	98	Cement Concrete Sidewalk, HSG A
	3,515	91	Weighted Average
	490		13.94% Pervious Area
	3,025		86.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-3: PR-3



Summary for Subcatchment PR-4: PR-4

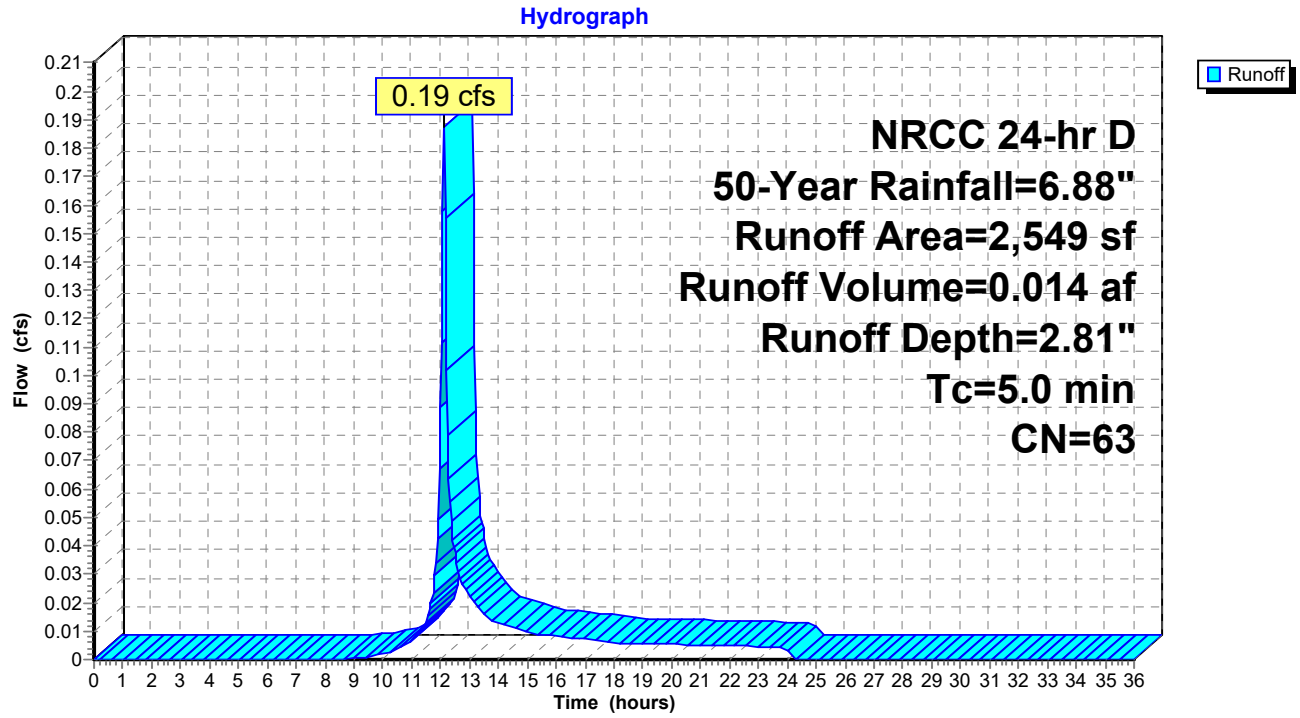
Runoff = 0.19 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

	Area (sf)	CN	Description
	1,811	49	50-75% Grass cover, Fair, HSG A
*	738	98	Cement Concrete Sidewalk, HSG A
	2,549	63	Weighted Average
	1,811		71.05% Pervious Area
	738		28.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-4: PR-4



Summary for Subcatchment PR-5: PR-5

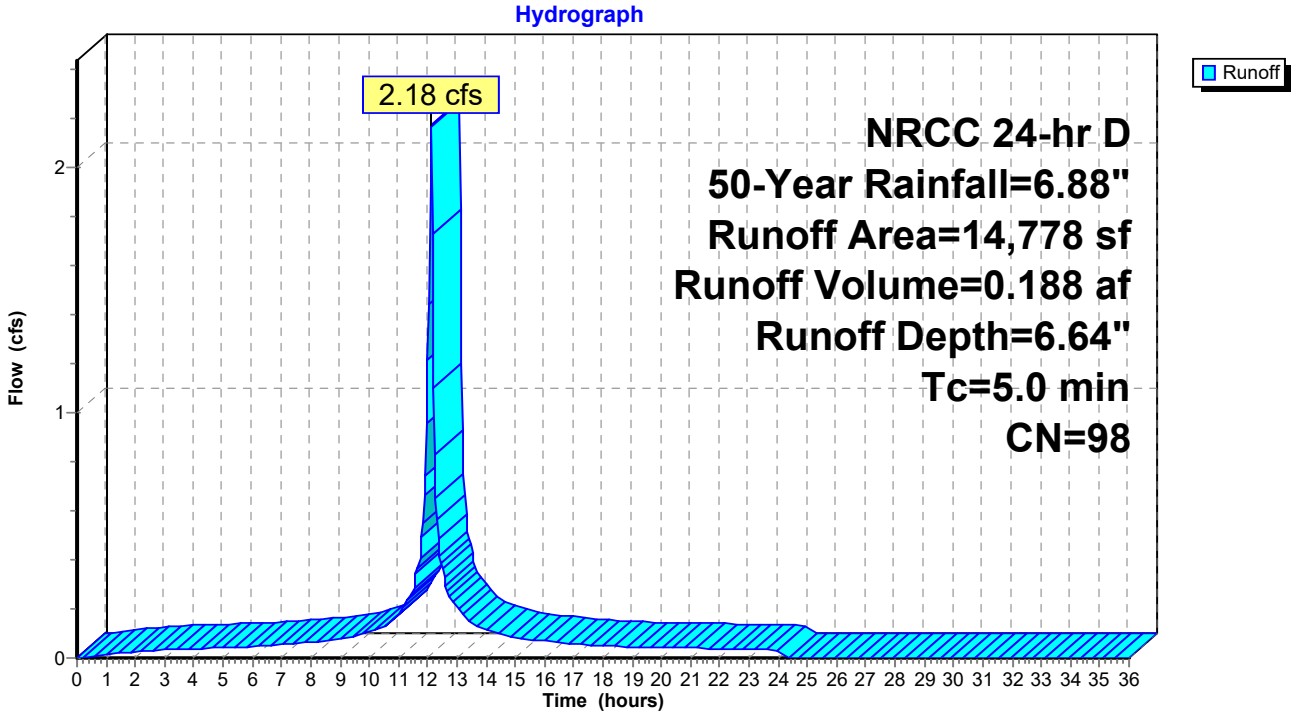
Runoff = 2.18 cfs @ 12.11 hrs, Volume= 0.188 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
NRCC 24-hr D 50-Year Rainfall=6.88"

Area (sf)	CN	Description
14,778	98	Roofs, HSG A
14,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PR-5: PR-5



Summary for Pond P-1: CB-4

[57] Hint: Peaked at 68.19' (Flood elevation advised)

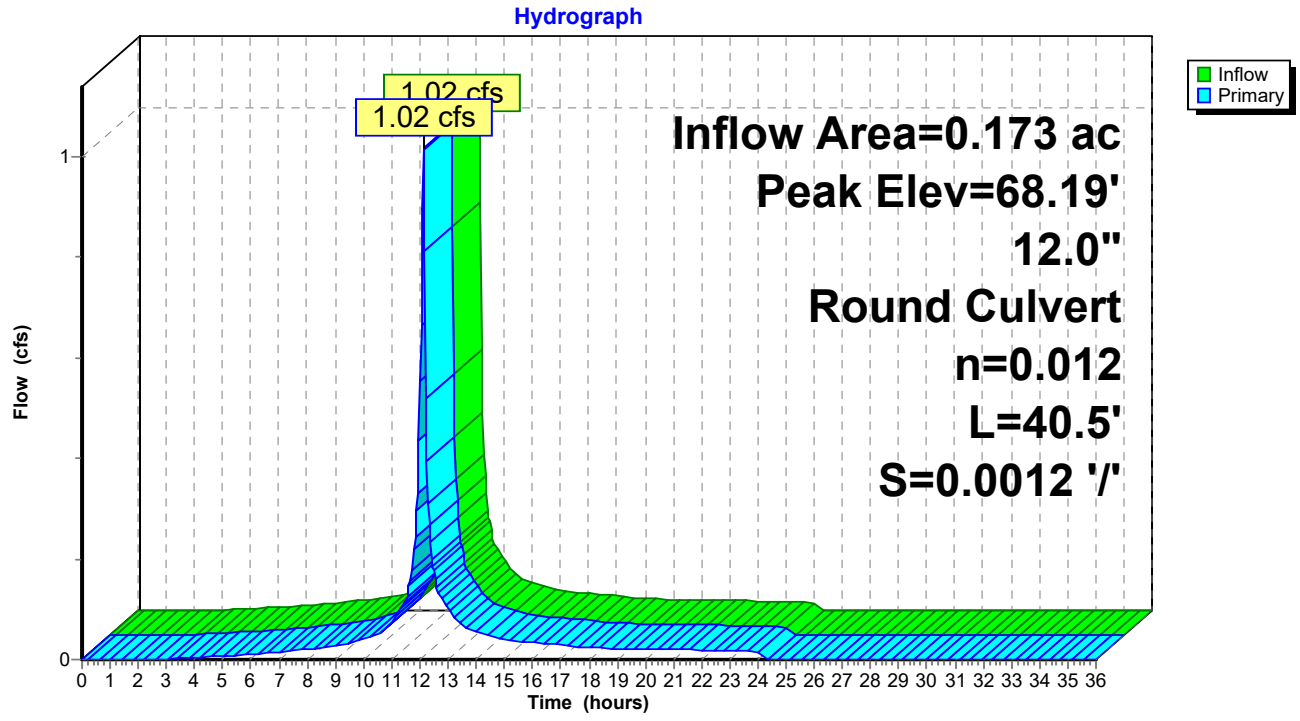
Inflow Area = 0.173 ac, 80.48% Impervious, Inflow Depth = 5.48" for 50-Year event
Inflow = 1.02 cfs @ 12.11 hrs, Volume= 0.079 af
Outflow = 1.02 cfs @ 12.11 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.11 hrs, Volume= 0.079 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 68.19' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.45'	**12.0" Round Outlet Pipe** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.45' / 67.40' S= 0.0012 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.00 cfs @ 12.11 hrs HW=68.18' (Free Discharge)
1=Outlet Pipe (Barrel Controls 1.00 cfs @ 2.27 fps)

Pond P-1: CB-4



Summary for Pond P-2: CB-2

[57] Hint: Peaked at 68.02' (Flood elevation advised)
[79] Warning: Submerged Pond P-1 Primary device # 1 INLET by 0.57'

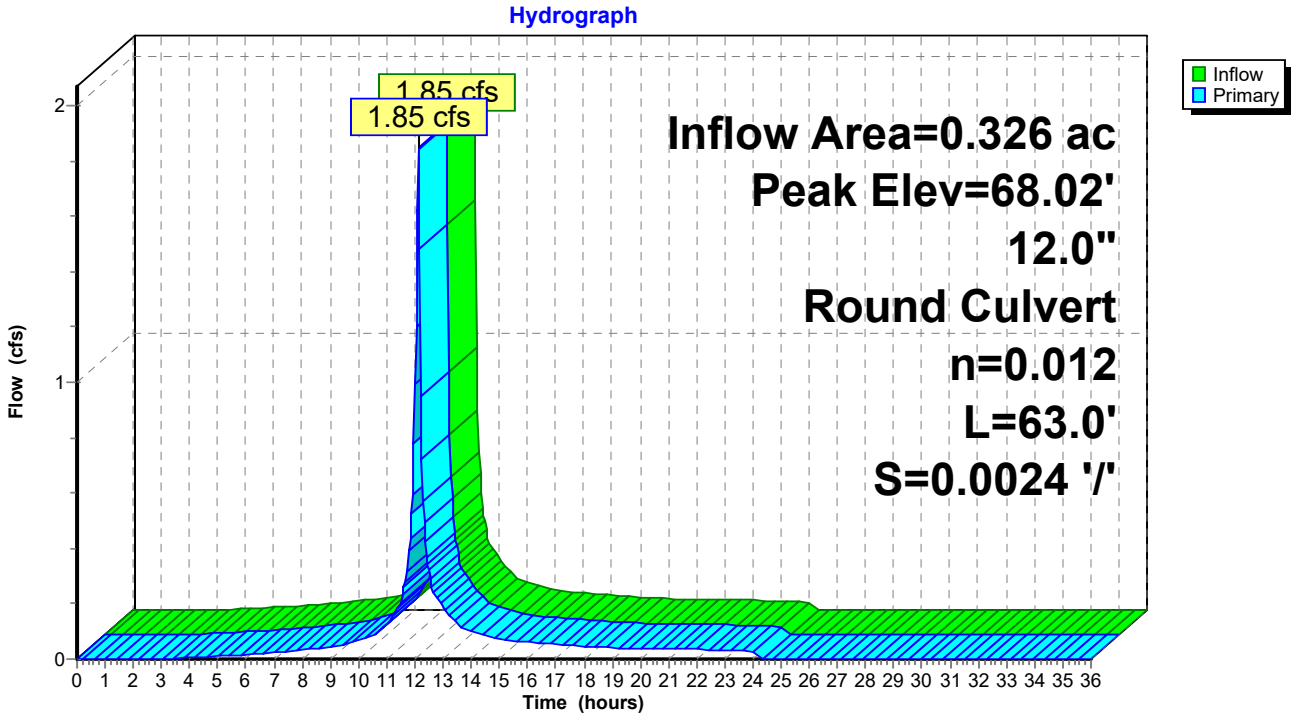
Inflow Area = 0.326 ac, 75.24% Impervious, Inflow Depth = 5.21" for 50-Year event
Inflow = 1.85 cfs @ 12.12 hrs, Volume= 0.141 af
Outflow = 1.85 cfs @ 12.12 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min
Primary = 1.85 cfs @ 12.12 hrs, Volume= 0.141 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 68.02' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**12.0" Round Outlet Pipe** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.85' S= 0.0024 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.82 cfs @ 12.12 hrs HW=68.01' (Free Discharge)
1=Outlet Pipe (Barrel Controls 1.82 cfs @ 2.84 fps)

Pond P-2: CB-2



Summary for Pond P-3: CB-3

[57] Hint: Peaked at 67.91' (Flood elevation advised)
[79] Warning: Submerged Pond P-2 Primary device # 1 INLET by 0.91'

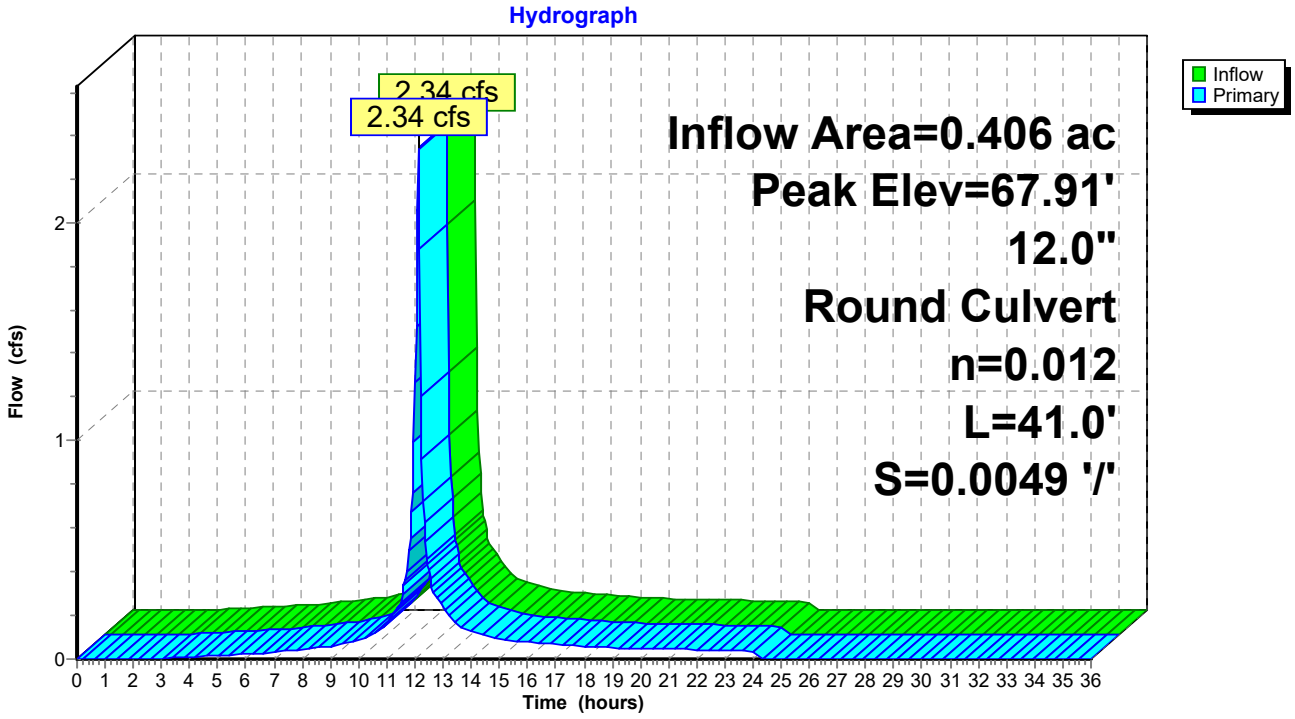
Inflow Area = 0.406 ac, 77.39% Impervious, Inflow Depth = 5.33" for 50-Year event
Inflow = 2.34 cfs @ 12.12 hrs, Volume= 0.181 af
Outflow = 2.34 cfs @ 12.12 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.34 cfs @ 12.12 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 67.91' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.80'	**12.0" Round Outlet Pipe** L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.80' / 66.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.31 cfs @ 12.12 hrs HW=67.90' (Free Discharge)
1=Outlet Pipe (Inlet Controls 2.31 cfs @ 2.94 fps)

Pond P-3: CB-3



Summary for Pond P-4: DMH-1

[57] Hint: Peaked at 69.29' (Flood elevation advised)
[81] Warning: Exceeded Pond P-3 by 1.37' @ 12.12 hrs

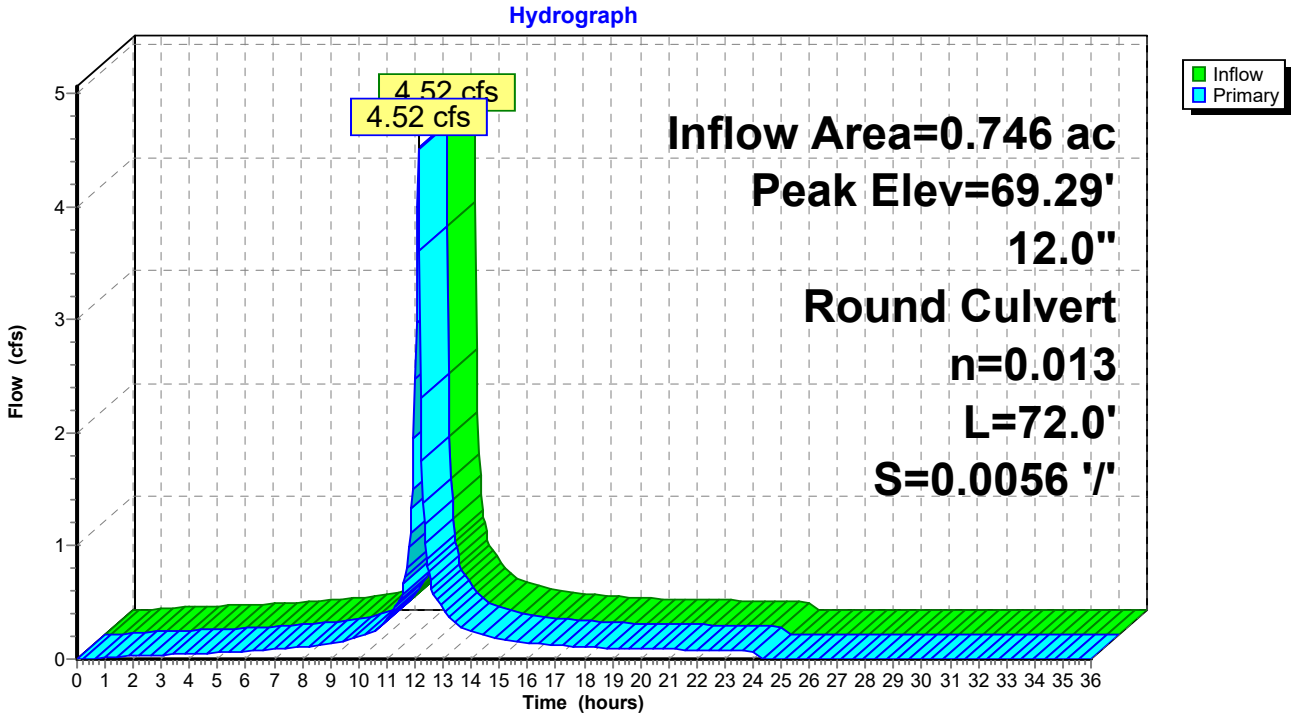
Inflow Area = 0.746 ac, 87.68% Impervious, Inflow Depth = 5.93" for 50-Year event
Inflow = 4.52 cfs @ 12.11 hrs, Volume= 0.368 af
Outflow = 4.52 cfs @ 12.11 hrs, Volume= 0.368 af, Atten= 0%, Lag= 0.0 min
Primary = 4.52 cfs @ 12.11 hrs, Volume= 0.368 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 69.29' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**12.0" Round Outlet Pipe** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.50' / 66.10' S= 0.0056 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf

Primary OutFlow Max=4.44 cfs @ 12.11 hrs HW=69.21' (Free Discharge)
1=Outlet Pipe (Inlet Controls 4.44 cfs @ 5.65 fps)

Pond P-4: DMH-1

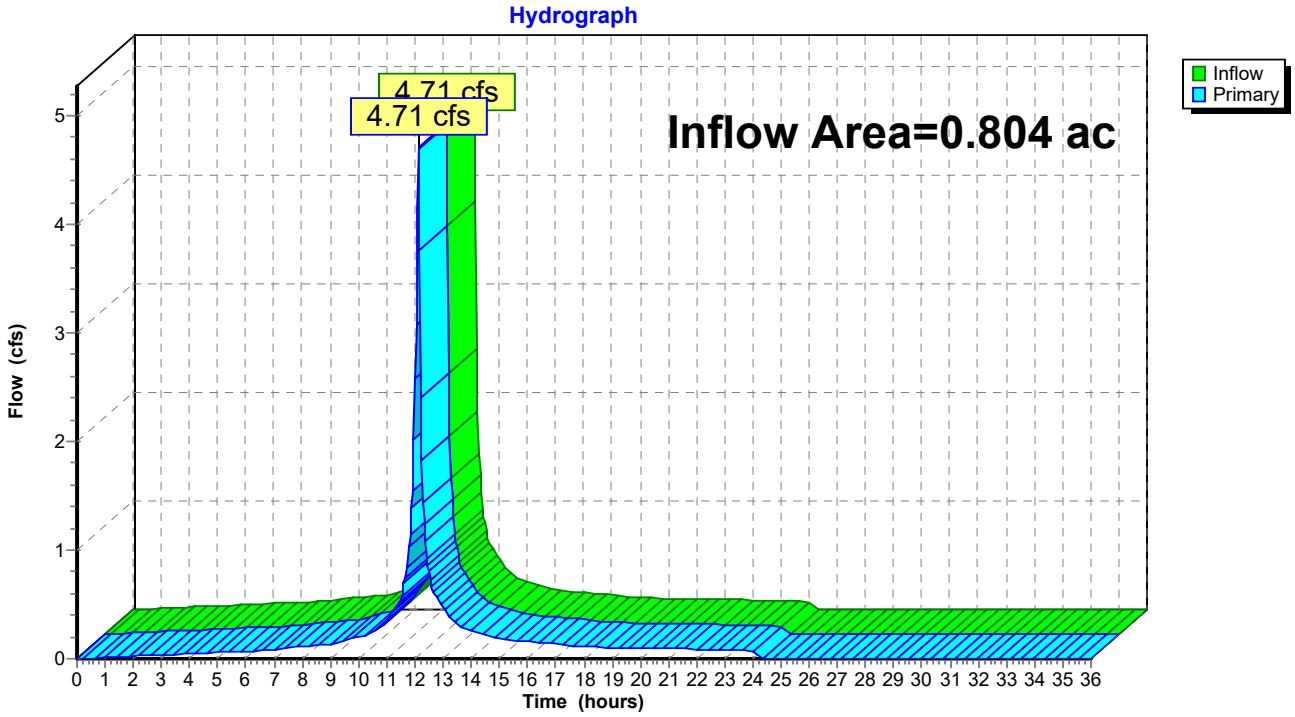


Summary for Link DP-1: Broadway Drainage

Inflow Area = 0.804 ac, 83.40% Impervious, Inflow Depth = 5.70" for 50-Year event
Inflow = 4.71 cfs @ 12.11 hrs, Volume= 0.382 af
Primary = 4.71 cfs @ 12.11 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link DP-1: Broadway Drainage



B

Water Quality Data

65 Glenn Street, Lawrence, MA 01843
tel 978.794.1792 | fax 978.794.1793 | tecmass.com

CALCULATIONS

JOB: Proposed Residenial Development
JOB NUMBER: N0946.02
LOCATION: 14 Broadway, Dover, NH 03820
DATE: July 27, 2021
TITLE: Water Quality Flow Calculation
SHEET: 1 OF 1
CALCULATED BY: MWP
CHECKED BY: CPR

Water Quality Flow Calculation

Q=(q)(A)(WQV)

Q=flow rate associated with first 1-inch of runoff

q=unit peak discharge (in csm/in)

A=impervious surface drainage area (in square miles)

WQV=water quality volume in watershed inches (1-inch)

A=0.666 acres=1.04×10^{-3} square miles

CN=98

Tc=5 minutes

Use Tc to find q:

q=752 csm/inch

Q=(752 csm/inch)(1.04×10^{-3} square miles)(1.0 inch)

Q=0.782 cubic feet per second (cfs)

Location: **Treatment Train #1**

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Deep Sump and Hooded Catch Basins	**0.25**	**1.00**	**0.25**	**0.75**
Water Quality Unit (Stormceptor)	**0.77**	**0.75**	**0.58**	**0.17**

Total TSS Removal = **83%**

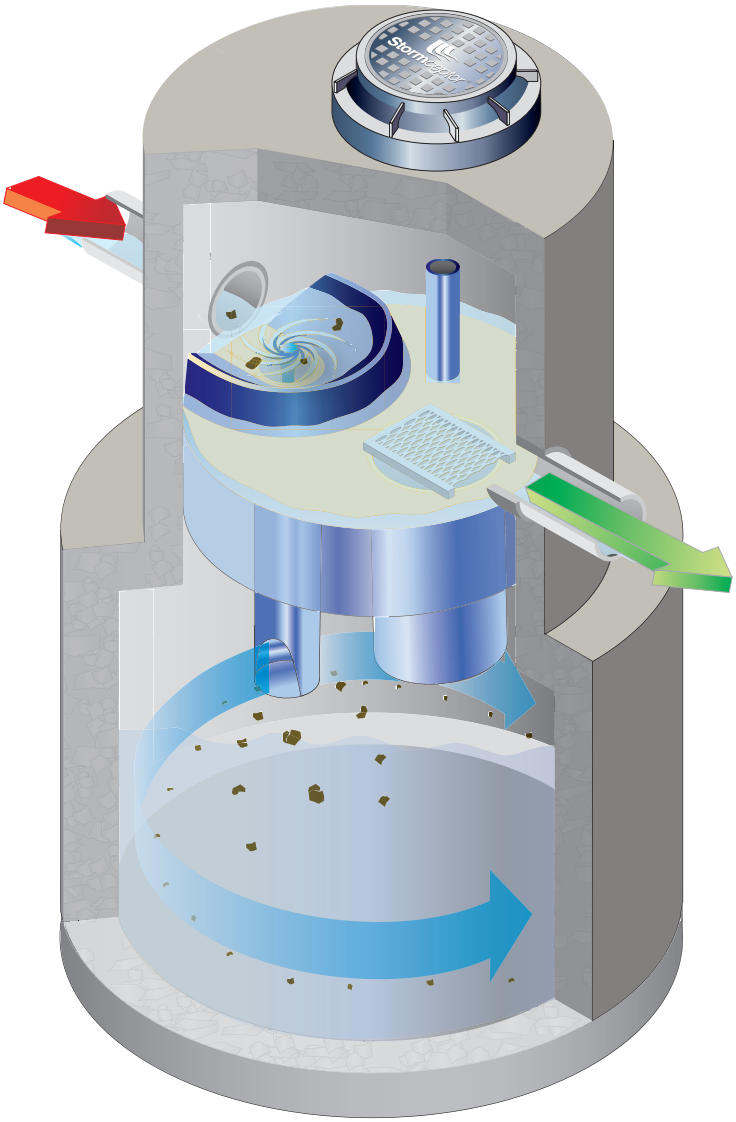
Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:	**N0946.02 14 Broadway Proposed Residential Development**
Prepared By:	**TEC, Inc.**
Date:	**7/27/2021**

*Equals remaining load from previous BMP (E) which enters the BMP

Stormceptor®

Owner's Manual



Stormceptor is protected by one or more of the following patents:

Canadian Patent No. 2,137,942
Canadian Patent No. 2,175,277
Canadian Patent No. 2,180,305
Canadian Patent No. 2,180,338
Canadian Patent No. 2,206,338
Canadian Patent No. 2,327,768
U.S. Patent No. 5,753,115
U.S. Patent No. 5,849,181
U.S. Patent No. 6,068,765
U.S. Patent No. 6,371,690
U.S. Patent No. 7,582,216
U.S. Patent No. 7,666,303
Australia Patent No. 693.164
Australia Patent No. 707,133
Australia Patent No. 729,096
Australia Patent No. 779,401
Australia Patent No. 2008,279,378
Australia Patent No. 2008,288,900
Indonesia Patent No. 0007058
Japan Patent No. 3581233
Japan Patent No. 9-11476
Korean Patent No. 0519212
Malaysia Patent No. 118987
New Zealand Patent No. 314,646
New Zealand Patent No. 583,008
New Zealand Patent No. 583,583
South African Patent No. 2010/00682
South African Patent No. 2010/01796
Other Patents Pending

Table of Contents

1 – Stormceptor Overview

2 – Stormceptor Operation & Components

3 – Stormceptor Identification

4 – Stormceptor Inspection & Maintenance
    Recommended Stormceptor Inspection Procedure
    Recommended Stormceptor Maintenance Procedure

5 – Contact Information (Stormceptor Licensees)

Congratulations!

Your selection of a Stormceptor® means that you have chosen the most recognized and efficient stormwater oil/sediment separator available for protecting the environment. Stormceptor is a pollution control device often referred to as a “Hydrodynamic Separator (HDS)” or an “Oil Grit Separator (OGS)”, engineered to remove and retain pollutants from stormwater runoff to protect our lakes, rivers and streams from the harmful effects of non-point source pollution.

1 – Stormceptor Overview

Stormceptor is a patented stormwater quality structure most often utilized as a treatment component of the underground storm drain network for stormwater pollution prevention. Stormceptor is designed to remove sediment, total suspended solids (TSS), other pollutants attached to sediment, hydrocarbons and free oil from stormwater runoff. Collectively the Stormceptor provides spill protection and prevents non-point source pollution from entering downstream waterways.

Key benefits of Stormceptor include:

- Removes sediment, suspended solids, debris, nutrients, heavy metals, and hydrocarbons (oil and grease) from runoff and snowmelt.
- Will not scour or re-suspend trapped pollutants.
- Provides sediment and oil storage.
- Provides spill control for accidents, commercial and industrial developments.
- Easy to inspect and maintain (vacuum truck).
- “STORMCEPTOR” is *clearly* marked on the access cover (excluding inlet designs).
- Relatively small footprint.
- 3rd Party tested and independently verified.
- Dedicated team of experts available to provide support.

Model Types:

- STC (Standard)
- STF (Fiberglass)
- EOS (Extended Oil Storage)
- OSR (Oil and Sand Removal)
- MAX (Custom designed unit, specific to site)

Configuration Types:

- Inlet unit (accommodates inlet flow entry, and multi-pipe entry)
- In-Line (accommodates multi-pipe entry)
- Submerged Unit (accommodates the site’s tailwater conditions)
- Series Unit (combines treatment in two systems)

Please Maintain Your Stormceptor

To ensure long-term environmental protection through continued performance as originally designed for your site, **Stormceptor must be maintained**, as any stormwater treatment practice does. The need for maintenance is determined through inspection of the Stormceptor. Procedures for inspection are provided within this document. Maintenance of the Stormceptor is performed from the surface via vacuum truck.

If you require information about Stormceptor, or assistance in finding resources to facilitate inspections or maintenance of your Stormceptor please call your local Stormceptor Licensee or Imbrium® Systems.

2 – Stormceptor Operation & Components

Stormceptor is a flexibly designed underground stormwater quality treatment device that is unparalleled in its effectiveness for pollutant capture and retention using patented flow separation technology.

Stormceptor creates a non-turbulent treatment environment below the insert platform within the system. The insert diverts water into the lower chamber, allowing free oils and debris to rise, and sediment to settle under relatively low velocity conditions. These pollutants are trapped and stored below the insert and protected from large runoff events for later removal during the maintenance procedure.

With thousands of units operating worldwide, Stormceptor delivers reliable protection every day, in every storm. The patented Stormceptor design prohibits the scour and release of captured pollutants, ensuring superior water quality treatment and protection during even the most extreme storm events. Stormceptor's proven performance is backed by the longest record of lab and field verification in the industry.

Stormceptor Schematic and Component Functions

Below are schematics of two common Stormceptor configurations with key components identified and their functions briefly described.

Figure 1.

Inline Stormceptor

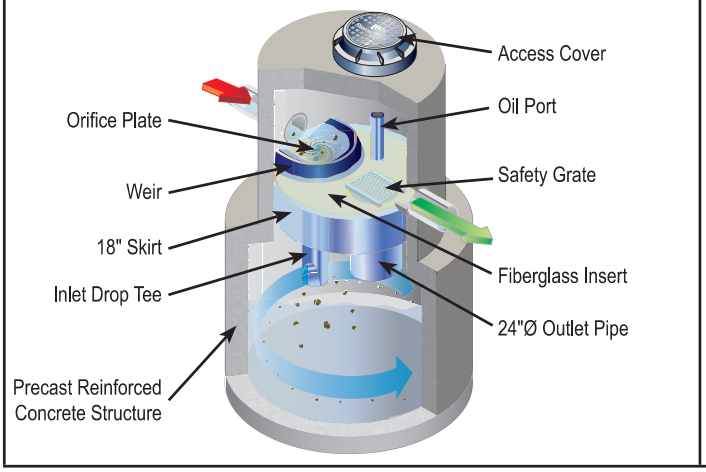
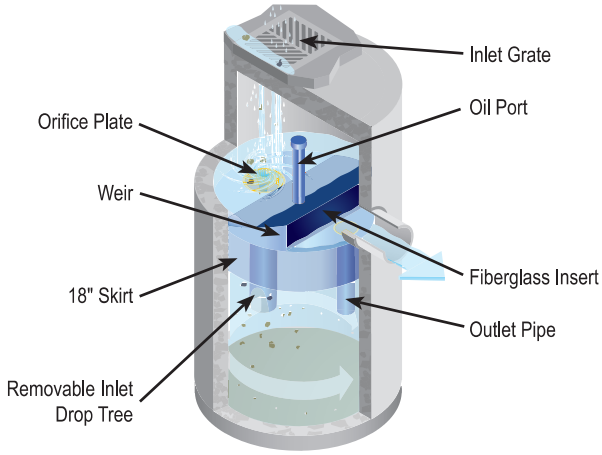


Figure 2.

Inlet Stormceptor



- **Manhole access cover** – provides access to the subsurface components
- **Precast reinforced concrete structure** – provides the vessel's watertight structural support
- **Fiberglass insert** – separates vessel into upper and lower chambers
- **Weir** – directs incoming stormwater and oil spills into the lower chamber
- **Orifice plate** – prevents scour of accumulated pollutants
- **Inlet drop tee** – conveys stormwater into the lower chamber
- **Fiberglass skirt** – provides double-wall containment of hydrocarbons
- **Outlet riser pipe** – conveys treated water to the upper chamber; primary vacuum line access port for sediment removal
- **Oil inspection port** – primary access for measuring oil depth and oil removal
- **Safety grate** – safety measure to cover riser pipe in the event of manned entry into vessel

3 – Stormceptor Identification

Stormceptor is available in both precast concrete and fiberglass vessels, with precast concrete often being the dominant material of construction.

In the Stormceptor, a patented, engineered fiberglass insert separates the structure into an upper chamber and lower chamber. The lower chamber will remain full of water, as this is where the pollutants are sequestered for later removal. Multiple Stormceptor model (STC, OSR, EOS, MAX and STF) configurations exist, each to be inspected and maintained in a similar fashion.

Each unit is easily identifiable as a Stormceptor by the trade name "Stormceptor" embossed on each access cover at the surface. To determine the location of "inlet" Stormceptor units with horizontal catch basin inlet, look down into the grate as the Stormceptor insert will be visible. The name "Stormceptor" is not embossed on inlet models due to the variability of inlet grates used/ approved across North America.

Once the location of the Stormceptor is determined, the model number may be identified by comparing the measured depth from the fiberglass insert level at the outlet pipe's invert (water level) to the bottom of the tank using **Table 1**.

In addition, starting in 1996 a metal serial number tag containing the model number has been affixed to the inside of the unit, on the fiberglass insert. If the unit does not have a serial number, or if there is any uncertainty regarding the size of the unit using depth measurements, please contact your local Stormceptor Representative for assistance.

Sizes/Models

Typical general dimensions and capacities of the standard precast STC, EOS & OSR Stormceptor models in both USA and Canada/International (excluding South East Asia and Australia) are provided in **Tables 1 and 2.** Typical rim to invert measurements are provided later in this document. The total depth for cleaning will be the sum of the depth from outlet pipe invert (generally the water level) to rim (grade) and the depth from outlet pipe invert to the precast bottom of the unit. Note that depths and capacities may vary slightly between regions.

Table 1A. (US) Stormceptor Dimensions – Insert to Base of Structure

STC Model	Insert to Base (in.)
450	60
900	55
1200	71
1800	105
2400	94
3600	134
4800	128
6000	150
7200	134
11000*	128
13000*	150
16000*	134

EOS Model	Insert to Base (in.)
4-175	60
9-365	55
12-590	71
18-1000	105
24-1400	94
36-1700	134
48-2000	128
60-2500	150
72-3400	134
110-5000*	128
130-6000*	150
160-7800*	134

OSR Model	Insert to Base (in.)
65	60
140	55
250	94
390	128
560	134
780*	128
1125*	134

Typical STF m (in.)
1.5 (60)
1.5 (61)
1.8 (73)
2.9 (115)
2.3 (89)
3.2 (127)
2.9 (113)
3.5 (138)
3.3 (128)

Notes:

1. *Depth Below Pipe Inlet Invert to the Bottom of Base Slab can vary slightly by manufacturing facility, and can be modified to accommodate specific site designs, pollutant loads or site conditions. Contact your local representative for assistance.*

**Consist of two chamber structures in series.*

Table 1B. (CA & Int'l) Stormceptor Dimensions – Insert to Base of Structure

STC Model	Insert to Base (m)
300	1.5
750	1.5
1000	1.8
1500	2.8
2000	2.8
3000	3.7
4000	3.4
5000	4.0
6000	3.7
9000*	3.4
11000*	4.0
14000*	3.7

EOS Model	Insert to Base (m)
300	1.5
750	1.5
1000	1.8
2000	2.8
3000	3.7
4000	3.4
5000	4.0
6000	3.7
9000*	3.4
10000*	4.0
14000*	3.7

OSR Model	Insert to Base (m)
300	1.7
750	1.6
2000	2.6
4000	3.6
6000	3.7
9000*	3.6
14000*	3.7

Typical STF m (in.)
1.5 (60)
1.5 (61)
1.8 (73)
2.9 (115)
2.3 (89)
3.2 (127)
2.9 (113)
3.5 (138)
3.3 (128)

Notes:

1. *Depth Below Pipe Inlet Invert to the Bottom of Base Slab can vary slightly by manufacturing facility, and can be modified to accommodate specific site designs, pollutant loads or site conditions. Contact your local representative for assistance.*

**Consist of two chamber structures in series.*

Table 2A. (US) Storage Capacities

STC Model	Hydrocarbon Storage Capacity gal	Sediment Capacity ft^3	**EOS Model**	Hydrocarbon Storage Capacity gal	**OSR Model**	Hydrocarbon Storage Capacity gal	Sediment Capacity ft^3
450	86	46	**4-175**	175	**065**	115	46
900	251	89	**9-365**	365	**140**	233	58
1200	251	127	**12-590**	591			
1800	251	207	**18-1000**	1198			
2400	840	205	**24-1400**	1457	**250**	792	156
3600	840	373	**36-1700**	1773			
4800	909	543	**48-2000**	2005	**390**	1233	465
6000	909	687	**60-2500**	2514			
7200	1059	839	**72-3400**	3418	**560**	1384	690
11000*	2797	1089	**110-5000***	5023	**780***	2430	930
13000*	2797	1374	**130-6000***	6041			
16000*	3055	1677	**160-7800***	7850	**1125***	2689	1378

Notes:

1. *Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.*

**Consist of two chamber structures in series.*

Table 2B. (CA & Int'l) Storage Capacities

STC Model	Hydrocarbon Storage Capacity L	Sediment Capacity L	EOS Model	Hydrocarbon Storage Capacity L	OSR Model	Hydrocarbon Storage Capacity L	Sediment Capacity L
300	300	1450	**300**	662	**300**	300	1500
750	915	3000	**750**	1380	**750**	900	3000
1000	915	3800	**1000**	2235			
1500	915	6205					
2000	2890	7700	**2000**	5515	**2000**	2790	7700
3000	2890	11965	**3000**	6710			
4000	3360	16490	**4000**	7585	**4000**	4700	22200
5000	3360	20940	**5000**	9515			
6000	3930	26945	**6000**	12940	**6000**	5200	26900
9000*	10555	32980	**9000***	19010	**9000***	9300	33000
11000*	10555	37415	**10000***	22865			
14000*	11700	53890	**14000***	29715	**14000***	10500	53900

Notes:

1. *Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.*

**Consist of two chamber structures in series.*

4 – Stormceptor Inspection & Maintenance

Regular inspection and maintenance is a proven, cost-effective way to maximize water resource protection for all stormwater pollution control practices, and is required to insure proper functioning of the Stormceptor. Both inspection and maintenance of the Stormceptor is easily performed from the surface. Stormceptor's patented technology has no moving parts, simplifying the inspection and maintenance process.

Please refer to the following information and guidelines before conducting inspection and maintenance activities.

When is inspection needed?

- Post-construction inspection is required prior to putting the Stormceptor into service.
- Routine inspections are recommended during the first year of operation to accurately assess the sediment accumulation.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after oil, fuel, or other chemical spills.

When is maintenance cleaning needed?

- For optimum performance, the unit should be cleaned out once the sediment depth reaches the recommended maintenance sediment depth, which is approximately 15% of the unit's total storage capacity (see **Table 2**). The frequency should be adjusted based on historical inspection results due to variable site pollutant loading.

- Sediment removal is easier when removed on a regular basis at or prior to the recommended maintenance sediment depths, as sediment build-up can compact making removal more difficult.
- The unit should be cleaned out immediately after an oil, fuel or chemical spill.

What conditions can compromise Stormceptor performance?

- If construction sediment and debris is not removed prior to activating the Stormceptor unit, maintenance frequency may be reduced.
- If the system is not maintained regularly and fills with sediment and debris beyond the capacity as indicated in **Table 2**, pollutant removal efficiency may be reduced.
- If an oil spill(s) exceeds the oil capacity of the system, subsequent spills may not be captured.
- If debris clogs the inlet of the system, removal efficiency of sediment and hydrocarbons may be reduced.
- If a downstream blockage occurs, a backwater condition may occur for the Stormceptor and removal efficiency of sediment and hydrocarbons may be reduced.

What training is required?

The Stormceptor is to be inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. For typical inspection and maintenance activities, no specific supplemental training is required for the Stormceptor. Information provided within this Manual (provided to the site owner) contains sufficient guidance to maintain the system properly.

In unusual circumstances, such as if a damaged component needs replacement or some other condition requires manned entry into the vessel, confined space entry procedures must be followed. Only professional maintenance service providers trained in these procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

What equipment is typically required for inspection?

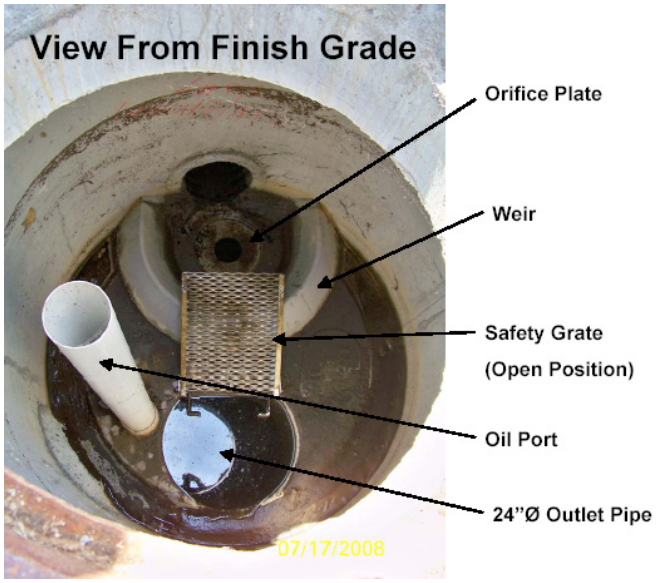
- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

Recommended Stormceptor Inspection Procedure:

- Stormceptor is to be inspected from grade through a standard surface manhole access cover.
- Sediment and oil depth inspections are performed with a sediment probe and oil dipstick.
- Oil depth is measured through the oil inspection port, either a 4-inch (100 mm) or 6-inch (150 mm) diameter port.
- Sediment depth can be measured through the oil inspection port or the 24-inch (610 mm) diameter outlet riser pipe.
- Inspections also involve a visual inspection of the internal components of the system.

Figure 3.

Figure 4.



What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal
- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required

Recommended Stormceptor Maintenance Procedure

Maintenance of Stormceptor is performed using a vacuum truck.

No entry into the unit is required for maintenance. ***DO NOT ENTER THE STORMCEPTOR CHAMBER*** unless you have the proper personal safety equipment, have been trained and are qualified to enter a confined space, as identified by local Occupational Safety and Health Regulations (e.g. 29 CFR 1910.146 or Canada Occupational Safety and Health Regulations – SOR/86-304). Without the proper equipment, training and permit, entry into confined spaces can result in serious bodily harm and potentially death. Consult local, provincial, and/or state regulations to determine the requirements for confined space entry. Be aware, and take precaution that the Stormceptor fiberglass insert may be slippery. In addition, be aware that some units do not have a safety grate to cover the outlet riser pipe that leads to the submerged, lower chamber.

- Ideally maintenance should be conducted during dry weather conditions when no flow is entering the unit.
- Stormceptor is to be maintained through a standard surface manhole access cover.
- Insert the oil dipstick into the oil inspection port. If oil is present, pump off the oil layer into separate containment using a small pump and tubing.
- Maintenance cleaning of accumulated sediment is performed with a vacuum truck.
    - For 6-ft (1800 mm) diameter models and larger, the vacuum hose is inserted into the lower chamber via the 24-inch (610 mm) outlet riser pipe.
    - For 4-ft (1200 mm) diameter model, the removable drop tee is lifted out, and the vacuum hose is inserted into the lower chamber via the 12-inch (305 mm) drop tee hole.

Figure 5.

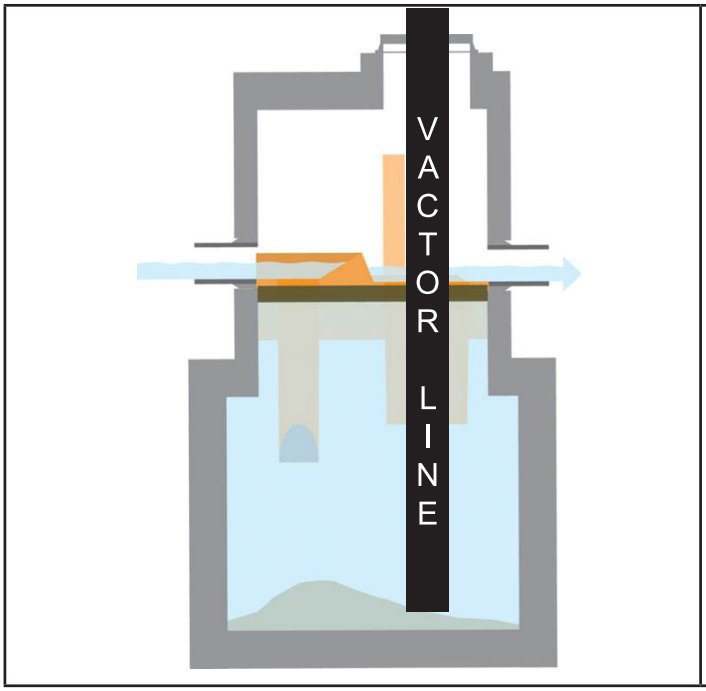
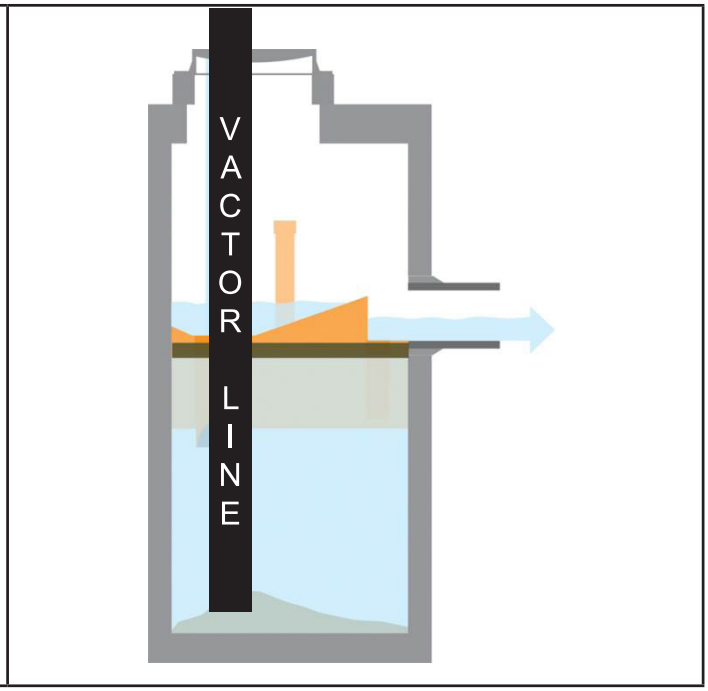


Figure 6.



- Using the vacuum hose, decant the water from the lower chamber into a separate containment tank or to the sanitary sewer, if permitted by the local regulating authority.
- Remove the sediment sludge from the bottom of the unit using the vacuum hose. For large Stormceptor units, a flexible hose is often connected to the primary vacuum line for ease of movement in the lower chamber.
- Units that have not been maintained regularly, have surpassed the maximum recommended sediment capacity, or contain damaged components may require manned entry by trained personnel using safe and proper confined space entry procedures.

Figure 7.

Figure 8.

A maintenance worker stationed at the above ground surface uses a vacuum hose to evacuate water, sediment, and debris from the system.

What is required for proper disposal?

The requirements for the disposal of material removed from Stormceptor units are similar to that of any other stormwater treatment Best Management Practices (BMP). Local guidelines should be consulted prior to disposal of the separator contents. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste. This could be site and pollutant dependent. In some cases, approval from the disposal facility operator/agency may be required.

What about oil spills?

Stormceptor is often implemented in areas where there is high potential for oil, fuel or other hydrocarbon or chemical spills. Stormceptor units should be cleaned immediately after a spill occurs by a licensed liquid waste hauler. You should also notify the appropriate regulatory agencies as required in the event of a spill.

What if I see an oil rainbow or sheen at the Stormceptor outlet?

With a steady influx of water with high concentrations of oil, a sheen may be noticeable at the Stormceptor outlet. This may occur because a hydrocarbon rainbow or sheen can be seen at

very small oil concentrations (< 10 ppm). Stormceptor is effective at removing 95% of free oil, and the appearance of a sheen at the outlet with high influent oil concentrations does not mean that the unit is not working to this level of removal. In addition, if the influent oil is emulsified, the Stormceptor will not be able to remove it. The Stormceptor is designed for free oil removal and not emulsified or dissolved oil conditions.

What factors affect the costs involved with inspection/maintenance?

The Vacuum Service Industry for stormwater drainage and sewer systems is a well-established sector of the service industry that cleans underground tanks, sewers and catch basins. Costs to clean Stormceptor units will vary. Inspection and maintenance costs are most often based on unit size, the number of units on a site, sediment/oil/hazardous material loads, transportation distances, tipping fees, disposal requirements and other local regulations.

What factors predict maintenance frequency?

Maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, site activity and use, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. If the sediment load is high from an unstable site or sediment loads transported from upstream catchments, maintenance may be required semi-annually. Conversely once a site has stabilized, maintenance may be required less frequently (for example: two to seven year, site and situation dependent). Maintenance should be performed immediately after an oil spill or once the sediment depth in Stormceptor reaches the value specified in **Table 3** based on the unit size.

Table 3A. (US) Recommended Sediment Depths Indicating Maintenance

STC Model	Maintenance Sediment depth (in)	EOS Model	Maintenance Sediment depth (in)	Oil Storage Depth (in)	OSR Model	Maintenance Sediment depth (in)
450	8	**4-175**	9	24	**065**	8
900	8	**9-365**	9	24	**140**	8
1200	10	**12-590**	11	39		
1800	15					
2400	12	**24-1400**	14	68	**250**	12
3600	17	**36-1700**	19	79		
4800	15	**48-2000**	16	68	**390**	17
6000	18	**60-2500**	20	79		
7200	15	**72-3400**	17	79	**560**	17
11000*	17	**110-5000***	16	68	**780***	17
13000*	20	**130-6000***	20	79		
16000*	17	**160-7800***	17	79	**1125***	17

Note:

1. *The values above are for typical standard units.*

**Per structure.*

Table 3B. (CA & Int'l) Recommended Sediment Depths Indicating Maintenance

STC Model	Maintenance Sediment depth (mm)	EOS Model	Maintenance Sediment depth (mm)	Oil Storage Depth (mm)	OSR Model	Maintenance Sediment depth (mm)
300	225	**300**	225	610	**300**	200
750	230	**750**	230	610	**750**	200
1000	275	**1000**	275	990		
1500	400					
2000	350	**2000**	350	1727	**2000**	300
3000	475	**3000**	475	2006		
4000	400	**4000**	400	1727	**4000**	375
5000	500	**5000**	500	2006		
6000	425	**6000**	425	2006	**6000**	375
9000*	400	**9000***	400	1727	**9000***	425
11000*	500	**10000***	500	2006		
14000*	425	**14000***	425	2006	**14000***	425

Note:

1. *The values above are for typical standard units.*

   **Per structure.*

Replacement parts

Since there are no moving parts during operation in a Stormceptor, broken, damaged, or worn parts are not typically encountered. Therefore, inspection and maintenance activities are generally focused on pollutant removal. However, if replacements parts are necessary, they may be purchased by contacting your local Stormceptor Representative, or Imbrium Systems.

The benefits of regular inspection and maintenance are many – from ensuring maximum operation efficiency, to keeping maintenance costs low, to the continued protection of natural waterways – and provide the key to Stormceptor's long and effective service life.

Stormceptor Inspection and Maintenance Log

Stormceptor Model No: _____

Allowable Sediment Depth: _____

Serial Number: _____

Installation Date: _____

Location Description of Unit: _____

Other Comments: _____

Contact Information

Questions regarding the Stormceptor can be addressed by contacting your area Stormceptor Licensee, Imbrium Systems, or visit our website at www.stormceptor.com.

Stormceptor Licensees:

CANADA

Lafarge Canada Inc.
www.lafargepipe.com

403-292-9502 / 1-888-422-4022	Calgary, AB
780-468-5910	Edmonton, AB
204-958-6348	Winnipeg, MB, NW. ON, SK

Langley Concrete Group
www.langleyconcretegroup.com

604-502-5236	BC

Hanson Pipe & Precast Inc.
www.hansonpipeandprecast.com

519-622-7574 / 1-888-888-3222	ON

Lécuyer et Fils Ltée.
www.lecuyerbeton.com

450-454-3928 / 1-800-561-0970	QC

Strescon Limited
www.strescon.com

902-494-7400	NS, NF
506-633-8877	NB, PE

UNITED STATES

Rinker Materials
www.rinkerstormceptor.com
1-800-909-7763

AUSTRALIA & SOUTHEAST ASIA, including New Zealand & Japan

Humes Water Solutions
www.humes.com.au
+61 7 3364 2894

Imbrium Systems Inc. & Imbrium Systems LLC

Canada	1-416-960-9900 / 1-800-565-4801
United States	1-301-279-8827 / 1-888-279-8826
International	+1-416-960-9900 / +1-301-279-8827
Email	info@imbriumsystems.com

www.imbriumsystems.com
www.stormceptor.com

Fact Sheet #4

Stormwater Technology: Stormceptor

(Hydro Conduit, formerly CSR New England Pipe)

Revised February 2003

*The **Stormceptor Fact Sheet** is one in a series of fact sheets for stormwater technologies and related performance evaluations, which are undertaken by the **Massachusetts STrategic Envirotechnology Partnership (STEP).***

The STEP evaluation entitled, *Technology Assessment, Stormceptor CSR New England Pipe*, January 1998 is the information source for this fact sheet. When a more thorough understanding of a system is required, the full *Technology Assessment* should be reviewed. Copies are available for downloading from the STEP Web site (www.STEPSITE.org/) or by contacting the STEP Program (Phone: 617/626/1197, FAX: 617/626/1180, email: linda.benevides@state.ma.us). This fact sheet is subject to future updates as additional performance information becomes available.

Description/Definition

Stormceptor is a prefabricated, underground unit that separates oils, grease, and sediment from stormwater runoff when installed with an existing or new pipe conveyance system. The unit is divided into two chambers–a treatment and a flow bypass chamber. During typical storm events, runoff is directed by the inflow weir through a drop pipe into the lower treatment chamber where sediment, oil, and grease are separated from the flow by gravity. The bypass chamber is designed to convey excess stormwater, which overtops the inflow weir, through the system without treatment.

Equipment and Sizing

The on-line Stormceptor units are available in eight sizes ranging from six and twelve feet in diameter with capacities of 900 to 7200 gallons. Since issuing the STEP assessment in 1998, the manufacturer has expanded the Stormceptor product line to include a storm drain inlet (STC 450i) and three units (Models STC 11000, STC 13000, and STC16000). These systems are not included in the STEP evaluation. Users and decision-makers may require additional field test results and new data for these new systems in order to accept performance ratings, particularly if they are higher than those reported in the STEP technology assessment and this fact sheet.

Stormceptor units are available in either precast concrete or fiberglass for special applications. Concrete units are pre-engineered for HS-20 min. traffic loading at the surface. Fiberglass units can be used in areas where there is a potential for oil and chemical spills.

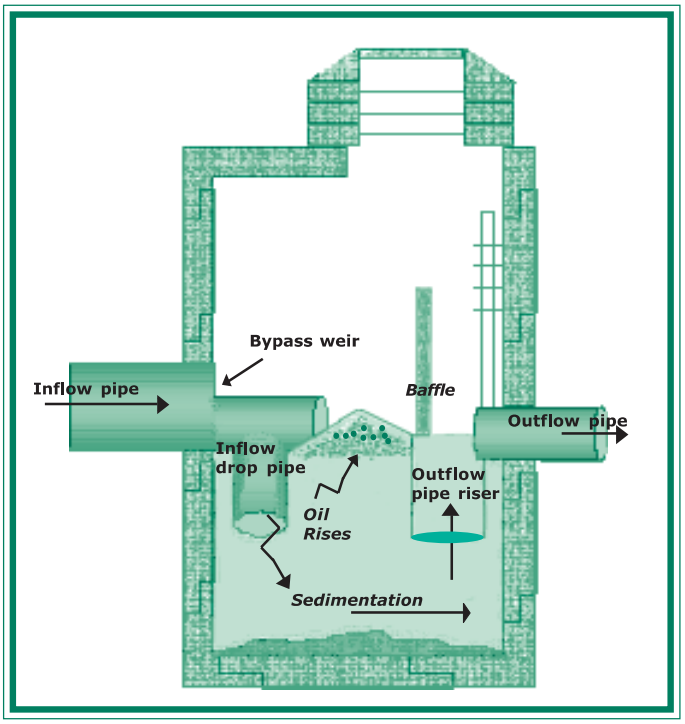


Figure 1. Stormceptor operation during average flow conditions.

Performance/Effectiveness

The system is designed to provide separation of sediment, oil, and grease from stormwater by routing runoff into a low-turbulence environment where solids settle and oils float out of solution. The system sizing is based on the drainage area, historical rainfall data, and the solids removal efficiency required. It is recommended that the system be used in combination with other stormwater controls to conform with the Massachusetts Stormwater Management Policy and standards.

An Imperial Model STC 2000 (equivalent to the Model STC 2400) in Edmonton, Canada treats flow from a 9.8 acre commercial parking lot. This system was monitored during four storm events in 1996 and shown to have an average total suspended solids (TSS) removal efficiency of 52 percent. In designing a system to achieve a comparable removal efficiency, the relationship between system size and impervious drainage area should be considered, as detailed in Table 1 and the Technology Assessment Report.

A Model STC 1200 in Westwood, Massachusetts treats flow from 0.65 acres consisting of a paved truck loading area at a manufacturing facility. The unit was monitored for six storm events in 1997, but only four events had measurable TSS influent concentrations. Of these four events, the average TSS removal efficiency was calculated to be 77 percent, which is less than the 80 percent removal targeted by the manufacturer.

Based on these field monitoring results, and when the unit sizing follows the guidance in Table 1, removal efficiencies between 52 percent and 77 percent may be achieved where installations have similar rainfall and land use characteristics as those reviewed for the STEP evaluation. It is recommended that additional field research and new data be evaluated to validate performance ratings higher than those verified by STEP.

Specific performance claims for oil and grease were not evaluated by STEP. However, total petroleum hydrocarbons (TPH) were analyzed during the Westwood study. Results indicated that the unit was effective in capturing oils.

Stormceptor Model Number	Maximum Impervious Area (acres)	
	77% TSS removal	52% TSS removal
STC 900	0.45	0.9
STC 1200	0.7	1.45
STC 1800	1.25	2.55
STC 2400	1.65	3.35
STC 3600	2.6	5.3
STC 4800	3.6	7.25
STC 6000	4.6	9.25
STC 7200	5.55	11.25

Table 1: Sizing for TSS removal (adapted from the manufacturer's sizing in the 1998 STEP Report) Use the table to determine a TSS removal rate. Use the new Rinker method for sizing Stormceptor units. The sizing method has been changed since publication of the STEP Report. **Note:** To achieve 52% and 77% TSS removal rates on some sites, it may be necessary to use lower maximum impervious areas than those in Table 1.

Technology Status

The Stormceptor system provides greater solids separation and higher TSS removal efficiencies than oil and grit separators. Stormceptor systems are among the category of hydrodynamic separators, which are flow-through devices with the capacity to settle or separate grit, oil, sediment, or other pollutants from stormwater. According to the U.S. Environmental Protection Agency, "Hydrodynamic separators are most effective where the materials to be removed from runoff are heavy particulates - which can be settled - or floatables - which can be captured, rather than solids with poor settleability or dissolved pollutants."

The field studies evaluated for the STEP assessment predate the Stormwater Best Management Practice Demonstration Tier II Protocol (2001), which is applicable in Massachusetts and other states in the Technology Acceptance Reciprocity Partnership (TARP), to ensure quality controlled studies that can be shared among participating states. Therefore, interstate reciprocity is not available to the manufacturer, based on performance claims that were evaluated by STEP in 1998. If the TARP Protocol requirements are fulfilled in the future, the manufacturer could pursue reciprocal verification for Stormceptor systems in participating TARP states. More information on the TARP Protocol is available on the following Web site: www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp.

Applications/Advantages

- Stormceptor systems identified in Table 1 should be used in combination with other BMPs to remove 80 percent of the average annual load of TSS (DEP Stormwater Policy Standard 4). Systems may be well suited for pretreatment in a mixed component system designed for stormwater recharge.
- Performance data show that Stormceptor may provide TSS removal rates in the range of 52 percent to 77 percent when sized according to Table 1. Higher TSS removal rates were achieved during low flow, low intensity storms with less than one third of an inch of runoff. Also, by reducing the impervious drainage area, relative to the system size, the STEP Technology Assessment Report indicated that higher removal efficiencies may be achievable. However, STEP recommends collection of additional data "representing a varied set of operating conditions over a realistic maintenance cycle to verify TSS removal rates greater than 80 percent."
- The Stormceptor system is suitable for new and retrofit applications. For retrofit applications, it should not

take the place of a catch basin for the systems that have been verified. Also, for retrofit applications, it should be installed in lateral lines and not main trunk lines.

- The system is particularly well suited in constricted areas and where space is limited.
- It also is suitable for use in areas of high potential pollutant loads (DEP Stormwater Policy Standard 5), where it may be used effectively in capturing and containing oil and chemical spills. *Web site:* www.state.ma.us/dep/brp/stormwtr/stormpub.htm.

Considerations/Limitations

- Systems are not expected to provide significant nutrient (nitrogen and phosphorus) or fecal coliform removal.
- The systems are not recommended for use in critical areas, such as public drinking water supplies, certified vernal pools, public swimming beaches, shellfish growing areas, cold water fisheries, and some Areas of Critical Environmental Concern (ACECs), except as a pretreatment device for BMPs that have been approved by DEP for use in critical areas. The structural BMPs approved for use in critical areas are described in Standard 6 of the Stormwater Management Policy, www.state.ma.us/dep/brp/stormwtr/stormpub.htm.
- There is a limited set of useful data for predicting the relationship between treatment efficiency and loading rates. Removal efficiencies have not been demonstrated for all unit sizes.
- Further research is needed to determine how much TSS bypasses the treatment chamber during certain, higher velocity storm events which recur less frequently.
- Systems require regular maintenance to minimize the potential for washout of the accumulated sediments.

Reliability/Maintenance

All BMPs require scheduled, routine maintenance to ensure that they operate as efficiently as possible. Although maintenance requirements are site specific, a general relationship between cleaning needs and depths of sediment has been established by the manufacturer. Inspection of the Stormceptor interior should be done after major storm events, particularly in the first year of operation. It is recommended that material in the treatment chamber be pumped out by a vacuum truck semiannually, or when the sediment and pollutant loads reach about 15 percent of the total storage. If the unit is used for spill containment, it should be pumped after the event is contained. Typical cleaning costs were estimated by the manufacturer in 1998 to be $250, with disposal costs averaging $300 to $500. The expected life of a system has been estimated to be 50 to 100 years.

Sediment Depths Indicating Required Maintenance	
Model Number	**Sediment Depth (feet)**
STC 900	0.5
STC 1200	0.75
STC 1800	1
STC 2400	1
STC 3600	1.25
STC 4800	1
STC 6000	1.5
STC 7200	1.25

Table 2: The Stormceptor clean out is based on 15 percent of the sediment storage volume in the

References

Winkler, E.S. 1998. "Technology Assessment, Stormceptor." University of Massachusetts, Amherst, MA. *STEP Web site:* www.STEPSITE.org/

Massachusetts Department of Environmental Protection and Office of Coastal Zone Management. 1997. "Stormwater Management Handbooks, Volumes One and Two." Boston, MA. *Handbooks Web site:* www.state.ma.us/dep/brp/stormwtr/stormpub.htm.

United States Environmental Protection Agency. "Storm Water Technology Fact Sheet Hydrodynamic Separators." EPA 832-F-99-017.

Stormceptor Web sites: www.rinkermaterials.com/stormceptor

TARP Web site: www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp

STEP Verification vs. Regulatory Approval

STEP assistance to developers of innovative technologies and STEP verification of stormwater treatment systems is not required to receive necessary approvals from conservation commissions or the Department of Environmental Protection (DEP). However, if a system has received verfication, a conservation commission shall presume that the technology will function as proposed, provided the conditions are similar to those in which performance was verified. STEP reports are not technology approvals, and do not constitute an endorsement or recommendation for use. Questions on regulatory issues should be referred to the DEP regional offices.

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

Rhode Island Alternative Stormwater Technology Certification

Vendor Contact:
Mr. John F. Czach, PE
Regional Engineer
Rinker Material – Concrete Pipe Division
69 Neck Road
Westfield, MA 01085
(413) 562-3647
Johnf.czach@cemex.com
www.rinkerpipe.com

Technology Name:
Stormceptor© Stormwater Treatment System (Specific models attached)

Approval Type:
Pretreatment/Retrofits
LUPPHL (conditional)

Certification Dates:
Issued: February 5, 2016
Expires: February 5, 2021

The Technology Review Team which consists of members from the Department of Environmental Management (DEM), and the Coastal Resources Management Council (CRMC) have reviewed the Stormceptor© Application to for Technology Approval and accepted use for Stormwater Treatment in the State of Rhode Island.

In accordance with Section 3.2.3 of the Rhode Island Stormwater Design and Installation Standards Manual (RISDISM) amended March 2015, Rinker Material has petitioned the permitting agencies to add this technology to the list of acceptable structural stormwater controls described in Chapter 6 – Pretreatment Practices. The applicant has submitted monitoring results and supporting information developed in accordance with the provisions of the Technology Assessment Protocol (TAPE and TARP) included in Appendix J of the RISDISM.

The Stormceptor© system is a pretreatment or retrofit device that captures both TSS and free oil (TPH) from stormwater runoff. The Stormceptor© is a vertically oriented cylindrical structure manufactured from pre-cast reinforced concrete and fiber reinforced plastic, designed to remove hydrocarbons and sediment from stormwater. This unit is approved for **in-line** as well as **off-line** use.

The manufacturer has demonstrated that this product meets the minimum water quality standards for pretreatment. It is approved for the following pollutant removals; **75% TSS. The Stormceptor is NOT recognized for removal of Pathogens, Total Phosphorus or, Nitrogen**. This device may be used as an **Oil and Grit Separator** for use on **LUHPPL sites** in accordance with section 6.6.2 of the Rhode Island Designs and Installations Standards Manual provided the following conditions are met.

I. GENERAL CERTIFICATION REQUIREMENTS

1. The STC devices listed Appendix F – "Summary Table of Stormceptor© Models" are **certified as pretreatment devices** in Rhode Island provided the device treats the flow of the first inch of runoff from the capture area unless waived by the state permitting agency.

2. The EOS 12-590 and the STC 2400 or greater models meet (**LUHPPL**) minimum requirements for sites that are classified as **LUHPPLS or MSGPs** that are required to have an oil and water separator. These models meet the minimum 500 gallon hydrocarbon storage capacity required for pretreatment.

3. The applicant must provide the RI specific manufacturers design sheet for Departmental review or provide the manufacturer's review approval. All units that capture greater than one acre of impervious cover must be reviewed by the manufacturer.

30% post-consumer fiber

4. This device is **certified as a retrofit device** in accordance with Section 1.2 and Appendix C of the RISDISM. Retrofits are allowed flexibility with regards to the standards in the RISDISM, but in general they are considered effective if they capture at least 50% of the catchment, and meet the target water quality treatment of at least the first 0.5 inches of the water quality volume.

5. The approved devices shall be located such that they are accessible for maintenance and/or emergency removal of oil or chemical spills.

II. MAINTENANCE REQUIREMENTS

1. The device must be maintained in accordance with the manufacturer's specifications and before the sediment capacity exceeds 15%.

2. The device must be maintained by a manufacturers recognized vendor, a licensed waste hauler, or a municipal employee trained to operate a vacuum truck.

3. All material removed from the unit must by properly disposed of and is the responsibility of the owner.

III. REPORTING REQUIREMENTS

1. The Vendor shall provide a listing with Latitude and Longitude of the site center point to the RIDEM Office of Water Resources of all systems within the State of Rhode Island on an annual basis.

IV. RIGHTS OF THE RIDEM AND CRMC

1. The RIDEM may suspend, modify or revoke this approval for cause, including but not limited to: non-compliance with any of the conditions or provisions of this approval, misrepresentation or failure to fully disclose all relevant data, or receipt of new information indicating that the use of the System is contrary to the public interest, public health or the environment.

2. This approval does not represent an endorsement of the System by the RIDEM. This letter of approval may be reproduced only in its entirety.

B. M Moore 2-8-16

Brian M. Moore, P.E. Date
Chief, Groundwater and Wetlands Protection

ATTACHMENT

Summary Table of Stormceptor Models

Stormceptor Model	Total Storage Volume U.S. Gal (L)	Hydrocarbon Storage Capacity U.S. Gal (L)	Max. Sediment Capacity ft^3 (L)	Water Quality Flow (cfs)	* Approx. Impervious Area (Ac)
STC 450i	470 (1,780)	86 (330)	46 (1,302)	0.283	0.38
STC 900	952 (3,600)	251 (950)	89 (2,520)	0.636	0.85
STC 1200	1,234 (4,670)	251 (950)	127 (3,596)	0.636	0.85
STC 1800	1,833 (6,940)	251 (950)	207 (5,861)	0.636	0.85
EOS 12-590	1,833 (6,940)	590 (2,233)	166 (4,707)	0.636	0.85
STC 2400	2,462 (9,320)	840 (3,180)	205 (5,805)	1.059	1.42
STC 3600	3,715 (1,406)	840 (3,180)	373 (10,562)	1.059	1.42
STC 4800	5,059 (1,950)	909 (3,440)	543 (15,376)	1.766	2.38
STC 6000	6,136 (23,230)	909 (3,440)	687 (19,453)	1.766	2.38
STC 7200	7,420 (28,090)	1,059 (4,010)	839 (23,757)	2.472	3.33
STC 11000	11,194 (42,370)	2,797 (10,590)	1,086 (30,752)	3.531	4.75
STC 13000	13,348 (50,530)	2,797 (10,590)	1,374 (38,907)	3.531	4.75
STC 16000	15,918 (60,260)	3,055 (11,560)	1,677 (47,487)	4.944	6.66

* Impervious areas are approximate only. Actual areas will vary based on site-specific conditions.

UNIVERSITY OF MASSACHUSETTS
AT AMHERST
Water Resources Research Center
Blaisdell House, UMass
310 Hicks Way
Amherst, MA 01003

Massachusetts Stormwater Evaluation Project

(413) 545-5532
(413) 545-2304 FAX
www.mastep.net

MASTEP Technology Review

Technology Name: Stormceptor

Studies Reviewed: Final NJCAT Technology Verification Stormceptor STC900 September 2004; Coventry University Study, 1996; Technology Assessment, University of Massachusetts, 1997; SeaTac Stormceptor Performance report 2001; SWAMP report Ontario 2004; Phoenix Group Edmonton report 1995; Stormceptor 1200 Field Evaluation report 2004; Applied Hydrology Associates Denver report 2003; Rinker Materials Como Park St. Paul MN report 2002; VA DOT / UVA "Testing of Ultra-Urban Stormwater Best Management Practices" report 2001.
Hydrodynamic Separator Sediment Retention Testing, Mohseni, 2010.

Date: September 17, 2013

Reviewer: Jerry Schoen

Rating: 2

Brief rationale for rating: This rating is primarily based on the 2005 NJCAT Technology Verification study. In general, this was a well-conducted test, which in large part followed NJDEP test guidelines for laboratory studies, which MASTEP considers as the laboratory equivalent of TARP field protocols. Issues of concern: the study measured suspended sediment concentration (SSC) rather than total suspended solids (TSS). Although SSC is considered by many scientists to be the preferred method, it is at odds with Massachusetts stormwater regulations, which are based on TSS treatment. Comparing SSC and TSS results is considered an inexact science. The test was conducted with higher influent sediment concentrations than is preferred, but results were fairly consistent across all ranges studied. The particle size distribution also appears to be slightly higher than the target test range. There are additional field studies that in general support the results obtained in this laboratory studies. These studies do not satisfy TARP protocols, but they do not contradict results obtained in the NJCAT study.

TARP Requirements Not Met*:

- Measurements in TSS.
- Influent sediment concentration is 100 – 300 mg/l: actual was 153-460.
- No documentation of a Quality Assurance Project Plan
- Third party studies are preferred. This was conducted by Stormceptor personnel, with sample analyses conducted by an external laboratory.

Other Comments:
* The 2010 Mohseni study evaluates the susceptibility of the Stormceptor to scouring, or washout of collected sediments. Report concluded that the unit does not scour at high flows as long as sediment depth does not exceed maintenance level.

* Criteria also based on NJDEP laboratory testing guidelines.

C

Geotechnical Data

JOHN TURNER CONSULTING

GEOTECHNICAL DATA SUMMARY

TEST PITS & INFILTRATION TESTING

PROPOSED PARKING LOT
519 Broadway
Dover, New Hampshire

Prepared for:

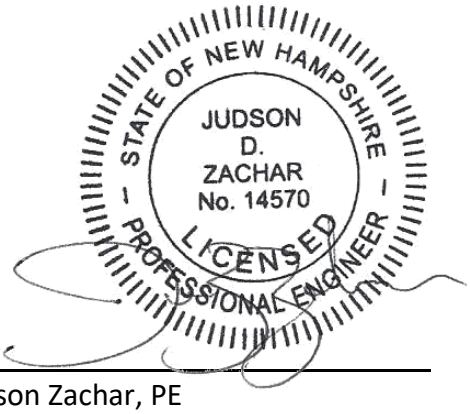
Nick Couturier
Downtown Dover Storage, LLC
Dover, NH

Prepared by:

John Turner Consulting, Inc.
19 Dover Street
Dover, NH 03820

JTC Project No. 20-04-097

December 7, 2020



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CONSULTING

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1.0 INTRODUCTION

John Turner Consulting, Inc. (JTC) is pleased to present this *Geotechnical Data Summary* for the Proposed Parking Lot at 519 Broadway in Dover, New Hampshire. The purpose of the geotechnical investigation was to obtain information on the subsurface conditions at the site and provide geotechnical engineering recommendations to support the planning, design, and construction of the proposed project. Infiltration testing was performed on November 12, 2020.

The contents of this report are subject to the attached *Limitations*.

2.0 PROJECT INFORMATION

The following subsections provide general descriptions of the site, the proposed development, and the regional geologic setting.

Site and Project Description

The subject property is a partially developed parcel of land in downtown Dover with numerous commercial and residential buildings within close proximity. The site is bounded by Broadway to the south, railroad tracks to the north, and commercial/retail businesses to the east and west.

While the project is still in the schematic state, JTC understands that the proposed development involves the construction of a new parking lot accessible from Broadway.

3.0 SUBSURFACE EXPLORATION

On November 11, 2020, a total of three (3) test pits (designated as TP-1, TP-2, and TP-3) and three shallower, adjacent infiltration test pits (IT-1, IT-2, and IT-3) were excavated by O'Brien Landscape Co. utilizing a Bobcat mini excavator. JTC set up the PVC pipes in the ground at designated depths and performed infiltration testing directly adjacent to TP-1, TP-2, and TP-3. The test pits were advanced to depths ranging from 7.5 feet to 8.0 feet below the ground surface (bgs). The test pits were backfilled with soil cuttings upon completion of the excavation. Selected soil samples were sealed in moisture-tight containers and returned to JTC's office for further review, classification, and/or geotechnical laboratory testing. Detailed records of the drilling/excavation, testing, sampling performed, and the soil, bedrock, and groundwater conditions observed at each test boring location are provided on the attached *Test Pit Logs*. A brief summary has been provided below.

4.0 SUBSURFACE CONDITIONS

Existing Fill

Soils interpreted to be Existing Fill were encountered at TP-1, TP-2, and TP-3. The Fill material consisted of dark brown, sand with silt (SP-SM) at TP-1 and TP-2. The Fill encountered at TP-3 consisted of light brown, sand (SP). This soil layer was approximately 2.5 to 5.5 feet thick.

Marine Silt and Clay

Soils interpreted to be Marine Silt and Clay were encountered below the Existing Fill layer to the full depth of excavation terminated at all test pit locations. The material typically consisted of light brown Clay (CH).

Groundwater

Groundwater was only encountered during our subsurface exploration at TP-1, near 6.0 feet. JTC estimates that this investigation occurred during a period of seasonally moderate groundwater. Site groundwater levels should be expected to fluctuate seasonally and in response to precipitation events, construction activity, site use, and adjacent site use.

5.0 GEOTECHNICAL LABORATORY TESTING

JTC recovered representative soil samples within the excavations at all test pit locations for geotechnical laboratory testing and USCS Classification at our in-house laboratory. The following tests were performed:

- 3 Moisture contents
- 3 Particle-size analyses
- 1 Atterberg

Geotechnical laboratory testing was performed in general accordance with ASTM procedures. Test results are provided on the attached *Geotechnical Laboratory Testing Reports* and are summarized in the following table.

Summary of Sieve and Moisture Analyses

Location	Depth (ft bgs)	Soil Type	% Gravel	% Sand	% Silt	In-Situ Moisture (%)
TP-3	0 - 4’	Sand (SP)	7.5	90.1	2.4	4.3
TP-2	0 – 3’	Sand (SP-SM) with silt	11.3	78.5	10.2	13.3
TP-3	4’ – 8’	Clay (CH)	0.1	12.7	87.9	23.9

6.0 INFILTRATION TESTING

JTC performed infiltration tests at each test pit location directly adjacent to the excavated test pits in order to observe the soils at deeper depths than the required infiltration depths. Essentially, three test pits were excavated 7.5’ to 8’ bgs, and the infiltration tests were performed at shallower depths (as noted in Table below) in virgin soils, therefore separate, adjacent infiltration test pits were excavated for the IT’s, utilizing corresponding labels. Testing was performed in accordance with the NHDES AoTB requirements.

Testing Setup

At the designated bottom of each of the infiltration test pits (adjacent to deeper test pits), a clean, virgin, flat surface was prepared. Then a 3-inch diameter Schedule 40 PVC pipe was slightly driven into the testing surface to seat the PVC, and the excavated spoils were placed around the outside of the PVC pipe and tamped, securing the pipe in a vertically plumb orientation. Subsequently, JTC added approximately 6-inches of gravel inside of the PVC pipe, to prevent scouring and hydraulic conductivity laterally during testing. Lastly, 2-feet of water was added inside the PVC pipe and the soils left to soak for the next 24 hours. This procedure occurred at each of the three respective infiltration testing locations.

Infiltration Test Procedure

JTC returned to the site the following day to perform infiltration testing at each of the three prepared locations. The testing procedure consisted of:

- Filling the pipe with water to a depth of 2 feet above the ground surface;
- Taking regular water level measurements over the following hour;
- Refilling the water after each hour and repeating the process for a total of four cycles.

Infiltration Test Results

The test results are summarized in the following tables:

Summary of Infiltration Testing

Infiltration Test #	Proximal Test Pit Designation	Depth (feet bgs)	Soil Type	Measured Infiltration Rate (in/hr)				Average Measured Rate (in/hr)
				Trial 1	Trial 2	Trial 3	Trial 4	
IT-1	TP-1	3.5	Sand with silt (SP-SM)	**22.1**	**19.0**	**19.7**	**22.7**	**20.9**
IT-2	TP-2	6.0	Clay (CH)	**0**	**0**	**0**	**0**	**0**
IT-3	TP-3	3.0	Sand (SP)	**24.2**	**24.4**	**21.0**	**16.7**	**21.6**

As presented in the tables above, JTC concludes that the Sand with silt (SP-SM) encountered at test location IT-1 exhibited an infiltration rate of approximately 20.9 in/hr, the Sand (SP) encountered at test location IT-3 exhibited an infiltration rate of approximately 21.6 in/hr, and the Clay (CH) in IT-2 did not allow the water to infiltrate during the time constraints of this testing program.

No factors of safety have been applied to the measured rates presented in the table. JTC recommends applying a minimum safety factor of 2 to the measured rates for design purposes.

7.0 CLOSING

We trust the contents of this memorandum are responsive to your needs at this time. Should you have any questions or require additional assistance, please do not hesitate to contact our office.

APPENDIX A: LIMITATIONS

Explorations

1. The analyses and recommendations presented in this report are based in part upon the data obtained from widely-spaced subsurface explorations. Subsurface conditions between exploration locations may vary from those encountered at the exploration locations. The nature and extent of variations between explorations may not become evident until construction. If variations appear, it will be necessary to re-evaluate the recommendations of this report.
2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretation of widely-spaced explorations and samples; actual strata transitions are probably more gradual. For specific information, refer to the individual test pit and/or boring logs.
3. Water level readings have been made in the test pits and/or test borings under conditions stated on the logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors differing from the time the measurements were made.

Review

4. It is recommended that John Turner Consulting, Inc. be given the opportunity to review final design drawings and specifications to evaluate the appropriate implementation of the geotechnical engineering recommendations provided herein.
5. In the event that any changes in the nature, design, or location of the proposed areas are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and conclusions of the report modified or verified in writing by John Turner Consulting, Inc.

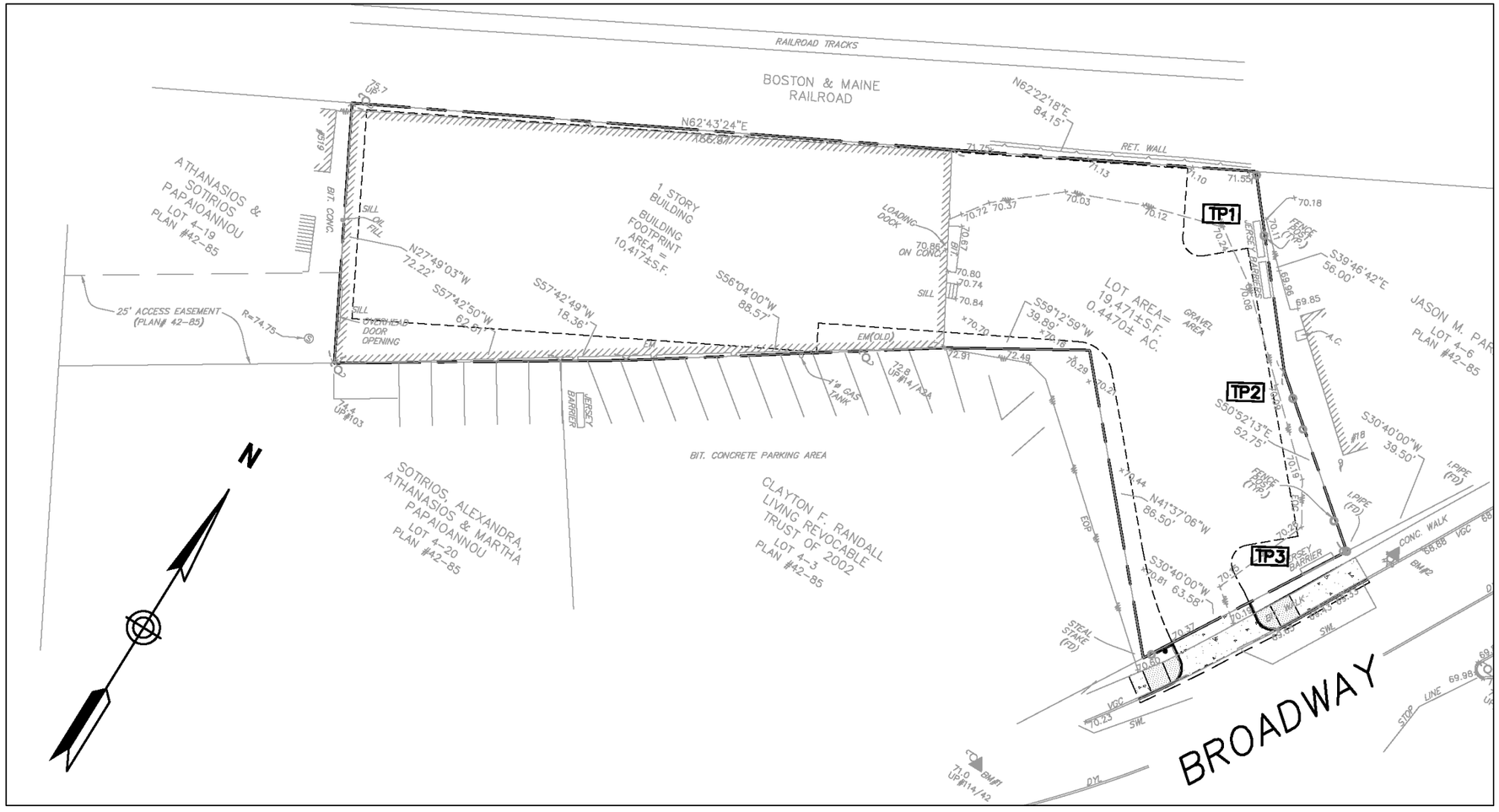
Construction

6. It is recommended that John Turner Consulting, Inc. be retained to provide geotechnical engineering services during the installation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

Use of Report

7. This report has been prepared for the exclusive use of Downtown Dover Storage, LLC for the project located at 519 Broadway in Dover, NH. All considerations are based on the available information and is in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.
8. This report has been prepared for this project by John Turner Consulting, Inc. This report was completed for preliminary design purposes and may be limited in its scope to complete an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to preliminary geotechnical design considerations.

APPENDIX B: TEST PIT & INFILTRATION TEST LOCATION PLAN



Notes:

1. Test borings were performed on Nov. 11, 2020 under the direction of JTC. Test boring locations should be considered approximate.
2. Refer to the Test Boring Logs for the subsurface conditions encountered at each boring location.
3. Basemap source(s): October 26, 2020 "Test Pits" prepared by TEC
4. Not to Scale.

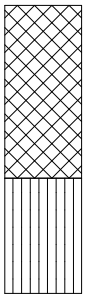
Nick Couturier **Downtown Dover Storage, LLC** **14 Broadway** **Dover, New Hampshire 03820**	**Proposed Parking Lot** **519 Broadway** **Dover, New Hampshire**
JOHN TURNER CONSULTING	**TEST BORING LOCATION PLAN**

APPENDIX C: TEST PIT LOGS & KEY TO SYMBOLS AND DESCRIPTIONS

JOHN TURNER CONSULTING

TEST PIT LOG
Test Pit No.: TP-1

PROJECT	PROJECT NO.
Downtown Dover Storage Proposed Parking lot	20-04-097
CLIENT	DATE
Downtown Dover Storage, LLC	11/11/2020
LOCATION	ELEV.
519 Broadway Dover, NH	70
EXCAVATION METHOD	LOGGER
Bobcat Excavator	JB
DEPTH TO - Water: N/A When checked: N/A	

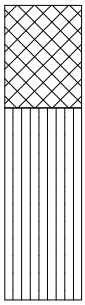
ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	USCS	DESCRIPTION
70 — 0				[FILL] Dark brown Sand with silt (SP-SM)
65 — 5				[MARINE SILT AND CLAY] Light brown clay (CH) -Ground water at 6 feet
60 — 10				
55 — 15				
50 — 20				
45 — 25				

Notes: *Test pit was backfilled with soil cuttings from the investigation.*

JOHN TURNER CONSULTING

TEST PIT LOG
Test Pit No.: TP-2

PROJECT	PROJECT NO.
Downtown Dover Storage Proposed Parking lot	20-04-097
CLIENT	DATE
Downtown Dover Storage, LLC	11/11/2020
LOCATION	ELEV.
519 Broadway Dover, NH	70
EXCAVATION METHOD	LOGGER
Bobcat Excavator	JB
DEPTH TO - Water: N/A When checked: N/A	

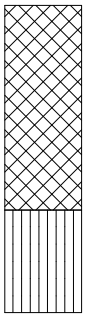
ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	USCS	DESCRIPTION
70 — 0				[FILL] Dark brown Sand with silt (SP-SM)
				[MARINE SILT AND CLAY] Light brown clay (CH)
65 — 5				
60 — 10				
55 — 15				
50 — 20				
45 — 25				

Notes: *Test pit was backfilled with soil cuttings from the investigation.*

JOHN TURNER CONSULTING

TEST PIT LOG
Test Pit No.: TP-3

PROJECT	PROJECT NO.
Downtown Dover Storage Proposed Parking lot	20-04-097
CLIENT	DATE
Downtown Dover Storage, LLC	11/11/2020
LOCATION	ELEV.
519 Broadway Dover, NH	70
EXCAVATION METHOD	LOGGER
Bobcat Excavator	JB
DEPTH TO - Water: N/A When checked: N/A	

ELEVATION/ DEPTH	SOIL SYMBOLS AND SAMPLERS: GRAPHIC	BULK	USCS	DESCRIPTION
70 / 0				[FILL] Light brown Sand (SP)
65 / 5				[MARINE SILT AND CLAY] Light brown Clay (CH)
60 / 10				
55 / 15				
50 / 20				
45 / 25				

Notes: *Test pit was backfilled with soil cuttings from the investigation.*

MAJOR DIVISIONS			SYMBOLS		TYPICAL NAMES
COARSE-GRAINED SOILS OVER 50% > No.200 SIEVE SIZE	GRAVELS	CLEAN GRAVELS WITH LESS THAN 5% FINES	GW		Well-graded gravels or gravel-sand mixtures, little or no fines
			GP		Poorly graded gravels or gravel-sand mixtures, little or no fines
	MORE THAN 1/2 OF COARSE FRACTION > No.4 SIEVE SIZE	GRAVELS WITH OVER 15% FINES	GM		Silty gravels, gravel-sand mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS	CLEAN SANDS WITH LESS THAN 5% FINES	SW		Well-graded sand or gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands, little or no fines
	MORE THAN 1/2 OF COARSE FRACTION < No.4 SIEVE SIZE	SANDS WITH OVER 15% FINES	SM		Silty sand, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS OVER 50% < No.200 SIEVE SIZE	SILTS & CLAYS LIQUID LIMIT 50% OR LESS		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS LIQUID LIMIT GREATER THAN 50%		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS			PT		Peat and other highly organic soils

JOHN TURNER CONSULTING

KEY TO SYMBOLS AND DESCRIPTIONS

TYPICAL SYMBOLS

- Shelby Tube
- Auger Cuttings
- Standard Split Spoon Sample
- 3" Split Spoon Sample
- Rock Core
- Dynamic Cone Penetrometer
- Vane Shear
- Bulk/Grab Sample
- Geoprobe Sample
- Sonic or Vibro-Core Sample
- Water Table (at time of drilling)
- Water Table (after 24 hours)

SOIL MOISTURE MODIFIERS

Term	Description
Dry	Absence of moisture; dusty, dry to touch
Moist	Damp but no visible water
Wet	Visible free water

The descriptor "damp" should not be used (use "moist").
The descriptor "saturated" should not be used (use "wet").

WELL SYMBOLS

- Recessed Cover Set in Concrete Top of Well, Recessed Pipe
- Covered Riser
- Capped Riser w/ Locking Cover
- Pipe Riser
- Concrete Seal
- Gravel Backfill
- Assorted Cuttings
- Bentonite Slurry
- Bentonite Pellets
- Silica Sand, blank PVC
- Slotted Pipe w/ Sand
- Endcap on Pipe Packed in Sand
- Silica Sand, No Pipe (End Plug)

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.75
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.75
SAND	No. 4 to No. 200	4.75 to 0.075
coarse	No. 4 to No. 10	4.75 to 2.00
medium	No. 10 to No. 40	2.00 to 0.425
fine	No. 40 to No. 200	0.425 to 0.075
SILT & CLAY	Below No. 200	Below 0.075

RELATIVE DENSITY/CONSISTENCY

Gravel, Sand, and Silt (nonplastic)		Silt (plastic) and Clay		
N-Value	Relative Density	N-Value	Su	Consistency
0 - 4	Very Loose	0 - 2	0 - 250	Very Soft
5 - 10	Loose	3 - 4	251 - 500	Soft
11-30	Medium Dense	5 - 8	501 - 1000	Medium Stiff
31 - 50	Dense	9 - 15	1001 - 2000	Stiff
51 +	Very Dense	16 - 30	2001 - 4000	Very Stiff
		31 +	4001+	Hard

Standard Penetration Testing (SPT) N_{60} based on blows per 12 inches.
WR = Weight of Rods; WH = Weight of Hammer

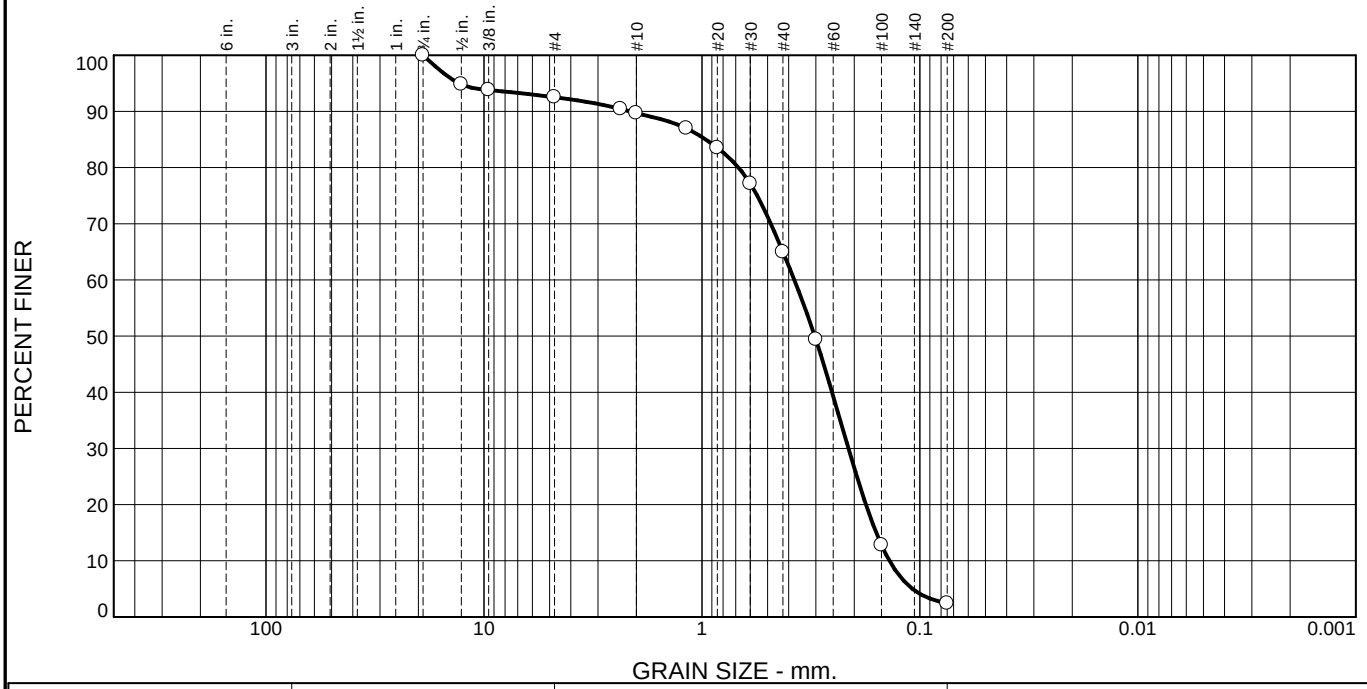
PERCENT OR PORTIONS OF SOIL

Term	Description
Parting:	> 1/16 in.
Seam:	0.5 in. to 1/16 in.
Layer:	12 in. to 0.5 in.
Stratum:	> 12 in.
Pocket:	Small erratic deposit
Lens:	Lenticular deposit
Occasional:	One or less per foot of thickness
Frequent	More than one per foot of thickness
Varved	Alternating seams or layers of silt and/or clay and sometimes f. sand

REFERENCE: UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488-93

APPENDIX D: LABORATORY TEST RESULTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	7.5	2.8	24.7	62.6	2.4	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
1/2"	94.8		
.375	93.8		
#4	92.5		
#8	90.4		
#10	89.7		
#16	87.0		
#20	83.5		
#30	77.1		
#40	65.0		
#50	49.4		
#100	12.8		
#200	2.4		

* (no specification provided)

Material Description

Light brown sand

Atterberg Limits (ASTM D 4318)

PL= - **LL=** - **PI=** -

Classification

USCS (D 2487)= SP **AASHTO (M 145)=** -

Coefficients

D_{90}= 2.1381 D_{85}= 0.9618 D_{60}= 0.3769
D_{50}= 0.3035 D_{30}= 0.2127 D_{15}= 0.1586
D_{10}= 0.1379 C_u= 2.73 C_c= 0.87

Remarks

Moisture content 4.3%

Date Received: 11/19/2020 **Date Tested:** 11/30/2020

Tested By: Matt Watson

Checked By: Rob Faria

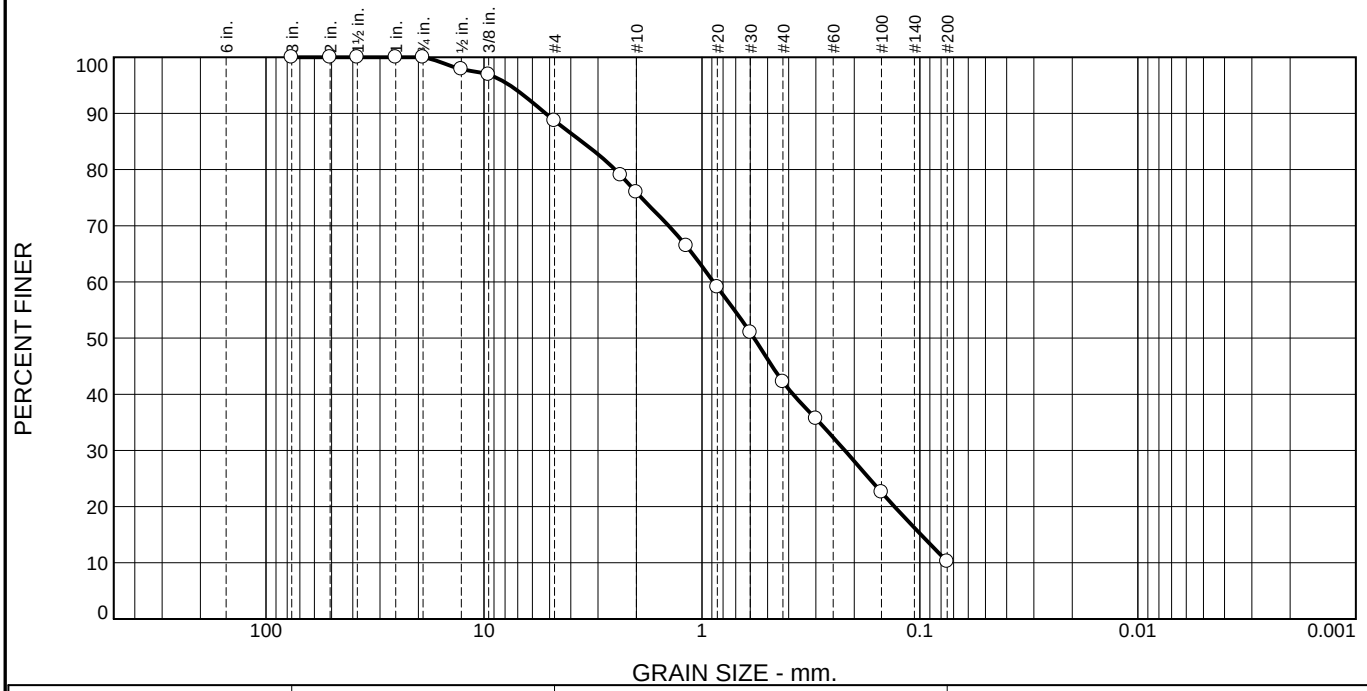
Title: Lab Manager

Location: TP-3 middle **Date Sampled:** 11/19/2020
Sample Number: 3520-711 **Depth:** 4'

JOHN TURNER CONSULTING

Client: Downtown Dover Storage, LLC
Project: Proposed Parking Area
14 Broadway Dover, NH
Project No: 20-04-097 **Figure** 711A

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	11.3	12.7	33.8	32.0	10.2	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100.0		
2	100.0		
1.5	100.0		
1	100.0		
.75	100.0		
1/2"	97.9		
.375	96.9		
#4	88.7		
#8	79.0		
#10	76.0		
#16	66.4		
#20	59.1		
#30	51.0		
#40	42.2		
#50	35.7		
#100	22.5		
#200	10.2		

* (no specification provided)

Material Description

Dark brown sand with silt

Atterberg Limits (ASTM D 4318)

PL= - **LL=** - **PI=** -

Classification

USCS (D 2487)= SP-SM **AASHTO (M 145)=** -

Coefficients

D_{90}= 5.2145 D_{85}= 3.5599 D_{60}= 0.8858
D_{50}= 0.5767 D_{30}= 0.2211 D_{15}= 0.0988
D_{10}= C_u= C_c=

Remarks

Moisture content 13.3%

Date Received: 11/19/2020 **Date Tested:** 11/30/2020

Tested By: Matt Watson

Checked By: Rob Faria

Title: Lab Manager

Location: TP-2 top
Sample Number: 3520-712 **Depth:** 0-3' bgs

Date Sampled: 11/19/2020

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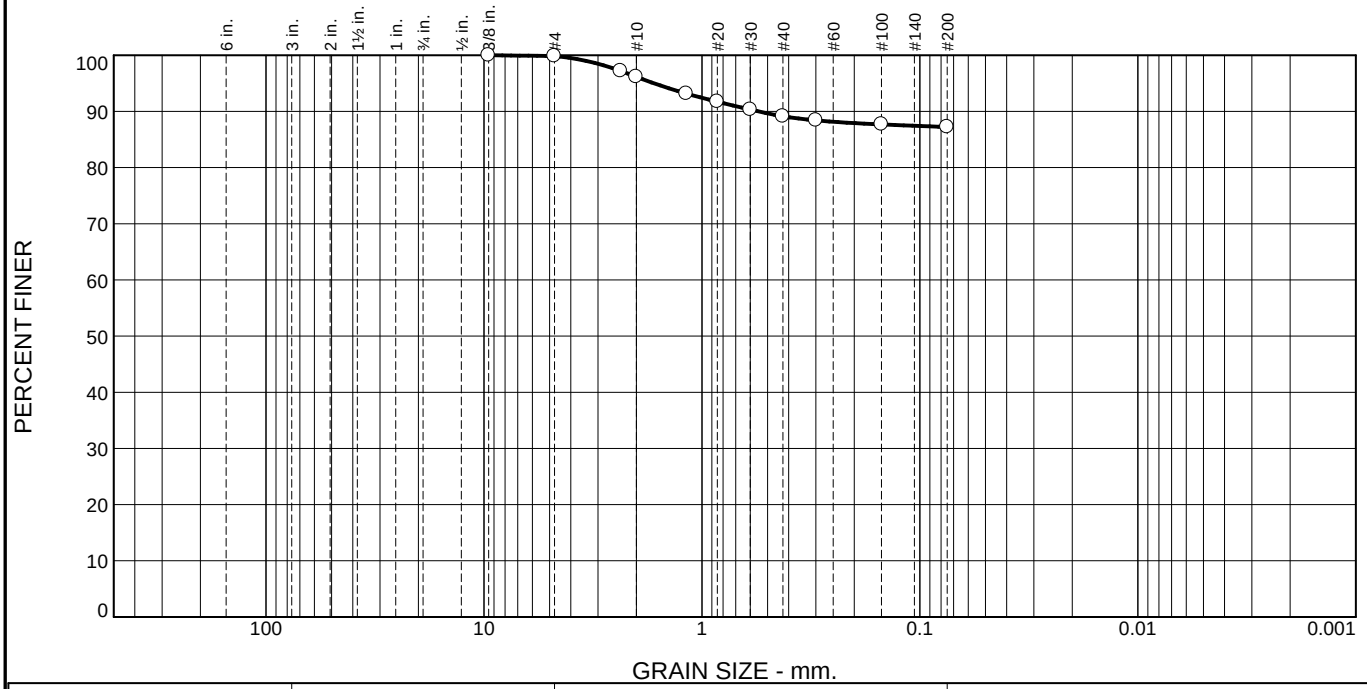
Client: Downtown Dover Storage, LLC
Project: Proposed Parking Area
14 Broadway Dover, NH
Project No: 20-04-097 **Figure** 712A

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	3.7	7.1	1.9	87.2	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.375	100.0		
#4	99.9		
#8	97.2		
#10	96.2		
#16	93.2		
#20	91.7		
#30	90.3		
#40	89.1		
#50	88.4		
#100	87.7		
#200	87.2		

* (no specification provided)

Material Description

Light brown clay

Atterberg Limits (ASTM D 4318)

PL= 25 **LL=** 54 **PI=** 29

Classification

USCS (D 2487)= CH **AASHTO (M 145)=** A-7-6(28)

Coefficients

D_{90}= 0.5499 D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content 23.9%

Date Received: 11/19/2020 **Date Tested:** 12/1/2020

Tested By: Matt Watson

Checked By: Rob Faria

Title: Lab Manager

Location: TP-3 bottom
Sample Number: 3520-715 **Depth:** 8'

Date Sampled: 11/19/2020

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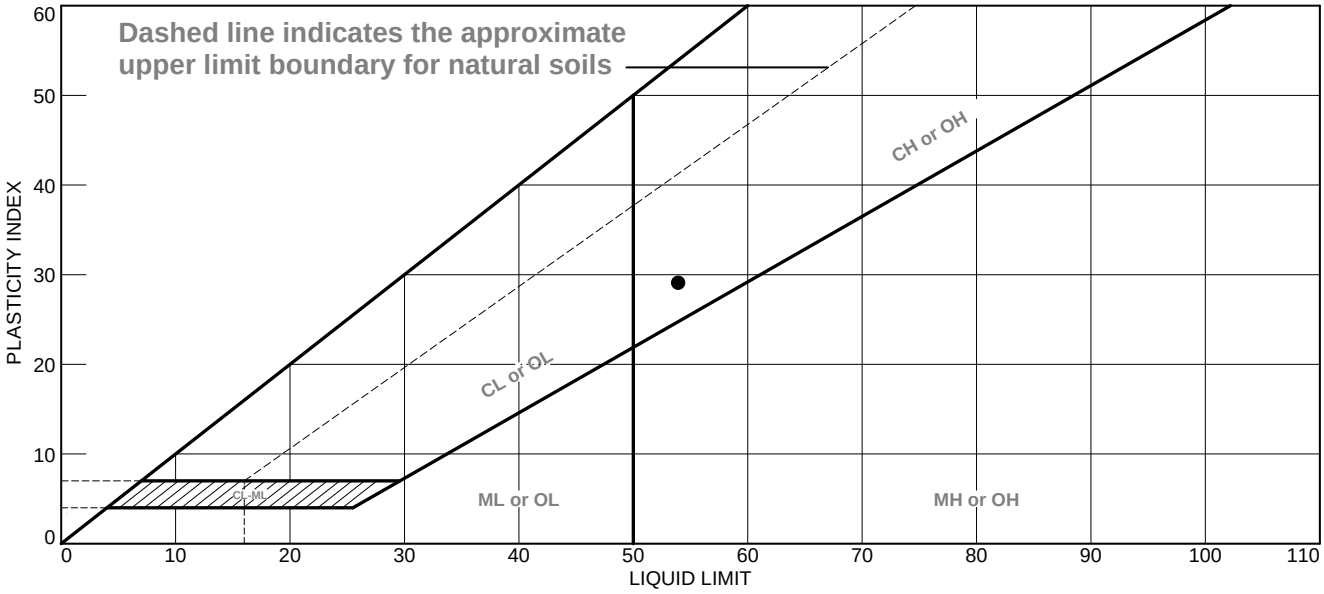
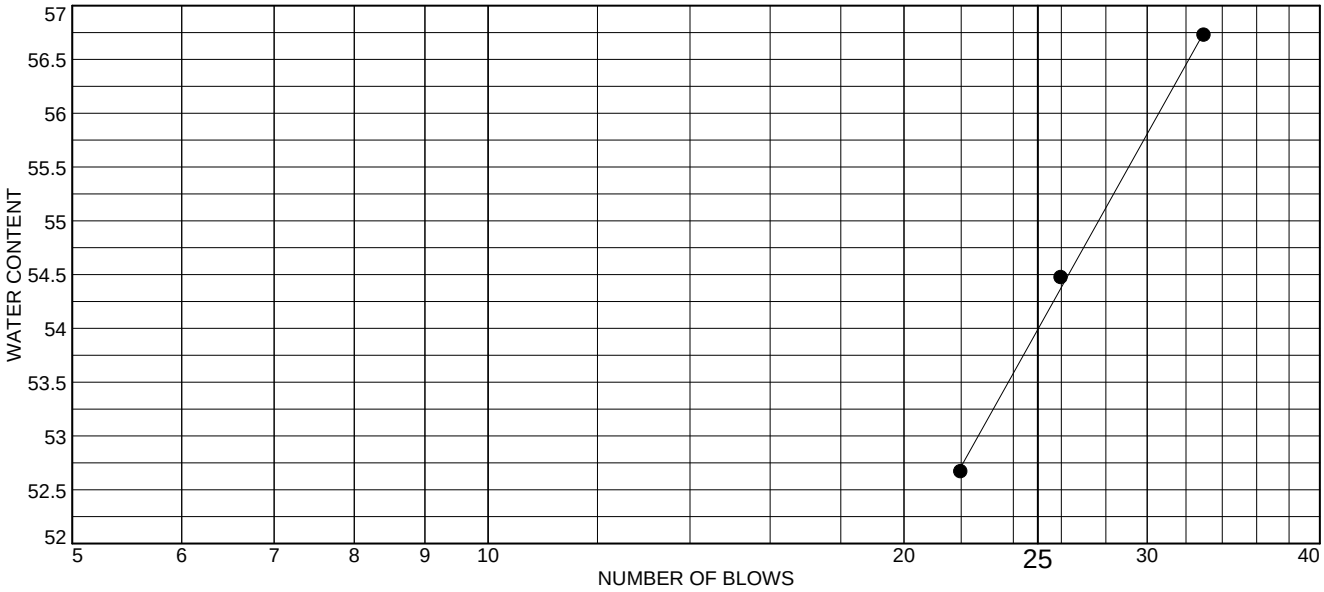
Client: Downtown Dover Storage, LLC
Project: Proposed Parking Area
14 Broadway Dover, NH
Project No: 20-04-097 **Figure** 713A

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Light brown clay	54	25	29	89.1	87.2	CH

Project No. 20-04-097 **Client:** Downtown Dover Storage, LLC

Project: Proposed Parking Area

14 Broadway Dover, NH

Location: TP-3 bottom

Sample Number: 3520-715 **Depth:** 8'

Remarks:

JOHN TURNER CONSULTING

Figure 715B

Tested By: Rob Faria

APPENDIX E: SITE PHOTOGRAPHS

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CONSULTING

Downtown Dover Storage, LLC
519 Broadway
Dover, New Hampshire

SITE PHOTOGRAPHS

Bobcat Mini Excavator Used to Dig Test Pits

Brick Shown in Fill at TP-3

Test Pit 2 Being Excavated

Soil Profile of Test Pit 2

Soil Profile of Test Pit 1

Site Layout

D

Operation & Maintenance Plan

Stormwater Management Operations and Maintenance Plan

PROPOSED RESIDENTIAL DEVELOPMENT

Assessor's Map 5, Lot 5
14 Broadway
Dover, New Hampshire

Prepared for:

Downtown Dover Storage, LLC
42 L Dover Point Road
Dover, NH 03820

Prepared by:

TEC, Inc.
169 Ocean Boulevard
Unit 101 PO BOX 249
Hampton, NH 03842

November 23, 2021

Stormwater Management Operation and Maintenance Plan
November 23, 2021

Name of Applicant: **Downtown Dover Storage, LLC**
Name of Project: **Proposed Residential Development – 14 Broadway**
Location: **Dover, New Hampshire 03820**

A detailed, written log of all scheduled preventative and corrective maintenance performed for the stormwater management measures must be kept by the Applicant, including a record of all inspections and copies of maintenance-related work orders. Attachment 1, "Inspection and Maintenance Check List" shall be maintained as a record of regularly scheduled inspection and maintenance items as outlined below for every year. Maintenance required and actions taken shall be recorded in Attachment 2, Inspection and Maintenance Log". The funding, operation, and maintenance of all stormwater management Best Management Practices (BMPs) shall be provided by the Owner or their appointee.

Maintenance routine and schedule: Routine inspections will be conducted monthly and thorough investigations will be conducted twice a year. Tasks that are common to all systems include regular removal of accumulated sediments, floatables and debris. Inspections will occur after every major storm event for the first six (6) months after construction. Inspections will be conducted by a person trained in stormwater management systems and experienced in drainage design.

Annual reports will be prepared detailing the status of the stormwater system and the maintenance performed. A copy of the annual report will be sent to the City of Dover Conservation Commission, if requested.

The Owner agrees to comply with a minimum maintenance schedule as follows:

1. **Monthly inspection for damaged or clogged catch basin and area drain grates**
   Catch basin grates shall be inspected and cleared of debris to maintain inlet capacity.

2. **Semi-annual cleaning of catch basins**
   Sumps and inlets shall be cleaned four times per year and inspected monthly. All sediments shall be properly handled and disposed of in accordance with local, state and federal guidelines and regulations.

3. **Semi-annual cleaning of Stormceptor**
   Inspection of the Stormceptor interior should be done after major storm events, particularly in the first year of operation. It is recommended that material in the treatment chamber of pumped out by a vacuum truck semiannually, or when the sediment and pollutant loads reach about 15 percent of the total storage.

4. Inspection and cleaning of drainage pipes and manholes

Drainage pipes and manhole structures shall be inspected and cleaned of sediment at least every five (5) years or as required to maintain adequate functionality of the stormwater conveyance system. All sediments shall be properly handled and disposed of in accordance with local, state and federal guidelines and regulations.

5. Grass Landscaping

The grass landscaping will be inspected after every major storm event for the two (2) months after seeding to ensure functionality. Thereafter, inspections should take place every six (6) months in the spring and fall and after severe storm events. Grass and mulched landscaping showing signs of wear and erosion will be re-loamed/re-seeded or re-mulched as necessary to prevent further erosion from taking place.

6. Snow Removal

Snow will be stored within the landscape islands onsite.

The Long-Term Pollution Prevention Plan

The Owner agrees to comply with the following Long-Term Pollution Prevention Plan to ensure long-term stormwater quality discharge from the site:

- Good housekeeping practices: The project will be maintained by the Town DPW, including snow removal, de-icing, and BMP inspection and maintenance.

- Provisions for storing materials and waste products inside or under cover: No materials or waste products will be stored on-site.

- Vehicle washing controls: Vehicle washing is not anticipated as a reasonably foreseeable use of the site.

- Requirements for routine inspections and maintenance of stormwater BMPs: The Owner will be responsible for providing the necessary inspections and maintenance for the stormwater BMPs.

- Spill prevention and response plans: There are no proposed uses at the site that would provide an opportunity for a spill of oil or hazardous materials, other than a sudden, catastrophic, vehicle failure. If a vehicle release is the result of an accident, the police and fire department will respond and address any release.

- Provisions for maintenance of lawns, gardens, and other landscaped areas: The Owner will provide long-term maintenance for the landscaped areas.

- Requirements for storage and use of fertilizers, herbicides, and pesticides: At

this time there would be no foreseeable need for fertilizers, herbicides, and pesticides.

- Provisions for operation and management of septic systems: Proposed Parking Lot, no septic systems are proposed.

- Provisions for solid waste management: The proposed project is a Parking Lot project, and any foreseeable solid waste would be litter. The Owner is responsible for litter clean up.

- Snow disposal and plowing plans relative to Wetland Resource Areas: Snow will be stored at the westerly edge of the parking lot temporarily.

- Street sweeping schedules: The Owner will be responsible for semi-annual street sweeping with sweepings concentrated in the Spring and Fall.

- Provisions for prevention of illicit discharges to the stormwater management system: Only stormwater is proposed to be conveyed through the stormwater management system. No illicit materials will be permitted. The owner will be responsible to maintain this system.

- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL: Not applicable

- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan: The Owner shall appoint trained personnel to be involved with implementing Long-Term Pollution Prevention Plan.

- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan:

  Downtown Dover Storage, LLC
  42 L Dover Point Road
  Dover, New Hampshire 03820

INSPECTION AND MAINTENANCE CHECK LIST –
14 Broadway, Dover, NH

For Year: _____

	Inspection Item	Inspection Frequency* Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1	Catch Basin Grates												
2	Stormceptor												
3	Drainage Pipes and Manholes	at least every 5 years											
4	Grass Landscaping												

	Maintenance Item	Maintenance Frequency* Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1	Roadway Sweeping												
2	Catch Basin Cleaning												
3	Stormceptor												
4	Drainage Pipes and Manholes	at least every 5 years											

* Actual time of inspecting and maintaining items may vary. Chart shall be used to indicate frequency of events

** This chart shall be used in conjunction with the attached "Stormwater Management Operations and Maintenance Plan", dated November 23, 2021

Name of Applicant: Downtown Dover Storage, LLC

Name of Project: Proposed Residential Development – 14 Broadway

Location: 14 Broadway, Dover, NH 03820

Inspection and Maintenance Log

Inspection No.	Date	Inspections Performed	Maintenance Actions Taken
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Additional Sheets shall be added as needed

Proposed Residential Development

Site Plans

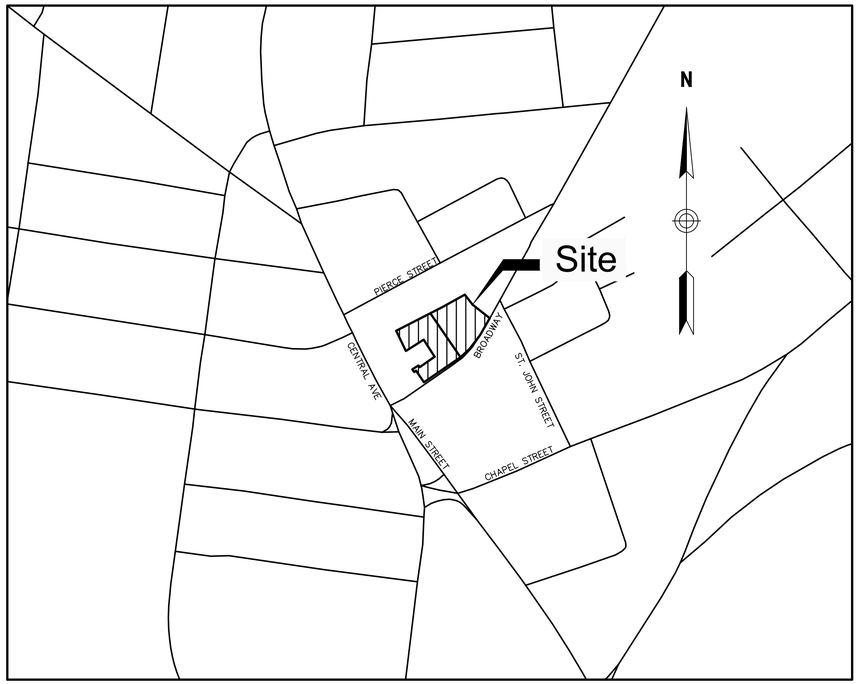
14 Broadway
Dover, NH 03820

Site Plans Index

No.	Drawing Title	Latest Issue
C-1	Title & Index Sheet	May 2, 2024
C-2	Legend & General Notes	May 2, 2024
C-3	Neighborhood Plan	May 2, 2024
C-4	Demolition Plan	May 2, 2024
C-5	Layout & Materials Plan	May 2, 2024
C-6	Grading & Drainage Plan	May 2, 2024
C-7	Utility Plan	May 2, 2024
C-8	Erosion & Sediment Control Plan	May 2, 2024
C-9	Construction Details	May 2, 2024
C-10	Construction Details	May 2, 2024
C-11	Construction Details	May 2, 2024
C-12	Construction Details	May 2, 2024
C-13	Construction Details	May 2, 2024

Reference Plans Index

No.	Drawing Title	Latest Issue
1	Existing Condition Plan (Hancock Associates)	February 19, 2021
2	Lot Line Adjustment Plan (Hancock Associates)	June 30, 2022
3	Architectural Plans (Lassel Architects)	April 1, 2024
4	Lighting Plan (SK & Associates)	August 26, 2021
5	Landscape Plan (Terra Firma)	November 24, 2021



LOCATION MAP

250 0 250 500

SCALE IN FEET

ORIGINAL PLANNING BOARD FILE #: P21-29
NEW PLANNING BOARD FILE #: WAIV-2024-0004

TEC
The Engineering Corp
TEC, Inc.
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DESIGNED BY	CPR
DRAWN BY	MWP
CHECKED BY	CPR
DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

14 Broadway
Dover, NH 03820

DRAWING TITLE

Title & General Notes

STATE OF NEW HAMPSHIRE
CHRISTOPHER P. RAYMOND
No. 16305
LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440

TEC CAD FILE N1440_COV

DRAWING NO. C-1

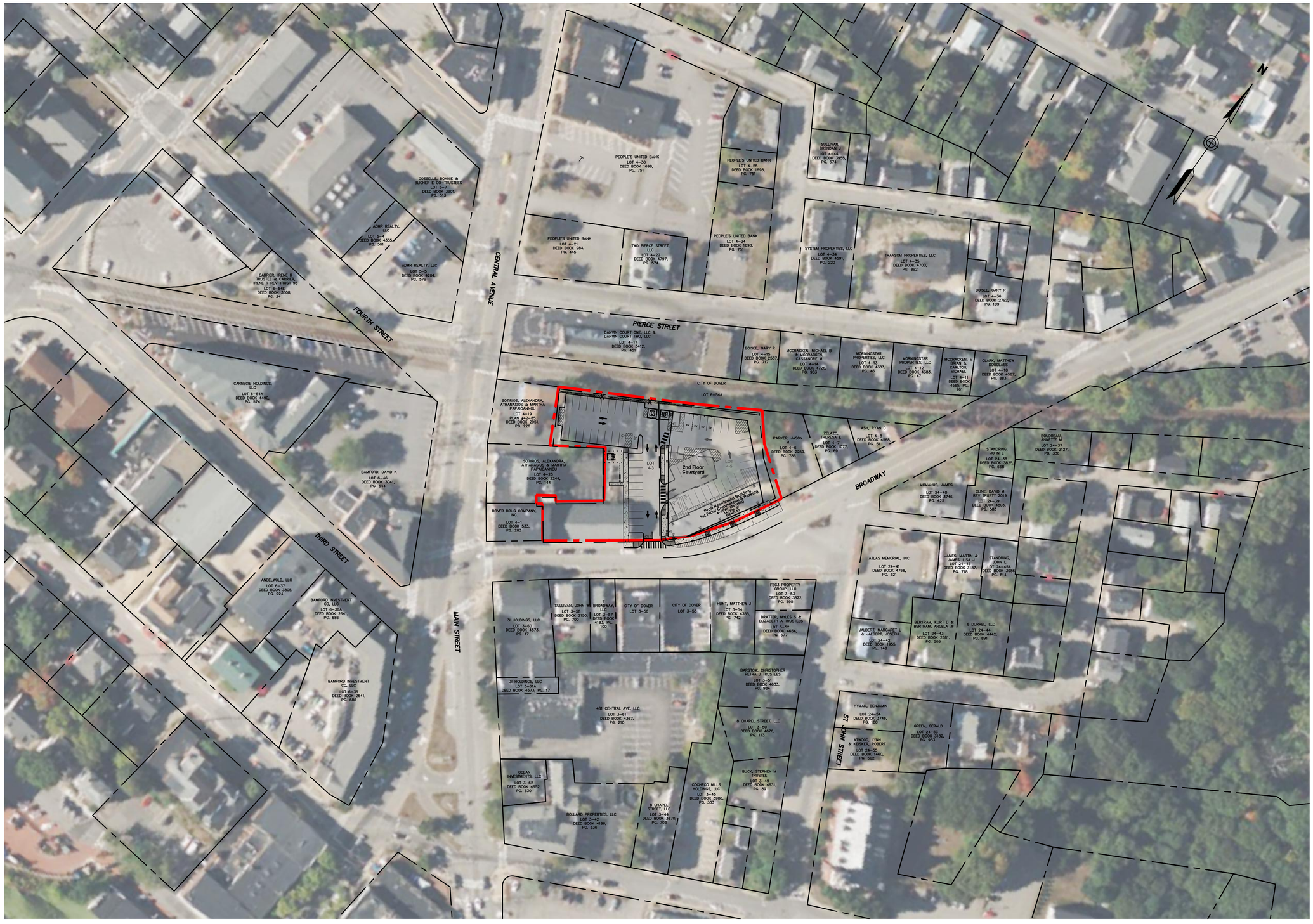
SHEET 1 OF 13

GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AND THE LOCAL MUNICIPAL WATER & SEWER DEPT. AT LEAST 72 HOURS BEFORE EXCAVATING.
2. PRIOR TO THE COMMENCEMENT OF GENERAL CONSTRUCTION, THE CONTRACTOR MUST INSTALL SOIL EROSION CONTROL AND ANY STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MEASURES NECESSARY, AS INDICATED ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN AND IN ACCORDANCE WITH APPLICABLE AND/OR APPROPRIATE AGENCIES' GUIDELINES TO PREVENT SEDIMENT AND/OR LOOSE DEBRIS FROM WASHING ONTO ADJACENT PROPERTIES OR THE RIGHT OF WAY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS. A 6-FOOT TEMPORARY CHAINLINK FENCE SHALL BE PROVIDED AROUND ALL CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL LEAVE NO UNSECURED OPEN EXCAVATIONS.
4. HANDICAP ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT/ARCHITECTURAL ACCESS BOARD (ADA/AAB), AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
5. WORK WITHIN THE RIGHT-OF-WAY MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS AND STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DEPARTMENT, HIGHWAY DIVISION, AND/OR STATE DOT HIGHWAY DEPARTMENT.
6. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALK, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
7. WHEN APPLICABLE, OWNER/ OPERATOR MUST FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE AND/OR REQUIRED TIMEFRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES MUST NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED FROM GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN). THE CONTRACTOR MUST STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
8. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
9. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
10. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
11. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
12. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF-SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO THE OWNER.
13. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY TEC, IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
14. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS, THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION.
15. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE PROFESSIONAL OF RECORD AND TEC THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
16. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.
17. CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
18. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND TEC, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REPAIRED DUE TO DIMENSIONS, MEASUREMENTS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING THE PROFESSIONAL OF RECORD AND TEC WRITTEN NOTIFICATION OF SAME AND (B) PROFESSIONAL OF RECORD AND TEC, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
19. ALL DIMENSIONS SHOWN ARE TO BOTTOM FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, EXCEPT WHEN DIMENSION IS TO A PROPERTY LINE, STAKE OUT OF LOCATIONS OF INLETS, LIGHT POLES, ETC. MUST BE PERFORMED IN STRICT ACCORDANCE WITH THE DETAILS, UNLESS NOTED CLEARLY OTHERWISE.
20. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
21. WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL WIDTHS DO NOT REPRESENT THE ACTUAL WIDTH OF THE PROPOSED WALL, RATHER THEY ARE AN ASSUMPTION BASED ON WALL TYPE AND WALL HEIGHT. WALL FOOTINGS AND /OR FOUNDATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT AN APPROPRIATELY LICENSED PROFESSIONAL DESIGNS ALL WALLS SHOWN HEREON AND PRIOR TO CONSTRUCTION. REFER TO GRADING NOTES REGARDING RETAINING WALL DESIGN.
22. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
23. THE CONTRACTOR MUST REPAIR, AT THE CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND MUST BEAR ALL COSTS ASSOCIATED WITH THE SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE CONDITIONS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY, IN WRITING, THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN TEC'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, TEC WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND TEC HAS NO RESPONSIBILITY FOR SAME.
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE PROFESSIONAL OF RECORD AND TEC FOR ALL DEVIATIONS WITHIN THE PROFESSIONAL OF RECORD'S AND TEC SCOPE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE PROFESSIONAL OF RECORD AND TEC PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.
26. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
27. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
28. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.
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 7AM-6PM, SATURDAY 9AM-4PM. NO SITE WORK SHALL BE DONE ON FEDERAL HOLIDAYS.
31. ALL CONSTRUCTION DETAILS 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 SPECIFICATIONS FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATIONS SHALL APPLY.
32. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
33. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
34. 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 ENGINEER'S OFFICE UPON COMPLETION OF PROJECT IF A STREET IS PROPOSED FOR CITY ACCEPTANCE. 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.
35. NO FEDERAL AND STATE PERMITS ARE REQUIRED FOR THE SUBJECT PROPERTY.
36. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM. MOST RECENTLY REVISED VERSION UTILIZING THE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. HTTP://WWW.UNH.EDU/UNHSC/PTAPP
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 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 PURCHASES TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
39. TOPOGRAPHIC SURVEY PERFORMED BY HANCOCK ASSOCIATES ON 4/18/2020.
40. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
41. 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 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.
44. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1 AND NH RSA 155-A:5)
45. BUILDING ADDRESSES, INCLUDING AP AND UNIT NUMBERS SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
46. A PRECONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
47. APPLICANT AND CONTRACTOR SHALL REVIEW DOVER CONSTRUCTION GUIDELINES PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING WITH CITY STAFF.
48. CONTRACTOR SHALL FOLLOW TO THE CONSTRUCTION SEQUENCING IDENTIFIED WITH THE PLANNING BOARD APPROVED PLAN SET. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.

GENERAL DRAINAGE & UTILITY NOTES

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES.
2. THE CONTRACTOR MUST FIELD VERIFY THE PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO CONFIRM EXACT DEPTH, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT. FAILURE TO PROVIDE OR PERFORM THE ABOVE PRIOR TO PERFORMING ANY WORK SHALL NOT BE GROUNDS FOR EXTRA PAYMENTS TO THE CONTRACTOR.
4. AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT, CURBS, AND EARTHWORK SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES, AND JOINTS.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES, AS REQUIRED.
6. UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT FINISH GRADE UNLESS OTHERWISE NOTED.
7. INSTALL ALL UTILITIES (INCLUDING CONCRETE PADS) PER UTILITY COMPANY, DPW, AND STATE STANDARDS.
8. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE EXACTLY AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND THE CONTRACTOR MUST COORDINATE SAME WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS. WHEN THE PROJECT DOES NOT HAVE GEOTECHNICAL RECOMMENDATIONS, FILL AND COMPACTION MUST COMPLY WITH APPLICABLE REQUIREMENTS AND SPECIFICATIONS. THE PROFESSIONAL OF RECORD AND TEC ARE NOT RESPONSIBLE FOR DESIGN OF TRENCH BACKFILL OR FOR COMPACTION REQUIREMENTS.
9. EXISTING TREES AND SHRUBS OUTSIDE THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON PRIOR APPROVAL OF THE OWNER.
10. DURING THE INSTALLATION OF SANITARY, STORM, AND ALL UTILITIES, THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION TO IDENTIFY THE AS-INSTALLED LOCATIONS OF ALL UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR MUST CAREFULLY NOTE ANY INSTALLATIONS THAT DEVIATE, IN ANY RESPECT, FROM THE INFORMATION CONTAINED IN THESE PLANS. THIS RECORD MUST BE KEPT ON A CLEAN COPY OF THE APPROPRIATE PLAN(S), WHICH THE CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER IMMEDIATELY UPON THE COMPLETION OF WORK.
11. THE CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SANITARY, WATER AND STORM SYSTEMS, ARE REPAIRED IN ACCORDANCE WITH REFERENCED MUNICIPAL, COUNTY AND OR STATE DOT DETAILS AS APPLICABLE. THE CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
12. ALL WORK ASSOCIATED WITH UTILITY POLES, OVERHEAD WIRES AND ANY/ALL APPURTENANCES SHALL BE COORDINATED BY THE GC WITH THE LOCAL UTILITY COMPANIES PRIOR TO THE ORDERING OF ANY MATERIALS. THIS MAY INCLUDE BUT IS NOT LIMITED TO THE REMOVAL, INSTALLATION, RELOCATION OR PROTECTION OF ANY BRACING, GUY WIRES, OVERHEAD WIRES, ETC. AS MAY BE REQUIRED TO ACCOMMODATE THE PROJECT.
13. ALL SANITARY SEWER PIPE SHALL BE SDR-35 PVC UNLESS OTHERWISE NOTED.
14. INSULATE SANITARY PIPES WHERE INVERT DEPTH IS LESS THAN FIVE (5) FEET BELOW FINISHED GRADE.
15. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION (AT NO ADDITIONAL COST TO THE OWNER) BY THE CONTRACTOR.
16. STORM AND SANITARY PIPE LENGTHS INDICATED ARE NOMINAL AND ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS INDICATED ON THE PLANS OTHERWISE.
17. ALL WATER AND SEWER UTILITY WORK SHALL CONFORM TO LOCAL DPW, WATER DIVISION SPECIFICATIONS, DETAILS, RULES AND REGULATIONS AND HAVE FIVE (5) FEET OF MINIMUM COVER. GAS, ELECTRIC, AND TELEPHONE LOCATIONS AND ROUTING ARE SUBJECT TO REVIEW AND APPROVAL BY THE APPROPRIATE UTILITY COMPANIES.
18. UNLESS INDICATED OTHERWISE, ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC., MUST BE INSTALLED UNDERGROUND. ALL NEW UTILITY SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
19. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON ARCHITECTURAL PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF SAME BASED UPON FINAL ARCHITECTURAL PLANS.
20. FIRE ALARM CONNECTION LOCATIONS AND ROUTING ARE SUBJECT TO REVIEW AND APPROVAL BY THE FIRE DEPARTMENT OR BUILDING INSPECTOR.
21. THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL BARRIERS AFTER REVEGETATION OF DISTURBED AREAS AND AFTER APPROVAL BY THE LOCAL APPROVING AUTHORITY.
22. EXCAVATION REQUIRED IN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
23. THE CONTRACTOR SHALL SCHEDULE THEIR WORK TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PUDDLING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF THE FINISH SUBGRADE AND/OR SURFACE PAVING.
24. WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER COMPANY. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF APPLICATION.
25. GAS METERS MUST BE PROTECTED AS REQUIRED BY THE JURISDICTIONAL GAS PROVIDER.
26. 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 TO ANY EARTH DISTURBING ACTIVITY OCCURS.
27. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
28. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO COMMENCING EARTH DISTURBANCE.
29. 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.
30. FIRE DEPARTMENT ACCESS ROADS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
31. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
32. 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.
33. 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.
34. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NPFA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
35. 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.
36. DESIGN ENGINEER SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
37. 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.
38. DESIGN ENGINEER OF RECORD SHAL



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DESIGNED BY	CPR
DRAWN BY	MWP
CHECKED BY	CPR
DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

14 Broadway
Dover, NH 03820

DRAWING TITLE

Neighborhood Plan

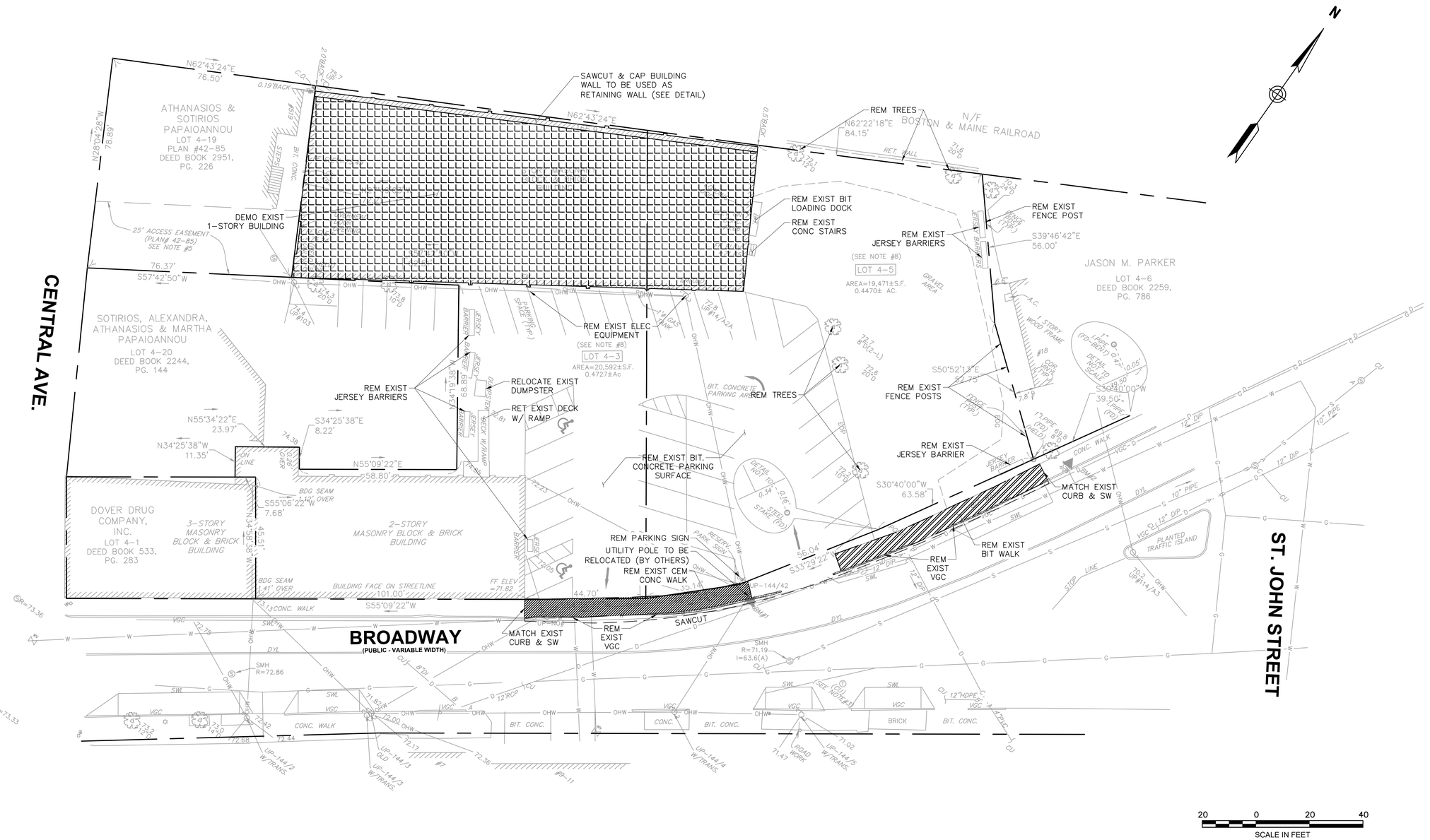
STATE OF NEW HAMPSHIRE – CHRISTOPHER P. RAYMOND No.16305 – LICENSED PROFESSIONAL ENGINEER –

PROJECT NO. N1440

TEC CAD FILE N1440_NBHD

DRAWING NO. C-3

SHEET 3 OF 13


CENTRAL AVE.
ST. JOHN STREET
BROADWAY
(PUBLIC - VARIABLE WIDTH)
ATHANASIOS & SOTIRIOS PAPAIOANNOU
LOT 4–19
PLAN #42–85
DEED BOOK 2951, PG. 226
SOTIRIOS, ALEXANDRA, ATHANASIOS & MARTHA PAPAIOANNOU
LOT 4–20
DEED BOOK 2244, PG. 144
DOVER DRUG COMPANY, INC.
LOT 4–1
DEED BOOK 533, PG. 283
3–STORY MASONRY BLOCK & BRICK BUILDING
2–STORY MASONRY BLOCK & BRICK BUILDING
BOSTON & MAINE RAILROAD
N/F
JASON M. PARKER
LOT 4–6
DEED BOOK 2259, PG. 786
LOT 4–5
AREA=19,471±S.F.
0.4470± AC.
LOT 4–3
AREA=20,592±S.F.
0.4727±Ac
(SEE NOTE #8)
SAWCUT & CAP BUILDING WALL TO BE USED AS RETAINING WALL (SEE DETAIL)
DEMO EXIST 1–STORY BUILDING
25' ACCESS EASEMENT (PLAN# 42–85) SEE NOTE #5
REM EXIST BIT LOADING DOCK
REM EXIST CONC STAIRS
REM EXIST JERSEY BARRIERS
REM EXIST FENCE POST
REM EXIST ELEC EQUIPMENT
REM EXIST JERSEY BARRIERS
RELOCATE EXIST DUMPSTER
RET EXIST DECK W/ RAMP
REM TREES
REM EXIST FENCE POSTS
REM EXIST JERSEY BARRIER
REM EXIST BIT. CONCRETE PARKING SURFACE
REM PARKING SIGN
UTILITY POLE TO BE RELOCATED (BY OTHERS)
REM EXIST CEM CONC WALK
MATCH EXIST CURB & SW
REM EXIST VGC
REM EXIST BIT WALK
SAWCUT
PLANTED TRAFFIC ISLAND
STOP LINE
N62°43'24"E 76.50'
N28°04'28"W 78.89'
S57°42'50"W 76.37'
N62°43'24"E
N62°22'18"E 84.15'
S39°46'42"E 56.00'
S50°52'13"E 39.75'
S30°40'00"W 39.50'
S30°40'00"W 63.58'
S33°29'22"E 56.04'
N34°19'58"W 68.89'
N55°34'22"E 23.97'
S34°25'38"E 8.22'
N34°25'38"W 11.35'
N55°09'22"E 58.80'
S55°06'22"W 7.68'
N34°25'38"W 45.01'
BUILDING FACE ON STREETLINE
101.00'
S55°09'22"W
14.79'
FF ELEV =71.82
SMH R=72.86
SMH R=71.19 I=63.6(A)
SMH #1
SMH #7
SMH #9–11
UP–144/42
UP–144/2 W/TRANS.
UP–144/3 OLD
UP–144/3 W/TRANS.
UP–144/4 W/TRANS.
UP–144/5 W/TRANS.
UP–144/A3
UP–147/A2A
UP #103
UP #14/A3
#18
#20
#22
#24
#26
#28
#30
#32
#34
#36
#38
#40
#42
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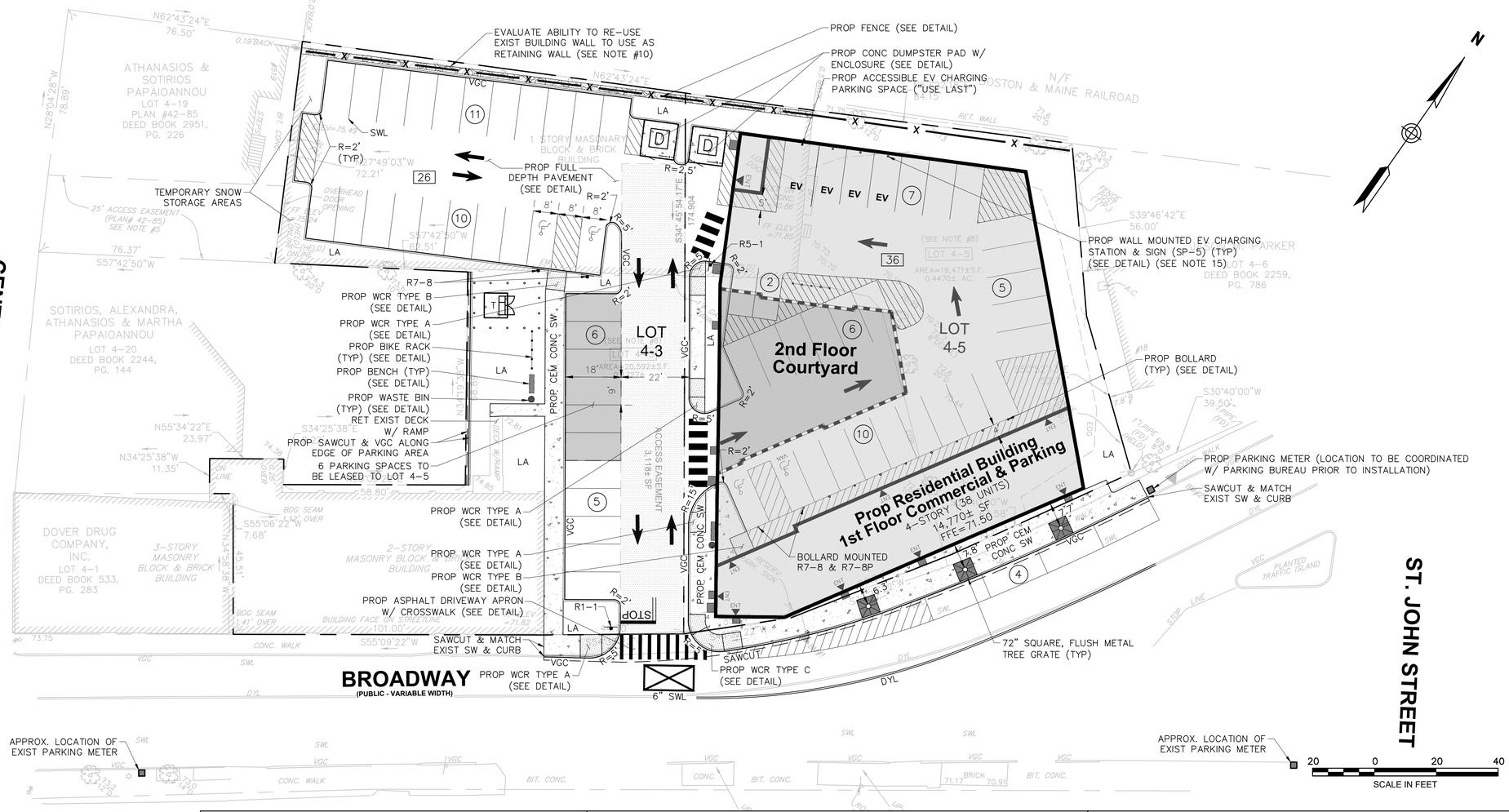

NOTES:

1. THE INTENT OF THIS PLAN IS TO CONSTRUCT A 14,770± SF RESIDENTIAL BUILDING W/ FIRST FLOOR COMMERCIAL, OFFICE AND PARKING ON LOT 4-5, AND REDEVELOP THE EXISTING PARKING AREA ON LOT 4-3.
2. THE PARCELS ARE SHOWN AS LOT NO. 3 & 5, MAP 4 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
3. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 4719, PAGE NO. 976.
4. CONDITIONAL USE PERMIT GRANTED ON 12/15/2021 TO ALLOW FOR LESS THAN 20% REQUIRED AREA TO BE NON-RESIDENTIAL. THE SITE PROPOSES 6% OF NON-RESIDENTIAL USES.
5. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY HANCOCK ASSOCIATES ON 4/18/2020 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
6. BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
7. SNOW TO BE TEMPORARILY STORED AT WEST EDGE OF LOT BEFORE BEING TRUCKED OFF SITE.
8. 25' ACCESS EASEMENT (PLAN #42-85) TO EXPIRE.
9. FINAL LOCATION OF BENCHES, BIKE RACKS, AND WASTE BINS TO BE COORDINATED PRIOR TO OCCUPANCY.
10. IF EXISTING WALL CAN BE REUSED, IT WILL BE EVALUATED AND SEALED BY A PROFESSIONAL ENGINEER. IF DETERMINED TO BE UNUSUITABLE FOR REUSE, A NEW SEGMENTAL BLOCK RETAINING WALL SHALL BE INSTALLED, SEE DETAIL.
11. ALL BUILDING & PARKING SIGNAGE TO BE COORDINATED W/ BUILDING DEPARTMENT PRIOR TO OCCUPANCY.
12. FINAL LOCATION OF NECESSARY ACCESS, PARKING & UTILITY EASEMENTS WILL BE COORDINATED, DOCUMENTED & RECORDED PRIOR TO OCCUPANCY.
13. ALL DETAILS FOR PROPOSED LANDSCAPING CAN BE SEEN ON THE ATTACHED LANDSCAPING PLANS (SHEETS L1-L3).
14. DUMPSTER AND ENCLOSURE SHALL COMPLY W/ ALL APPLICABLE ADA STANDARDS.
15. 4 EV PARKING SPACES ARE PROVIDED W/ INFRASTRUCTURE IN PLACE FOR FUTURE EXPANSION OF TOTAL EV PARKING SPACES.
16. STRIPED AREA IN FRONT OF BUILDING ALONG BROADWAY SHALL BE UTILIZED AS A COMMERCIAL LAODING ZONE.
17. ALL TREES SHALL HAVE A MINIMUM CALIPER OF THREE (3) INCHES.
18. ANTI-GRAFFITI PAINT SHALL BE UTILIZED ON BUILDING FACADE.
19. TRAIN AND OTHER URBAN NOISES ARE TO BE EXPECTED.

ZONING TABLE

ZONING DISTRICT	CBD GENERAL SUB-DISTRICT	
PROPOSED USES	1ST FLOOR: 3,262 SF NON-RESIDENTIAL & 11,508 SF PARKING 2ND FLOOR: 12,103 SF (12 UNITS) RESIDENTIAL & 2,757 SF COURTYARD 3RD FLOOR: 12,103 SF (13 UNITS) RESIDENTIAL 4TH FLOOR: 12,103 SF (13 UNITS) RESIDENTIAL	
PROPOSED USE ALLOWABLE BY	BY RIGHT	
DIMENSIONAL REQUIREMENTS	**REQUIRED**	**PROVIDED**
LOT SIZE	N/A	19,471 SF
MINIMUM LOT COVERAGE	75%	76.4%
MINIMUM FRONTAGE BUILD-OUT	70%	83%
FRONT PRIMARY BUILD TO LINE	4.3 FT*	1 FT
FRONT SECONDARY BUILD TO LINE	N/A	N/A
SIDE SETBACK	0 FT (MIN), 24 FT (MAX)	10 FT
REAR SETBACK	10 FT (MIN)	10 FT
BUILDING HEIGHT	5-STORY (MAX), 2-STORY (MIN)	4-STORY

* AVERAGE OF ALL FRONT SETBACKS OF LOTS WITHIN THE SAME ZONE LOCATED ON THE SAME SIDE OF THE STREET, 250 FT IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE.

PARKING TABLE

EXISTING PARKING	LOT 4-3: 40 SPACES	
MAXIMUM (MAX) & RECOMMENDED (REC) PARKING	LOT 4-1: 7 RESIDENTIAL UNITS & 3,241 SF RETAIL=21 SPACES (MAX)*, 16 SPACES (REC)** LOT 4-3: 4,692 SF OFFICE=16 SPACES (MAX)*, 11 SPACES (REC)** LOT 4-5: 38 RESIDENTIAL UNITS & 1,790± SF COMMERCIAL=71 SPACES (MAX)*, 46 SPACES (REC)** TOTAL MAXIMUM PARKING=108 SPACES* TOTAL RECOMMENDED PARKING=73 SPACES**	
PROPOSED PARKING	LOT 4-1 & 4-3: 26 SPACES LOT 4-5: 36 SPACES (INCL. 6 SPACES FROM LOT 4-3)*** BROADWAY: 4 SPACES DOVER HOUSING AUTHORITY (18 CHAPEL STREET): 10 SPACES*** TOTAL PROPOSED PARKING (LOT 4-5)=50 SPACES (1 SPACE/UNIT, 5 GUEST SPACES, 5 COMMERCIAL SPACES & 2 RETAIL SPACES) TOTAL PROPOSED PARKING=76 SPACES	
PARKING REQUIREMENTS	**REQUIRED**	**PROVIDED**
HANDICAP ACCESSIBLE SPACES	4	4
AISLE WIDTH	22 FT	22 FT
STALL WIDTH	9 FT	9 FT
LENGTH OF SPACE	18 FT	18 FT

* MAX REQUIRED PARKING SPACES WERE CALCULATED USING THE CITY OF DOVER MAXIMUM PARKING NUMBERS.
** RECOMMENDED PARKING SPACES WERE CONSERVATIVELY CALCULATED USING ITE PARKING GENERATION NUMBERS FOR THE EXISTING AND PROPOSED USES.
*** 6 PARKING SPACES TO BE LEASED FROM LOT 4-3 TO LOT 4-5, AND 10 PARKING SPACES TO BE LEASED FROM DOVER HOUSING AUTHORITY (18 CHAPEL STREET) TO LOT 4-5.

TRAFFIC SIGN SUMMARY

ID NUMBER	SIZE OF SIGN (in) WIDTH	SIZE OF SIGN (in) HEIGHT	LEGEND	TEXT DIMENSIONS (in) LETTER HEIGHT	TEXT DIMENSIONS (in) VERTICAL SPACING	TEXT DIMENSIONS (in) ROUTE MARKER	NUMBER OF SIGNS REQUIRED	NUMBER OF POSTS REQUIRED
R1-1	30	30	STOP	SEE MUTCD SIGN STANDARDS			1	1
R7-8	12	24	RESERVED PARKING				4	4
R5-1	30	30	DO NOT ENTER				1	1
SP-5	24	30	Electric Vehicles Only / Active Charging Required				4	4
N/A	12	18	ACCESSIBLE / USE LAST				1	1

* HANDICAP PARKING SIGNS SHALL BE IN ACCORDANCE WITH CITY OF DOVER STANDARDS, AND ADA REGULATIONS.
** VAN SIGNS SHALL BE LOCATED AT ALL ADA SPACES. PER ADA ACCESSIBILITY GUIDELINES (AMENDED 2010) ANY SPACE WITH A VAN SIGN IS NOT INTENDED TO BE RESTRICTED ONLY TO VANS

PLANNING BOARD FILE #: WAIV-2024-0004

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DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1. TRC Comments 4/5/2024
2. TRC 2 Comments 5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

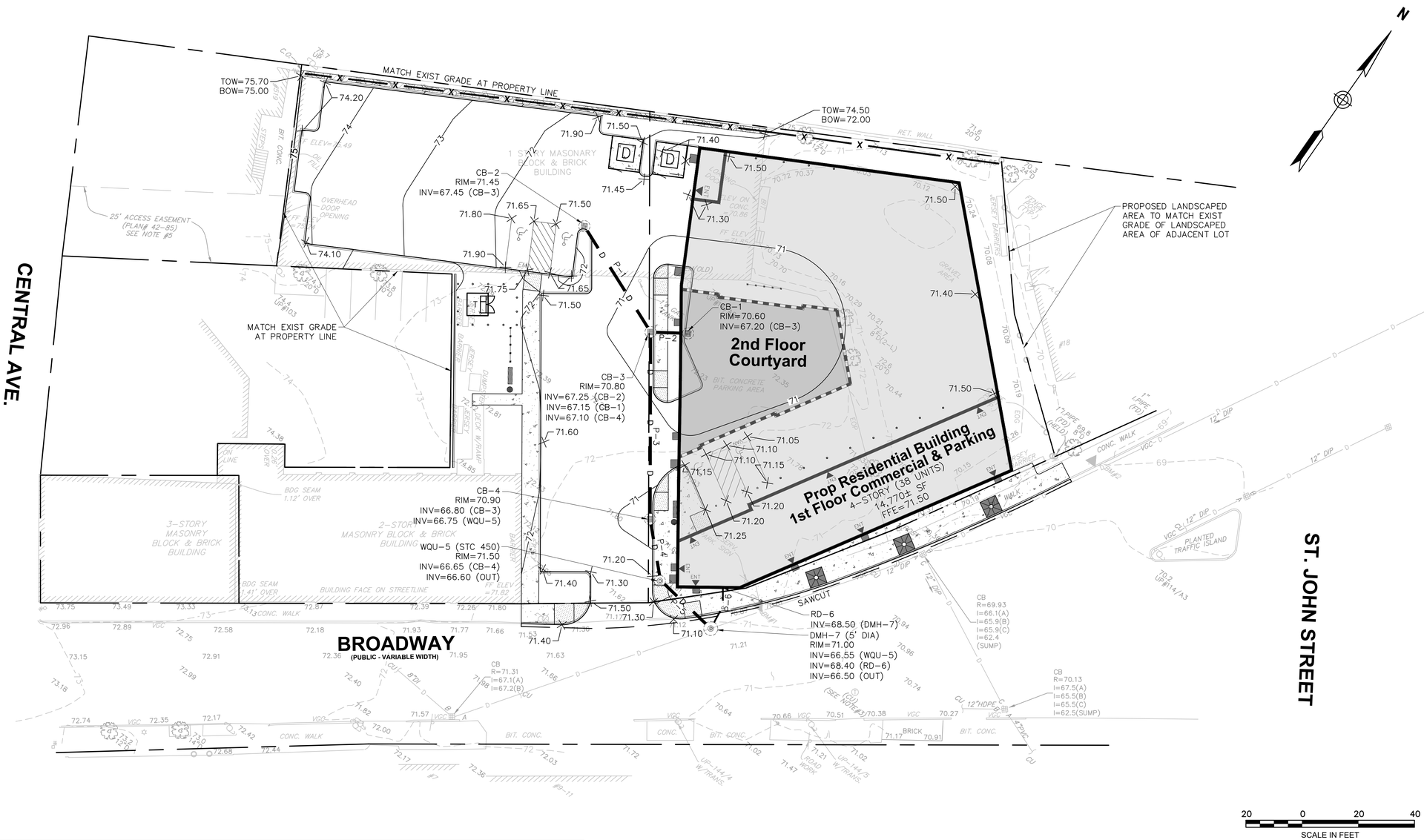
14 Broadway
Dover, NH 03820

DRAWING TITLE

Layout & Materials Plan

STATE OF NEW HAMPSHIRE
CHRISTOPHER P. RAYMOND No.16305
LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440
TEC CAD FILE N1440_LM
DRAWING NO. C-5



LOT COVERAGE TABLE

EXISTING USE	10,417 SF WAREHOUSE W/ PARKING AREA	
PROPOSED USE	14,900± SF RESIDENTIAL BUILDING W/ FIRST FLOOR COMMERCIAL USE SPACE AND PARKING	
LOT COVERAGE	EXISTING	PROPOSED
BUILDING	10,753 SF (30.7%)	14,778 SF (42.2%)
GRAVEL	6,761 SF (19.2%)	N/A (0.0%)
PAVEMENT	14,744 SF (42.2%)	11,940 SF (34.1%)
SIDEWALK	N/A (0.0%)	2,500 SF (7.1%)
TOTAL IMPERVIOUS AREA	**32,2581 SF (92.1%)**	**29,218 SF (83.4%)**
LANDSCAPING	2,774 SF (7.9%)	5,814 SF (16.6%)
TOTAL PERVIOUS AREA	**2,774 SF (7.9%)**	**5,814 SF (16.6%)**
TOTAL AREA	**35,032 (100%)**	**35,032 (100%)**

* LOT COVERAGE CALCULATIONS BASED ON TOTAL AREAS OF BOTH LOTS 4-3 AND 4-5.

DRAINAGE PIPING TABLE

	SIZE	SIZE (FT)	SLOPE (FT/FT)
P-1	12" HDPE	40'-6"	0.005 (0.5%)
P-2	12" HDPE	8'-6"	0.005 (0.5%)
P-3	12" HDPE	62'-6"	0.005 (0.5%)
P-4	12" HDPE	18'-4"	0.005 (0.5%)
P-5	12" HDPE	20'-4"	0.0025 (0.25%)
P-6	6" HDPE	13'-0"	0.01 (1.0%)

NOTES:

1. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA, COMMUNITY PANEL NUMBER 33017C0330E, EFFECTIVE DATE: SEPTEMBER 30, 2015.
2. ALL PROPOSED DRAINAGE PIPE TO BE 12" HDPE UNLESS OTHERWISE NOTED.
3. ALL CATCH BASINS SHALL BE DEEP SUMP AND HOODED.
4. CONTRACTOR SHALL VERIFY W/ CAMERA THE SIZE, CONDITION & MATERIAL OF DRAIN PIPE IN BROADWAY PRIOR TO CONSTRUCTION.

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Ardsley, NY 10502

REVISIONS

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2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

14 Broadway
Dover, NH 03820

DRAWING TITLE

Grading & Drainage Plan

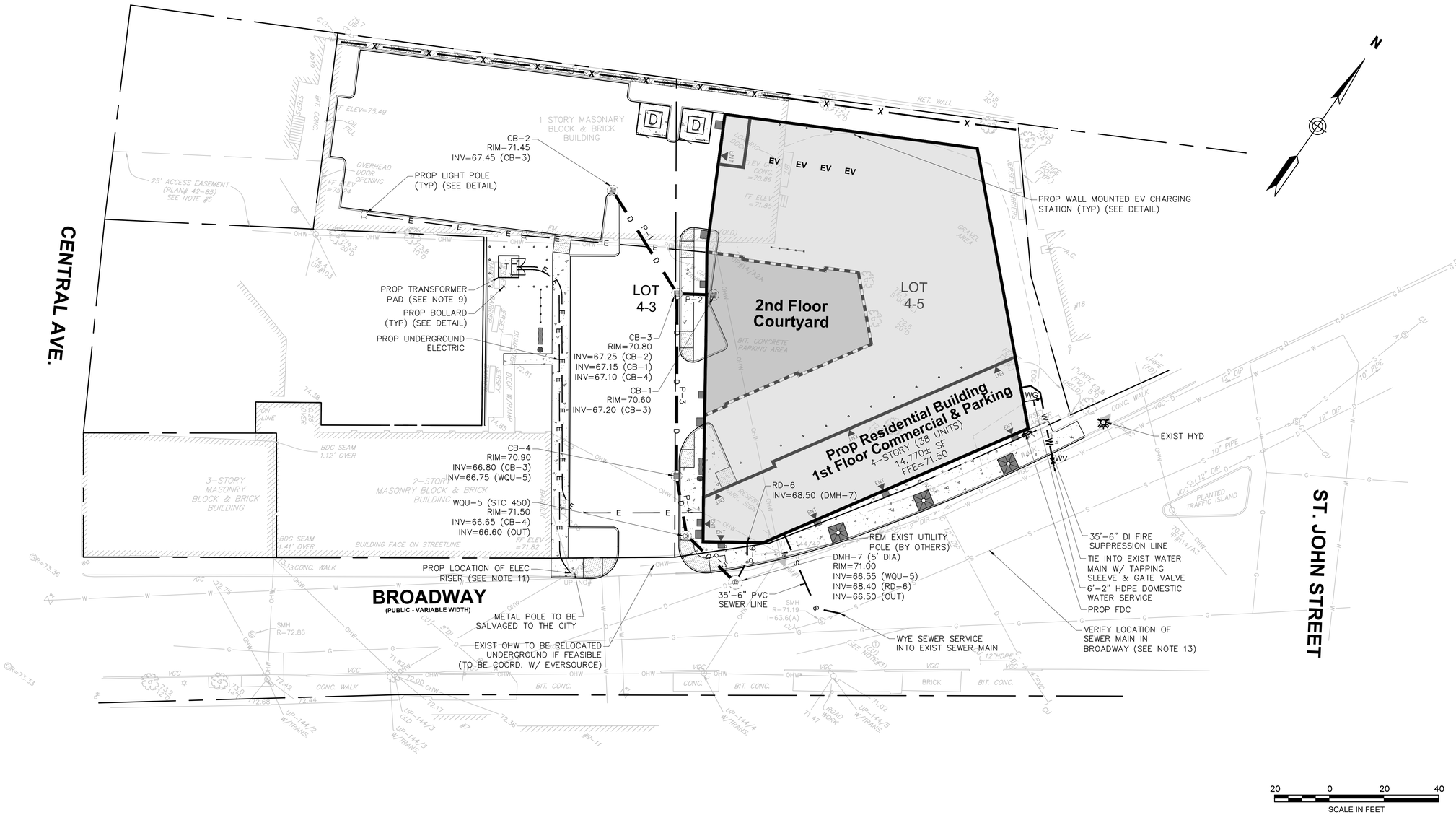
STATE OF NEW HAMPSHIRE
CHRISTOPHER P. RAYMOND No.16305 LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440

TEC CAD FILE N1440_GD

DRAWING NO. C-6

SHEET 6 OF 13



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UTILITY SERVICE PROVIDER		DRAINAGE PIPING TABLE			
WATER	CITY OF DOVER		SIZE	SIZE (FT)	SLOPE (FT/FT)
SEWER	CITY OF DOVER	P-1	12" HDPE	40'-6"	0.005 (0.5%)
GAS	UNITIL	P-2	12" HDPE	8'-6"	0.005 (0.5%)
ELECTRIC	EVERSOURCE	P-3	12" HDPE	62'-6"	0.005 (0.5%)
INTERNET	COMCAST	P-4	12" HDPE	18'-4"	0.005 (0.5%)
TELEPHONE	CONSOLIDATED COMMUNICATIONS	P-5	12" HDPE	20'-4"	0.0025 (0.25%)
		P-6	6" HDPE	13'-0"	0.01 (1.0%)

NOTES:
1. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND WHERE FEASIBLE THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
2. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
3. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
4. PLEASE SEE LIGHTING PLAN (SL1) FOR MOUNTING HEIGHT OF FIXTURES.
5. THE UTILITY POLE TO BE REMOVED AND RELOCATED WILL BE COORDINATED W/ EVERSOURCE.
6. ALL PROPOSED UTILITY LOCATIONS ARE APPROXIMATE, FINAL TIE IN LOCATIONS TO BE COORDINATED W/ CITY OF DOVER MUNICIPAL SERVICES DEPARTMENT AND PRIVATE UTILITY COMPANIES.
7. LOCATION, SIZE & TYPE OF EXISTING DRAIN LINE LOCATED IN BROADWAY SHALL BE VERIFIED BY FIELD OBSERVATIONS OR CAMERA PRIOR TO INSTALLATION OF CONNECTION MANHOLE IN BROADWAY.
8. UTILITIES TO EXISTING 2-STORY MASONRY STRUCTURE ON LOT 4-3 TO REMAIN IN PLACE.
9. FINAL LOCATION OF ALL UTILITIES INCLUDING TRANSFORMER ARE APPROXIMATE AND ARE TO BE COORDINATED W/ THEIR RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
10. FINAL LOCATION OF FDC TO BE COORDINATED W/ BUILDING OFFICIAL AND FIRE DEPARTMENT PRIOR TO ISSUANCE OF BUILDING PERMIT.
11. PROPOSED RISER FOR ELECTRIC SERVICE IS APPROXIMATE. FINAL LOCATION TO BE COORDINATED W/ EVERSOUCE AND THE CITY OF DOVER.
12. FINAL LOCATION OF TIE IN TO DRAINAGE LINE IN BROADWAY TO BE COORDINATED W/ CITY OF DOVER DPW.
13. CONTRACTOR SHALL VERIFY W/ CAMERA THE LOCATION AND SIZE OF SEWER MAIN IN BROADWAY. FINAL TIE IN LOCATION (WYE) SHALL BE MADE ACCORDINGLY.
14. LOCATIONS OF UTILITY SERVICES TO THE EXISTING BUILDING FROM CENTRAL AND BROADWAY SHALL BE VERIFIED PRIOR TO CONSTRUCTION AND CUT AND CAPPED AT THE MAIN.
15. WATER CONNECTION SHALL UTILIZE A STAINLESS STEEL TAPPING SLEEVE.

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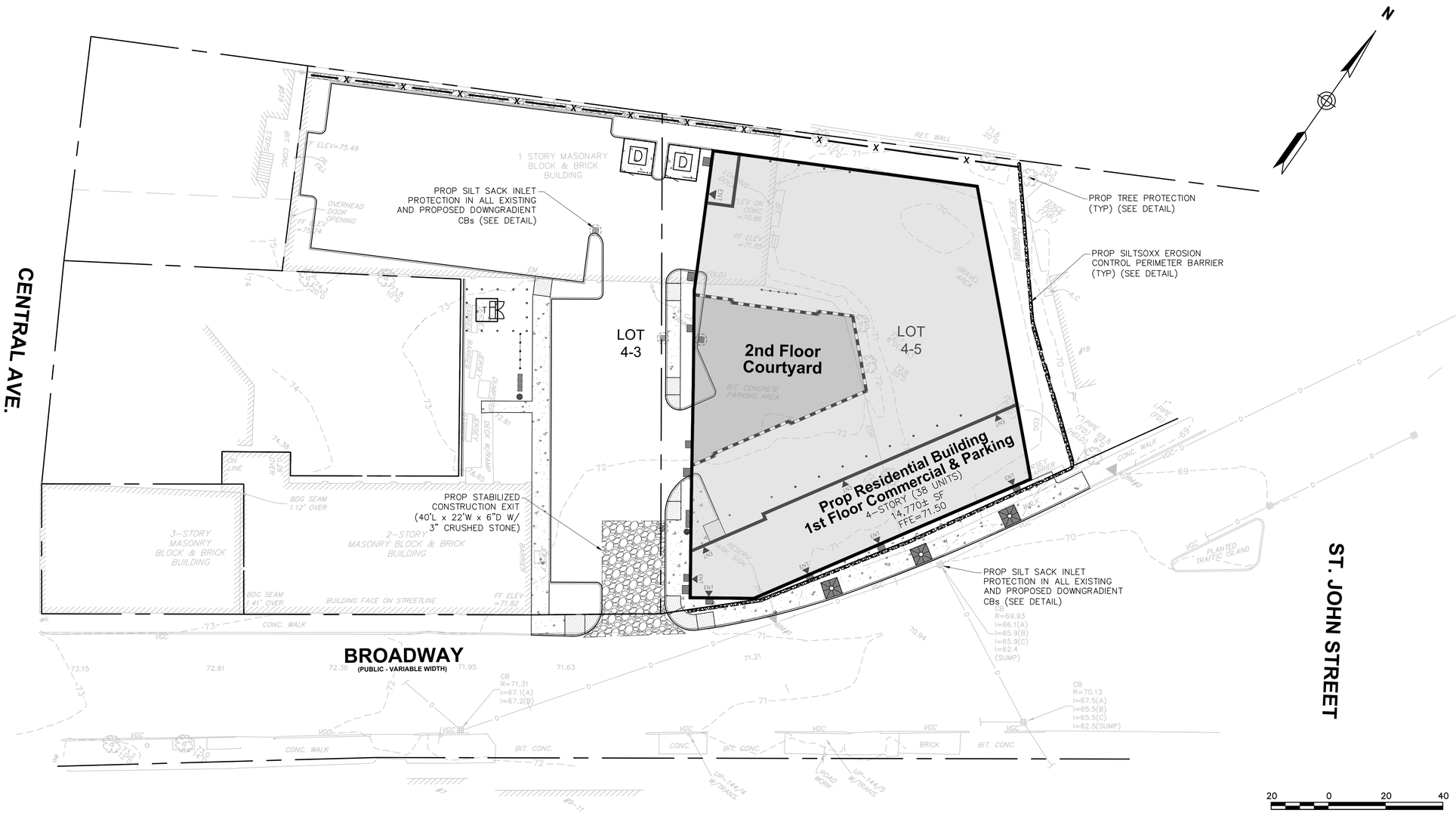
PROJECT TITLE
Proposed Residential Development at 14 Broadway

PROJECT LOCATION
14 Broadway
Dover, NH 03820

DRAWING TITLE
Utility Plan

STATE OF NEW HAMPSHIRE
CHRISTOPHER P. RAYMOND No.16305 LICENSED
PROFESSIONAL ENGINEER

PROJECT NO. N1440
TEC CAD FILE N1440_UT
DRAWING NO. C-7
SHEET 7 OF 13



NOTES:

1. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ON THE SITE, THE DEVELOPER SHALL PHYSICALLY MARK LIMITS OF NO LAND DISTURBANCE ON THE SITE WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE, SO THAT WORKERS CAN SEE THE AREA TO BE PROTECTED.
2. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND BE PROVIDED FOR CONSTRUCTION SEQUENCING INCLUDING TEMPORARY MEASURES. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
3. 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.
4. RUNOFF SHALL BE CONTROLLED AND CONVEYED INTO STORM DRAINS AND OTHER OUTLETS SO IT WILL NOT ERODE THE LAND OR CAUSE OFF-SITE DAMAGE; SEDIMENT IN RUNOFF SHALL BE TRAPPED BY USING STAKED HAY BALES, COMPOST FILTER TUBES, SILT SACKS, OR SEDIMENTATION TRAPS, OR OTHER APPROVED EROSION CONTROL DEVICES.
5. SEDIMENT BASINS SHALL BE CONSTRUCTED WHERE NECESSARY TO DETAIN RUNOFF AND TO TRAP SEDIMENT DURING CONSTRUCTION.
6. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE SILT FENCE OR HAY BALE.
7. EROSION AND SEDIMENT CONTROLS SHALL BE COORDINATED WITH THE SEQUENCE OF GRADING, DEVELOPMENT AND CONSTRUCTION OPERATIONS; CONTROL MEASURES SHALL BE IN EFFECT PRIOR TO COMMENCEMENT OF EACH INCREMENT/PHASE OF THE PROCESS.
8. SOIL AND OTHER MATERIALS SHALL NOT BE STOCKPILED OR REDISTRIBUTED, EITHER TEMPORARILY OR PERMANENTLY, IN LOCATIONS OR IN SUCH A MANNER AS WOULD CAUSE IMPEDANCE OF ABUTTING BUSINESS OR PROPERTY OWNERS.
9. TOPSOIL SHALL BE STRIPPED FROM DISTURBED AREAS, STOCKPILED IN APPROVED AREAS AND STABILIZED WITH TEMPORARY VEGETATIVE COVER IF IT IS TO BE LEFT FOR MORE THAN THIRTY (30) CALENDAR DAYS; PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AROUND EACH AREA OF STOCKPILED TOPSOIL.
10. SOIL STOCKPILES SHALL BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY.
11. STOCKPILED MATERIAL NOT UTILIZED ONSITE SHALL BE REMOVED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
12. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
13. FOR ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS AND AREAS WITHIN 50 FEET OF A BUILDING UNDER CONSTRUCTION, A PERIMETER SEDIMENT CONTROL SYSTEM SHALL BE INSTALLED AND MAINTAINED TO CONTAIN SOIL.
14. A TRACKING PAD SHALL BE CONSTRUCTED AT ALL ENTRANCE/EXIT POINTS OF THE SITE TO REDUCE THE AMOUNT OF SOIL CARRIED ONTO ROADWAYS AND OFF THE SITE.
15. DUST SHALL BE CONTROLLED AT THE SITE.
16. TEMPORARY SEEDING, MULCHING OR OTHER SUITABLE STABILIZATION METHODS SHALL BE USED TO PROTECT EXPOSED SOIL AREAS DURING CONSTRUCTION.
17. PERMANENT SEEDING SHOULD BE UNDERTAKEN IN THE SPRING FROM MARCH THROUGH MAY, AND IN LATE SUMMER AND EARLY FALL FROM AUGUST TO OCTOBER 15. DURING PEAK SUMMER MONTHS AND IN THE FALL AFTER OCTOBER 15, WHEN SEEDING IS FOUND TO BE IMPRACTICAL, AN APPROPRIATE TEMPORARY MULCH SHALL BE APPLIED. PERMANENT SEEDING MAY BE UNDERTAKEN DURING THE SUMMER IF PLANS PROVIDE FOR ADEQUATE MULCHING AND WATERING.
18. PERMANENT VEGETATION AND EROSION CONTROL STRUCTURES, AS NECESSARY, SHALL BE INSTALLED PREFERABLY IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED BUT OTHER WISE NO LATER THAN THE FIRST FULL SPRING SEASON IMMEDIATELY THEREAFTER; THEY SHALL COMPLY WITH THE EROSION AND SEDIMENTATION VEGETATIVE PRACTICES RECOMMENDED BY THE U.S. SOIL CONSERVATION SERVICE.
19. MONITORING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION SHALL BE REQUIRED.
20. TEMPORARY SEDIMENT TRAPPING DEVICES SHALL NOT BE REMOVED UNTIL PERMANENT STABILIZATION IS ESTABLISHED IN ALL CONTRIBUTORY DRAINAGE AREAS. SIMILARLY, STABILIZATION SHALL BE ESTABLISHED PRIOR TO CONVERTING SEDIMENT TRAPS/BASINS INTO PERMANENT (POST-CONSTRUCTION) STORMWATER MANAGEMENT FACILITIES. ALL FACILITIES USED AS TEMPORARY MEASURES SHALL BE CLEANED PRIOR TO BEING PUT INTO FINAL OPERATIONS.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS. THE APPLICANT'S ENGINEER SHALL SUBMIT WRITTEN CERTIFICATION THAT THIS CONDITION HAS BEEN MET.
22. THE CONDITION OF EROSION CONTROLS MUST BE CHECKED AFTER EVERY STORM EVENT. REPAIRS AND MAINTENANCE MUST BE PERFORMED WITHIN 24 HOURS AFTER A STORM EVENT.
23. THE SITE AND SURROUNDING AREA SHALL BE SWEPT REGULARLY TO CONTROL DUST AND DEBRIS.
24. LIMIT OF WORK IS THE PROPERTY LINES OF LOTS 4-3 & 4-5.
25. CONSTRUCTION FENCE TO BE INSTALLED AROUND PERIMETER OR SITE PRIOR TO THE START OF CONSTRUCTION.

TEC
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DESIGNED BY	CPR
DRAWN BY	MWP
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DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

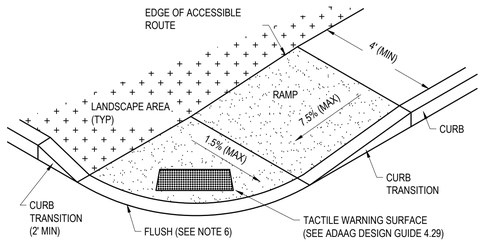
14 Broadway
Dover, NH 03820

DRAWING TITLE

Erosion & Sediment Control Plan

STATE OF NEW HAMPSHIRE – CHRISTOPHER P. RAYMOND No.16305 LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440
TEC CAD FILE N1440_ER
DRAWING NO. C-8
SHEET 8 OF 13

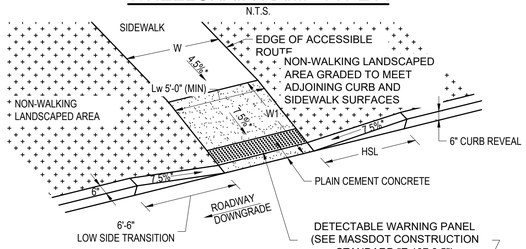


NOTES:

1. MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5% (7.5% FOR CURB RAMPS)
2. 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.).
3. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
4. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
5. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
6. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.

WHEELCHAIR RAMP TYPE A

N.T.S.

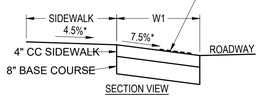


LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT CONSTRUCTION STANDARD "E 107.9.0")
W = SIDEWALK WIDTH
W1 = PERPENDICULAR RAMP LENGTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

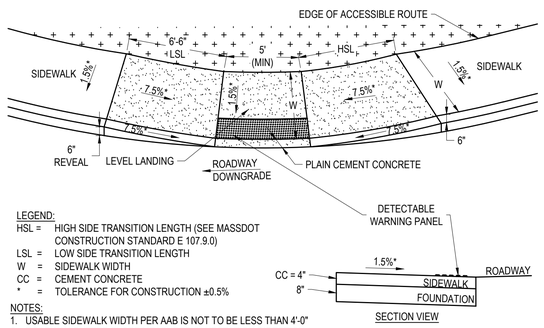
NOTES:

1. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
2. ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
3. SEE MASSDOT CONSTRUCTION STANDARD "E 107.6.5" FOR DETECTABLE WARNING PANEL DETAILS



WHEELCHAIR RAMP TYPE B

N.T.S.

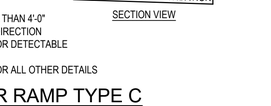


LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT CONSTRUCTION STANDARD E 107.9.0)
LSL = LOW SIDE TRANSITION LENGTH
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:

1. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
2. ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
3. SEE MASSDOT CONSTRUCTION STANDARD E 107.6.5 FOR DETECTABLE WARNING PANEL DETAILS
4. SEE MASSDOT CONSTRUCTION STANDARD E 107.2.1 FOR ALL OTHER DETAILS



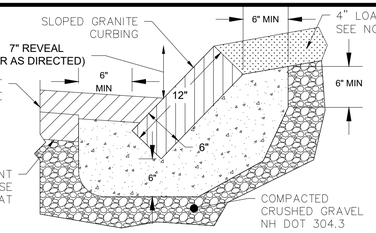
WHEELCHAIR RAMP TYPE C

N.T.S.

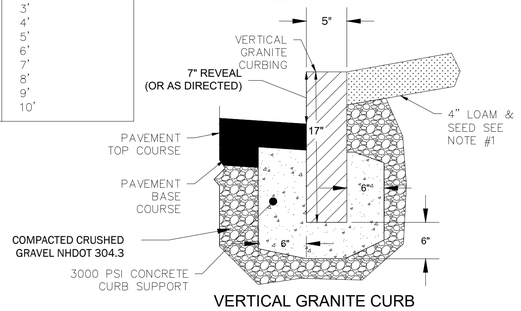
NOTES:

1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET ½" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

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'



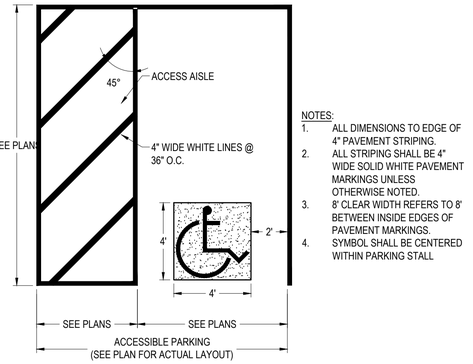
SLOPED GRANITE CURB



VERTICAL GRANITE CURB

GRANITE CURB

N.T.S.

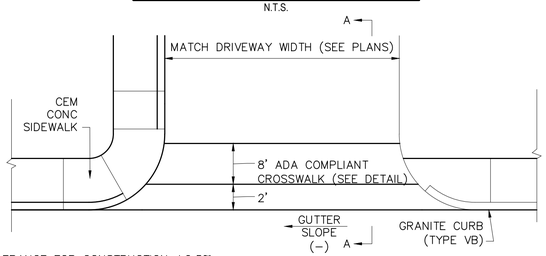


NOTES:

1. ALL DIMENSIONS TO EDGE OF 4" PAVEMENT STRIPING.
2. ALL STRIPING SHALL BE 4" WIDE SOLID WHITE PAVEMENT MARKINGS UNLESS OTHERWISE NOTED.
3. 8' CLEAR WIDTH REFERS TO 8' BETWEEN INSIDE EDGES OF PAVEMENT MARKINGS.
4. SYMBOL SHALL BE CENTERED WITHIN PARKING STALL

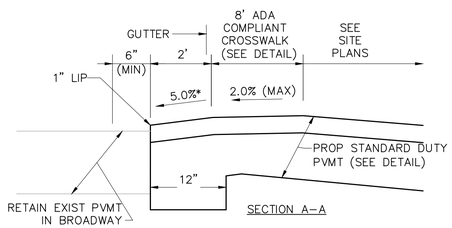
ACCESSIBLE PARKING SPACE

N.T.S.



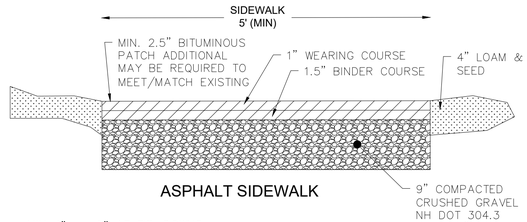
*TOLERANCE FOR CONSTRUCTION ±0.5%

PLAN

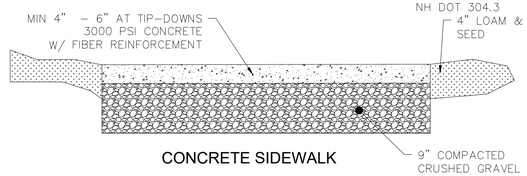


ASPHALT DRIVEWAY W/ CROSSWALK DETAIL

N.T.S.



ASPHALT SIDEWALK



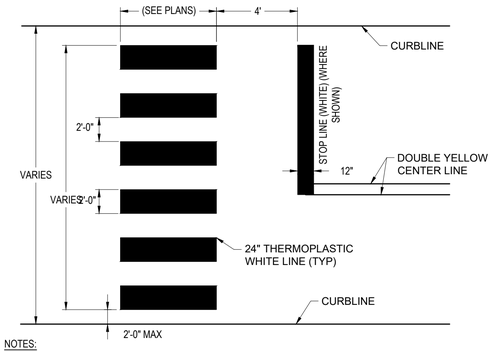
CONCRETE SIDEWALK

NOTES:

1. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS SPECIFICATIONS. SIDEWALK AND DRIVEWAY WIDTHS SHALL BE EQUAL TO EXISTING WIDTHS OR AS APPROVED AND SHALL SLOPE TO MATCH EXISTING ELEVATIONS.
2. BASE FOR THE SIDEWALKS AND DRIVEWAYS SHALL BE 9-INCHES OF CRUSHED GRAVEL.

ASPHALT & CONCRETE SIDEWALK

N.T.S.

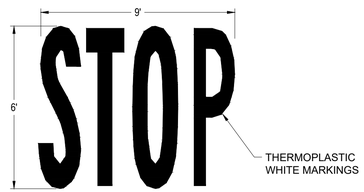


NOTES:

1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.

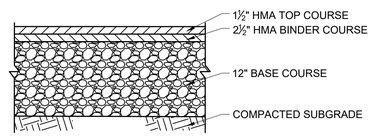
CROSSWALK PAVEMENT MARKING

N.T.S.



STOP PAVEMENT MARKING

N.T.S.



FULL DEPTH PAVEMENT

N.T.S.

TEC, Inc.

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(978) 794-1792

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Hampton, NH 03842
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DESIGNED BY	CPR
DRAWN BY	MWP
CHECKED BY	CPR
DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

14 Broadway
Dover, NH 03820

DRAWING TITLE

Construction Details

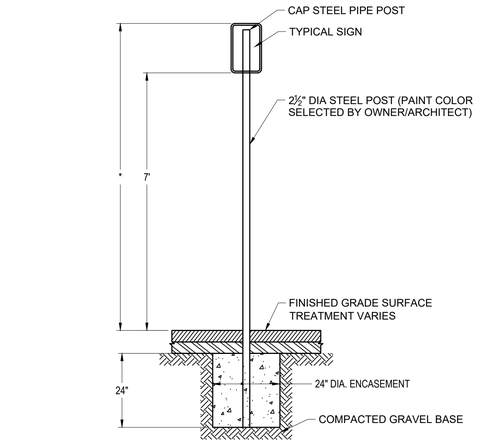
STATE OF NEW HAMPSHIRE – CHRISTOPHER P. RAYMOND No.16305 – LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440

TEC CAD FILE N1440_DET

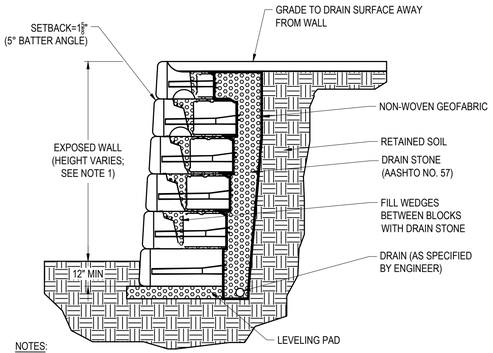
DRAWING NO. C-9

SHEET 9 OF 13



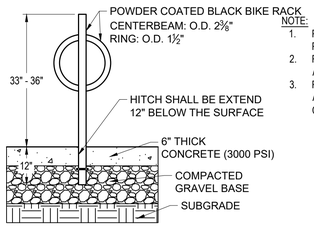
*THIS DIMENSION SHALL BE A MINIMUM OF 5' AND A MAXIMUM OF 8' FOR ACCESSIBLE SIGNAGE IN THE COMMONWEALTH OF MASSACHUSETTS.

SIGN POST
N.T.S.



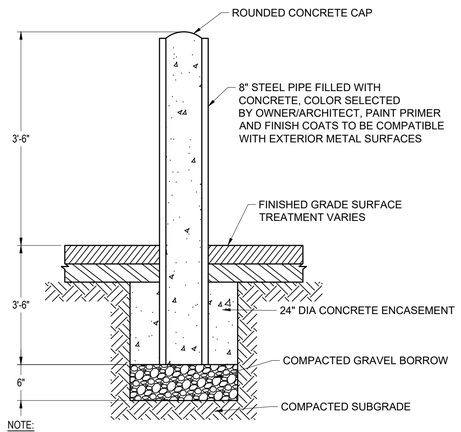
NOTES:
1. WALL HEIGHTS OVER 4 FEET WILL REQUIRE A FINAL WALL DESIGN STAMPED BY A STRUCTURAL ENGINEER.
2. FINAL WALL DESIGN TO BE SUBJECT TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER INCLUDING DESIGN ON LATERAL EARTH PRESSURES, GLOBAL STABILITY, FILL MATERIALS ADJACENT TO THE WALLS AND REQUIRED GEOGRID REINFORCEMENT.

SEGMENTAL BLOCK RETAINING WALL
N.T.S.



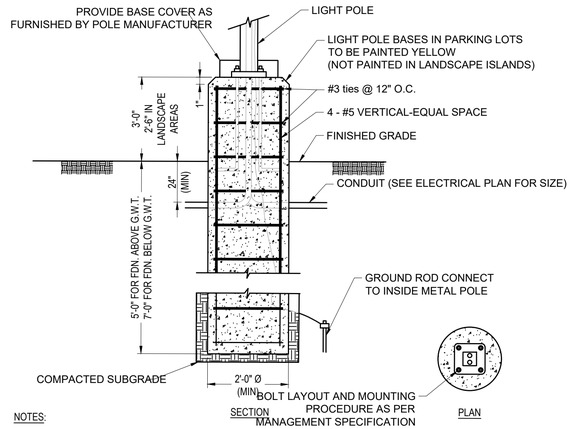
NOTE:
1. PRIOR TO PLACING RACK INTO CONCRETE, SET POLE IN GROUND AND BRACE IN PLUMB POSITION RACK UNITS ALIGNED SIDE BY SIDE SHALL BE SET A LEAST THREE FEET APART.
2. RACK UNITS ALIGNED END TO END SHALL BE SET AT LEAST EIGHT FEET APART (MEASURED FROM CENTERLINE OF RACK).

BIKE RACK
N.T.S.



NOTE:
BOLLARDS SHALL BE PLACED IN ACCORDANCE WITH THE ADA ACCESSABILITY GUIDELINES. A MINIMUM CLEAR WIDTH OF 36" SHALL BE PROVIDED TO MAINTAIN AN ACCESSIBLE PATH.

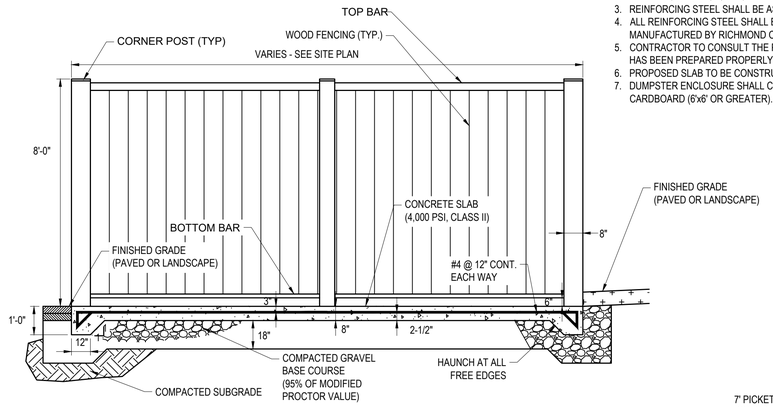
BOLLARD
N.T.S.



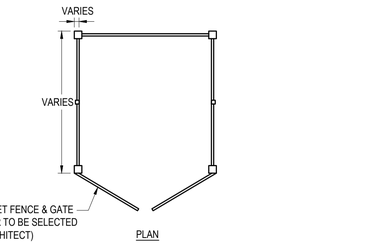
NOTES:
1. LIGHT POLE FOUNDATION DESIGN IS SUBJECT TO CHANGE BASED ON FINAL POLE AND FIXTURE SELECTION AND GEOTECHNICAL SITE INVESTIGATION.

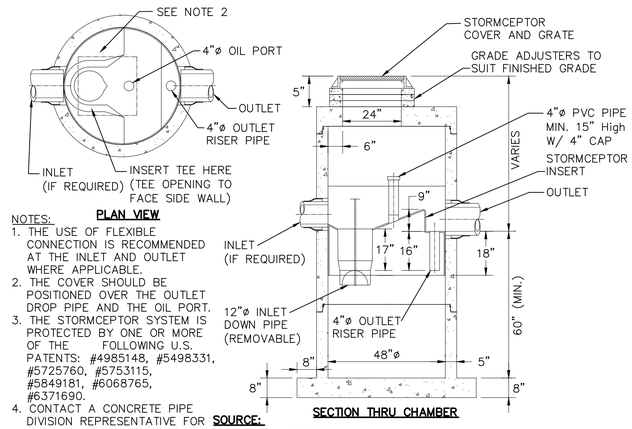
LIGHT POLE BASE
N.T.S.

NOTES:
1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
2. MAX. ALLOWABLE SLUMP SHALL NOT EXCEED 4" AND MAX. W/C RATIO SHALL NOT EXCEED 0.45.
3. REINFORCING STEEL SHALL BE ASTM A615 GR 60 DEFORMED BARS (UNCOATED).
4. ALL REINFORCING STEEL SHALL BE SECURED IN A PROPER POSITION ON CHAIRS AS MANUFACTURED BY RICHMOND OR APPROVED EQUAL.
5. CONTRACTOR TO CONSULT THE PROJECTS SOILS ENGINEER TO ENSURE THAT THE BASE COURSE HAS BEEN PREPARED PROPERLY PRIOR TO CONCRETE PLACEMENT.
6. PROPOSED SLAB TO BE CONSTRUCTED TO DRAIN TO MATCH PROPOSED PAVEMENT GRADING.
7. DUMPSTER ENCLOSURE SHALL CONTAIN ONE 8 CUBIC YARD RECEPTACLE FOR TRASH AND CARDBOARD (6'x6' OR GREATER).



ENCLOSED DUMPSTER PAD
N.T.S.

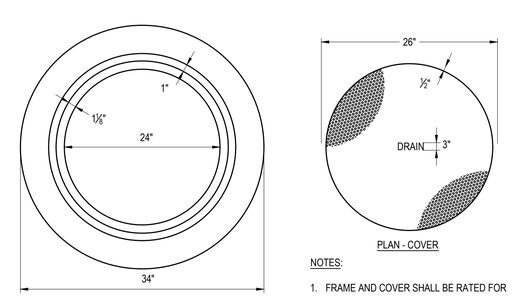




NOTES:
1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.
3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. CONTACT A CONCRETE PIPE DIVISION REPRESENTATIVE FOR FURTHER DETAILS NOT LISTED ON THE DRAWING.

SOURCE: WWW.STORMCEPTOR.COM

WATER QUALITY UNIT
STC 450 PRECAST CONCRETE INLET STORMCEPTOR®
(450 U.S. GALLON CAPACITY)
N.T.S.



NOTES:
1. FRAME AND COVER SHALL BE RATED FOR HS-20 LOADING.
2. MATERIAL - CAST IRON.
3. MINIMUM MASS - 265 LBS.
4. ALL MH FRAMES AND COVERS SHALL BE ADA AND AAB COMPLIANT.
5. MANHOLE COVERS SHALL HAVE A DIAMOND PATTERN, PICK HOLES, AND THE WORD "DRAIN" CAST IN 3-INCH LETTERS.

MANHOLE FRAME AND COVER
N.T.S.

TEC, Inc.
282 Merrimack St, 2nd Floor
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(978) 794-1792
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PROJECT LOCATION
14 Broadway
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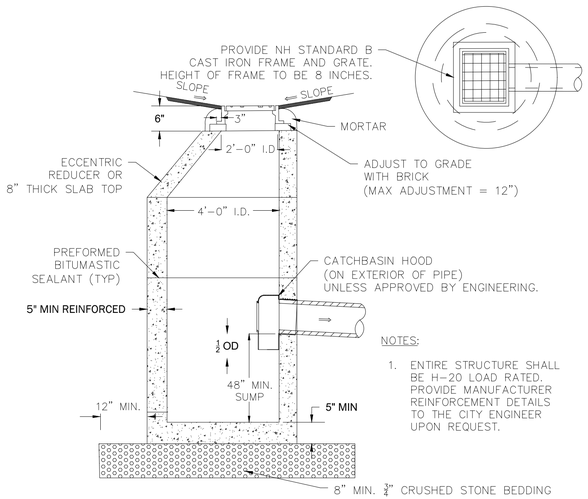
DRAWING TITLE
Construction Details

STATE OF NEW HAMPSHIRE — CHRISTOPHER P. RAYMOND No.16305 — LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440
TEC CAD FILE N1440_DET
DRAWING NO. C-10
SHEET 10OF 13

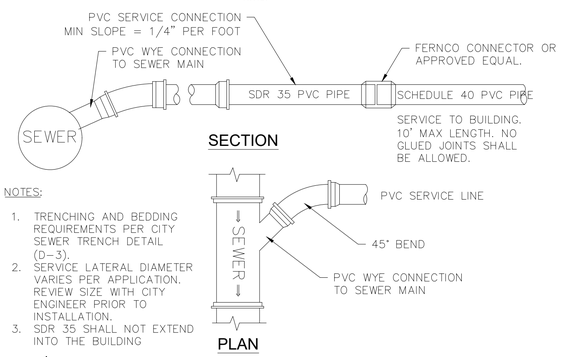


NOTES:

1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.

DEEP SUMP CATCH BASIN WITH HOOD

N.T.S.

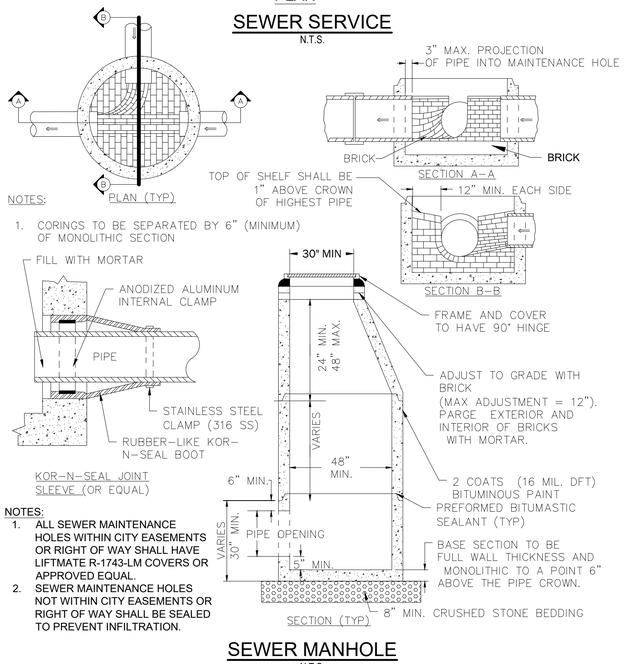


NOTES:

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

SEWER SERVICE

N.T.S.



NOTES:

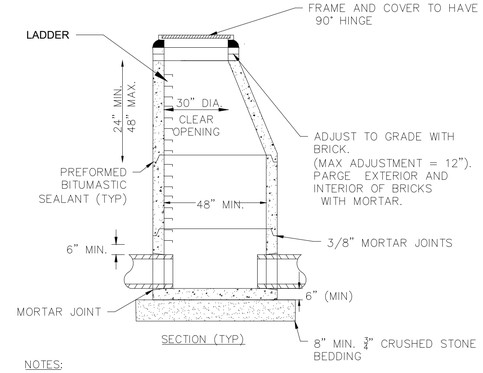
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

NOTES:

1. ALL SEWER MAINTENANCE HOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
2. SEWER MAINTENANCE HOLES NOT WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL BE SEALED TO PREVENT INFILTRATION.

SEWER MANHOLE

N.T.S.

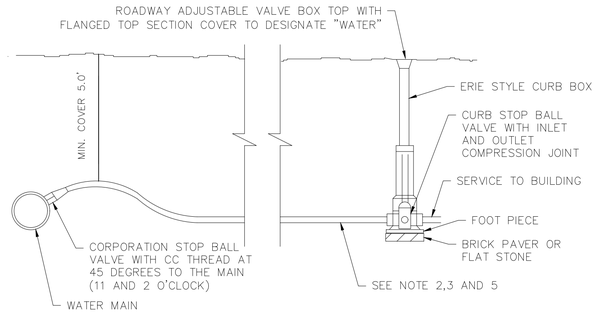


NOTES:

1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION.

DRAINAGE MANHOLE

N.T.S.

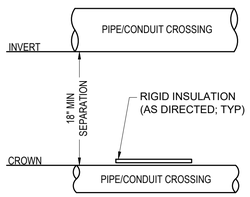


NOTES:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 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. ¾"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

WATER SERVICE CONNECTION

N.T.S.

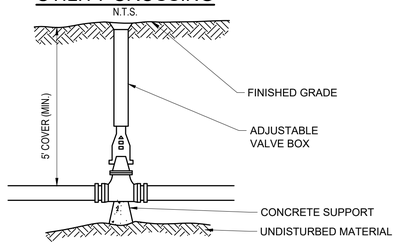


NOTE:

1. IF 18" MIN. SEPARATION CANNOT BE MET, USE RIGID INSULATION AS DIRECTED BY ENGINEER.
2. DEPTH OF UTILITY BURIAL SHOULD MATCH DESIGN PLAN(S) ELEVATIONS.
3. WHERE DEPTH IS UNSPECIFIED, UTILITY LINES SHALL BE BURIED WITHIN MANUFACTOR ACCEPTED PARAMETERS FOR THE GIVEN DESIGN LOCATION.
4. ALL BURIAL LOCATIONS/DEPTHS SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REGULATIONS/GUIDELINES.

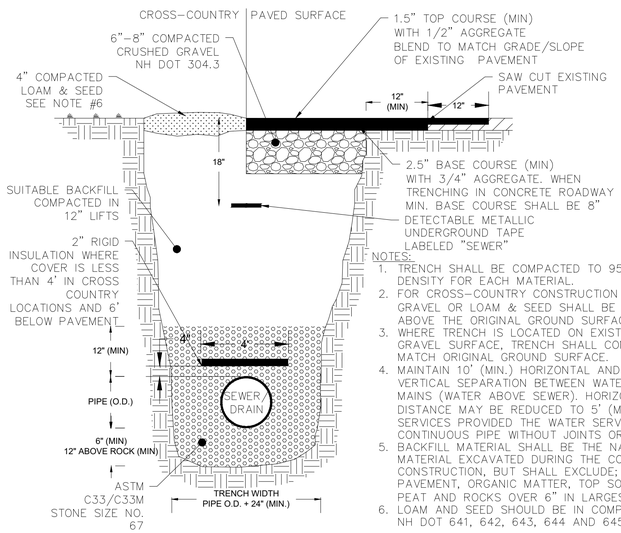
UTILITY CROSSING

N.T.S.



WATER GATE VALVE

N.T.S.

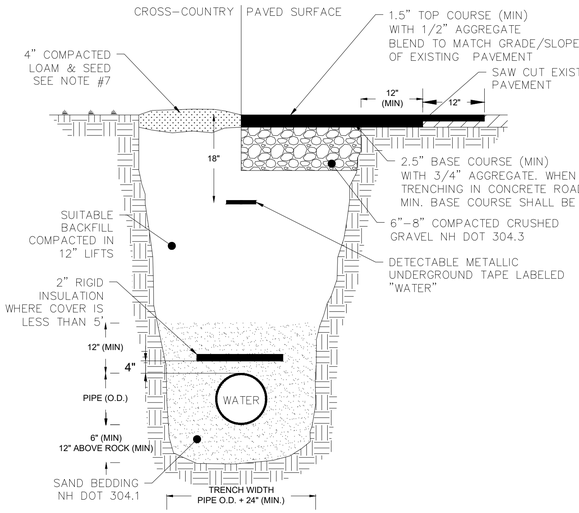


NOTES:

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.
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.

SEWER TRENCH

N.T.S.



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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.

WATER TRENCH

N.T.S.

TEC, Inc.

282 Merrimack St, 2nd Floor
Lawrence, MA 01843
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

www.TheEngineeringCorp.com

DESIGNED BY	CPR
DRAWN BY	MWP
CHECKED BY	CPR
DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR

Permitting

PROJECT TITLE

Proposed Residential Development at 14 Broadway

PROJECT LOCATION

14 Broadway
Dover, NH 03820

DRAWING TITLE

Construction Details

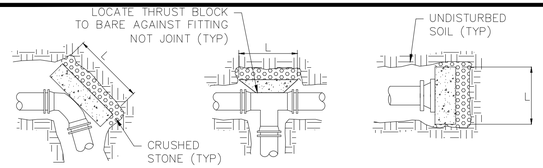
STATE OF NEW HAMPSHIRE — CHRISTOPHER P. RAYMOND No.16305 — LICENSED PROFESSIONAL ENGINEER

PROJECT NO. N1440

TEC CAD FILE N1440_DET

DRAWING NO. C-11

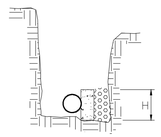
SHEET 11OF 13



PLAN – ELBOW

PLAN – TEE

PLAN – CAP



SECTION (TYP.)

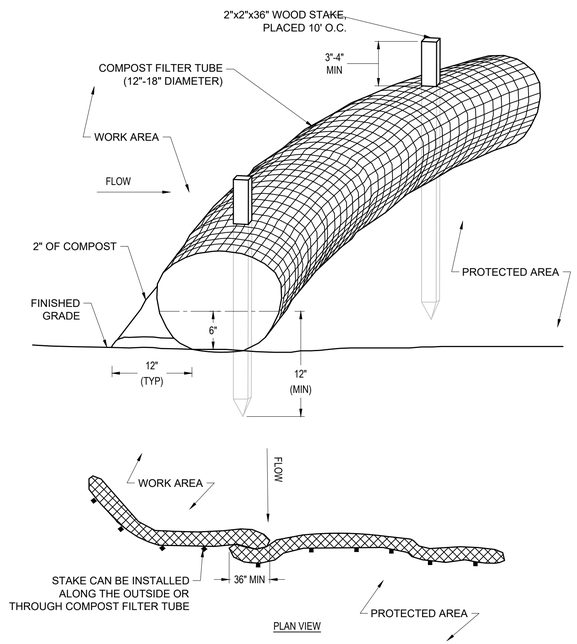
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	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'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
2. 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.
3. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
4. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
5. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
6. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
7. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

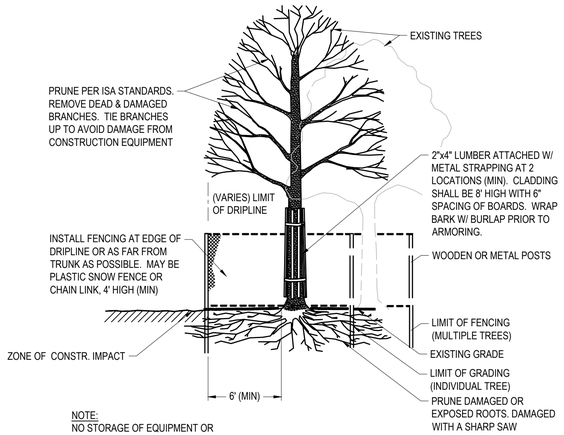
THRUST BLOCK
N.T.S.



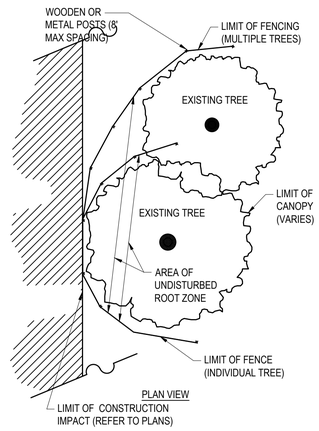
NOTES:

1. CONFIGURE TUBES AROUND EXISTING FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF. TUBES SHALL BE PLACED PERPENDICULARLY TO STORMWATER FLOW WHERE POSSIBLE.
2. TUBES FOR COMPOST FILTERS SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
3. TUBES MAY BE SLEEVED OR PROVIDED A 3 FEET MINIMUM OVERLAP AT THE ENDS OF THE TUBE FOR A CONTINUOUS BARRIER.
4. TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE. IT IS NOT NECESSARY TO TRENCH TUBES INTO EXISTING GRADE.
5. WHEN STAKING IS NOT POSSIBLE, SUCH AS WHEN TUBES MUST BE PLACED ON PAVEMENT, HEAVY CONCRETE OR CINDER BLOCKS CAN BE USED BEHIND TUBES UP TO 5 FT. APART OR AS REQUIRED TO SECURE TUBES IN PLACE. DO NOT PUNCTURE TUBES WITH STAKES.
6. TUBES CAN BE PLACED DIRECTLY ON EXISTING PAVEMENT WHEN NECESSARY.
7. UPON COMPLETION OF PROJECT, ALL TUBES USED FOR EROSION CONTROL SHALL BE REMOVED FROM PROJECT LIMITS, OR DETERMINED BY THE ENGINEER, CAN BE DISPERSED ON SITE.

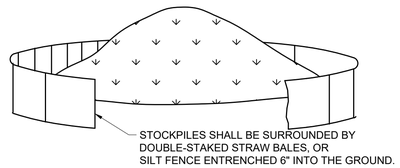
COMPOST FILTER TUBE
N.T.S.



NOTE:
NO STORAGE OF EQUIPMENT OR STOCKPILING OF MATERIALS WITHIN DRIPLINE IS ALLOWED.

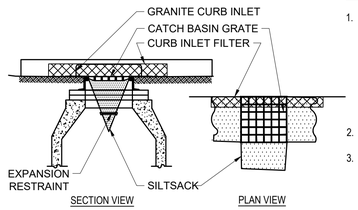


TREE PROTECTION
N.T.S.



NOTES:
SOIL STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS AND THE END OF EACH WORK DAY.

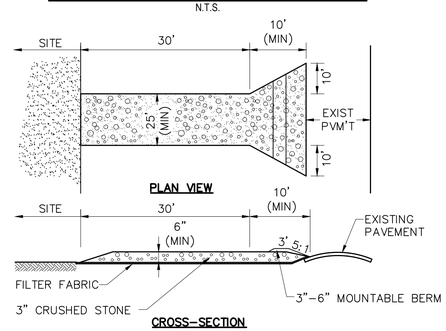
SOIL STOCKPILE
N.T.S.



NOTES:

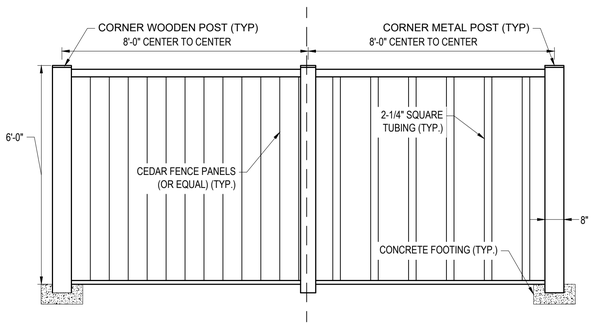
1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

CATCH BASIN INLET PROTECTION
N.T.S.



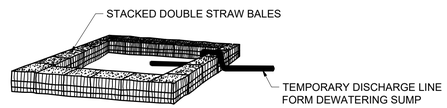
1. ENTRANCE WIDTH SHALL BE A TWENTY–FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING 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. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

STABILIZED CONSTRUCTION EXIT
N.T.S.



1. FENCE SHALL HAVE A HEIGHT OF 6 FEET.
2. FENCE SHALL NOT BE VINYL MATERIAL OR CHAIN LINK.
3. EXACT DIMENSIONS OF SPACING AND PANELS/TUBING MAY VARY.
4. CONTRACTOR SHALL VERIFY SELECTED FENCE WITH ENGINEER PRIOR TO INSTALLATION.

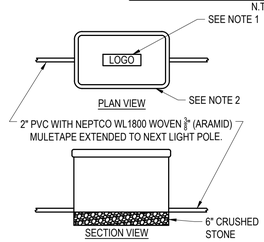
FENCE
N.T.S.



NOTES:

DISCHARGE TO SEDIMENTATION BASIN (AS SHOWN) OR TO SILTATION/DEWATERING BAG SUCH AS FLOGARD DEWATERING BAG MODEL SC-DW1215Z, OR EQUAL APPROVED BY CONSERVATION COMMISSION. ALL DISCHARGE LOCATIONS SHALL BE A MINIMUM OF 50' FROM EXISTING BVW.

TEMPORARY STILLING AREA
N.T.S.



NOTES

1. COVERS SHALL BE LABELED "ELECTRICAL", "COMMUNICATION", "CATV", OR "TELECOM" AS REQUIRED.
2. HANDHOLE SIZE PER NATIONAL ELECTRIC CODE UNLESS OTHERWISE NOTED.
3. LOADING REQUIREMENTS SHALL BE BASED ON APPLICATION TYPE. MINIMUM RATINGS SHALL BE TIER 15. PROVIDE TRAFFIC RATED HANDHOLES WHERE REQUIRED.
4. THE ELECTRICAL SUBCONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING PRE-CAST HANDHOLES.
5. PROVIDE IN-LINE, WATERPROOF FUSE HOLDER-BUSS "TRON" TYPE HEB OR HEX, AS REQUIRED.

TYPICAL HANDHOLE
N.T.S.

TEC, Inc.
282 Merrimack St, 2nd Floor
Lawrence, MA 01843
(978) 794-1792
169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154
www.TheEngineeringCorp.com

DESIGNED BY	CPR
DRAWN BY	MWP
CHECKED BY	CPR
DATE	3/7/2024
SCALE	AS NOTED

OWNER/APPLICANT

Regan Development Corporation
1055 Saw Mill River Road #204
Ardsley, NY 10502

REVISIONS

1.	TRC Comments	4/5/2024
2.	TRC 2 Comments	5/2/2024

ISSUED FOR
Permitting

PROJECT TITLE
Proposed Residential Development at 14 Broadway

PROJECT LOCATION
14 Broadway
Dover, NH 03820

DRAWING TITLE
Construction Details

STATE OF NEW HAMPSHIRE – CHRISTOPHER P. RAYMOND No.16305 – LICENSED PROFESSIONAL ENGINEER –

PROJECT NO. N1440
TEC CAD FILE N1440_DET
DRAWING NO. C-12
SHEET 12OF 13

GENERAL PLAN NOTES:

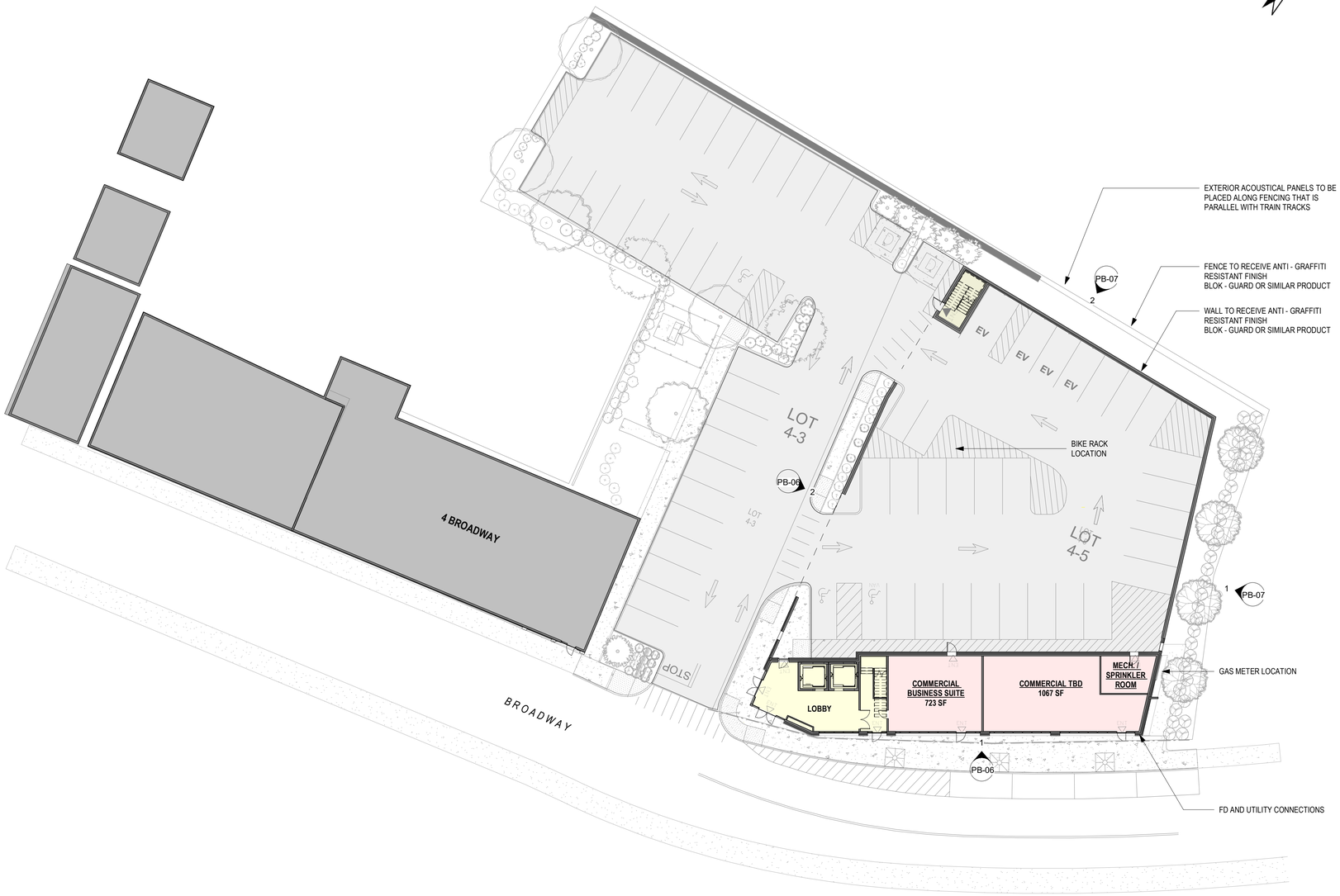
- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
- ALL EGRESS DOORS TO HAVE PANIC HARDWARE
- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

ZONING REGULATIONS:

- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

EGRESS AND SEPARATION REGULATIONS:

- MINIMUM NUMBER OF EXITS FROM EACH STORY: 2
- MAX TRAVEL DISTANCE: 125'
- DEAD END CORRIDOR DISTANCE: 20'
- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS



1 SITE PLAN
1" = 20'-0"

GRAPHIC SCALE
0 20 40 60 80

P21 -P29

LASSEL ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E. HOUGHANE
No. 04574
THE STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
SITE PLAN

DRAWING NUMBER:
PB-01

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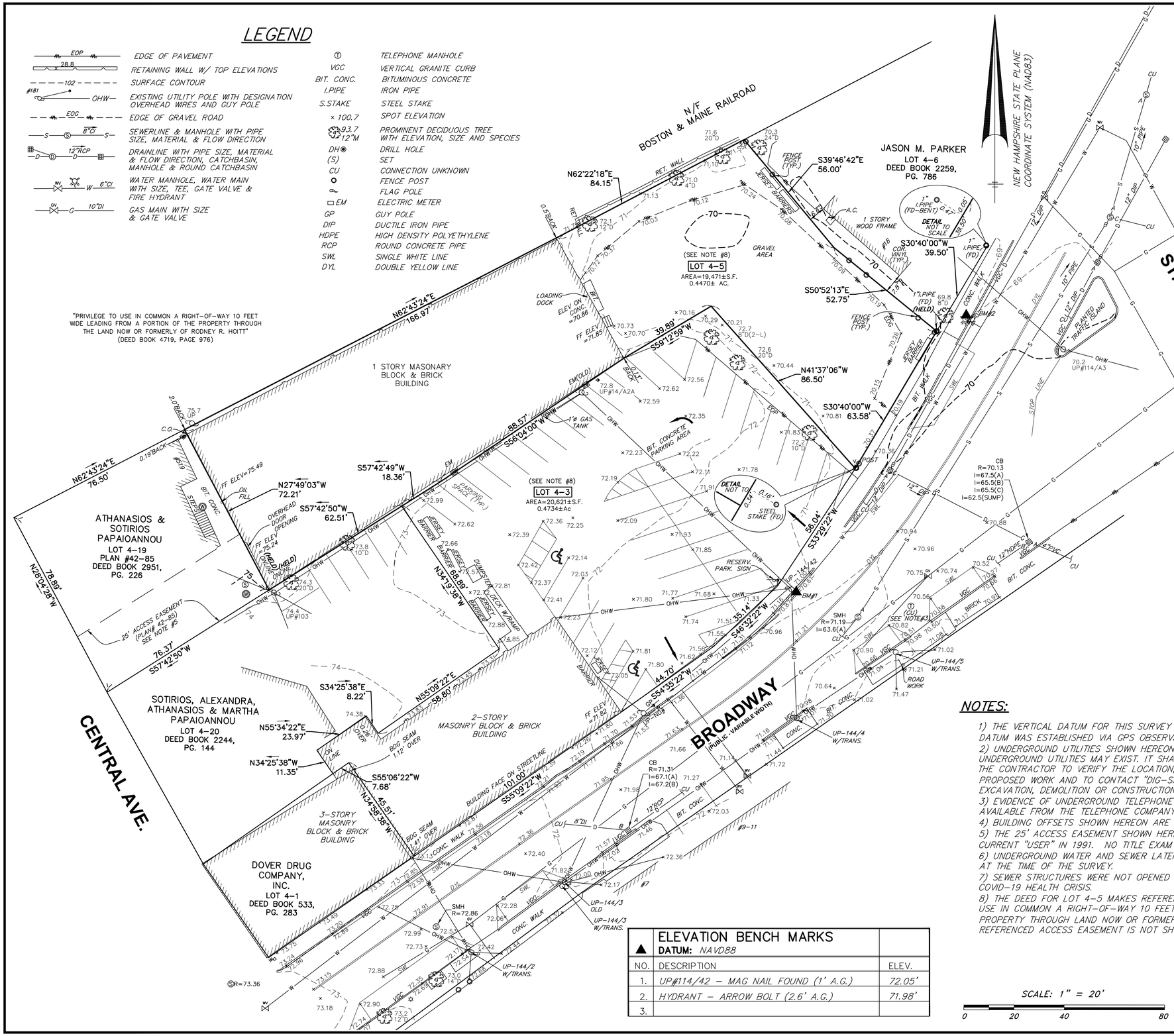
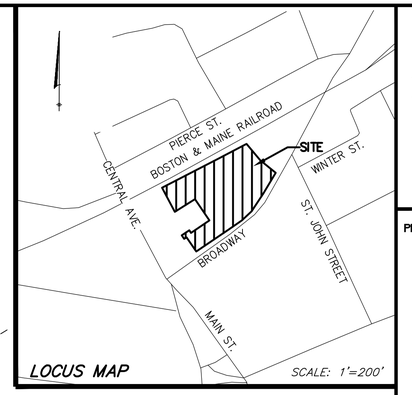
4/24/2024 5:44:14 PM L:\FILES CURRENT\23.35 14 Broadwey Dover\8. DRAWINGS\8.2 REVIT\Cyr Dover Apt - TRC 1 UPDATES - 4.23.24.rvt

LEGEND

EOP	EDGE OF PAVEMENT
28.8	RETAINING WALL W/ TOP ELEVATIONS
102	SURFACE CONTOUR
#181 OHW	EXISTING UTILITY POLE WITH DESIGNATION OVERHEAD WIRES AND GUY POLE
EOG	EDGE OF GRAVEL ROAD
S 8"CI S	SEWERLINE & MANHOLE WITH PIPE SIZE, MATERIAL & FLOW DIRECTION
D 12"RCP D	DRAINLINE WITH PIPE SIZE, MATERIAL & FLOW DIRECTION, CATCHBASIN, MANHOLE & ROUND CATCHBASIN
WV W 6"CI	WATER MANHOLE, WATER MAIN WITH SIZE, TEE, GATE VALVE & FIRE HYDRANT
GV G 10"DI	GAS MAIN WITH SIZE & GATE VALVE
T	TELEPHONE MANHOLE
VGC	VERTICAL GRANITE CURB
BIT. CONC.	BITUMINOUS CONCRETE
I.PIPE	IRON PIPE
S.STAKE	STEEL STAKE
× 100.7	SPOT ELEVATION
93.7 12"M	PROMINENT DECIDUOUS TREE WITH ELEVATION, SIZE AND SPECIES
DH	DRILL HOLE
(S)	SET
CU	CONNECTION UNKNOWN
	FENCE POST
	FLAG POLE
EM	ELECTRIC METER
GP	GUY POLE
DIP	DUCTILE IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE
RCP	ROUND CONCRETE PIPE
SWL	SINGLE WHITE LINE
DYL	DOUBLE YELLOW LINE





NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM (NAD83)

ASSESSORS:

MAP 4, LOT 3 (RANDALL)
MAP 4, LOT 5 (DOWNTOWN DOVER)

ZONING:

MIXED USE – CBD (CENTRAL BUSINESS DISTRICT)

REFERENCES:

DEED BOOK 4719 PAGE 976 (LOT 4-5)
DEED BOOK 2555 PAGE 323 (LOT 4-3)
PLAN #42-85
PLAN IN POCKET #3, FOLDER #2, PLAN #55

RECORD OWNER:

CLAYTON F. RANDALL LIVING REVOCABLE TRUST OF 2002
131 CLEMENT ROAD
ROLLINSFORD, NH 03869

DOWNTOWN DOVER STORAGE, LLC
42 L DOVER POINT ROAD
DOVER, NH 03820

NOTES:

1) THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM (NAVD88). SAID DATUM WAS ESTABLISHED VIA GPS OBSERVATIONS UTILIZING REALIZATION NAD83(2011) AND GEOID 12A.
2) UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD LOCATIONS OF STRUCTURES. OTHER UNDERGROUND UTILITIES MAY EXIST. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THE CONTRACTOR TO VERIFY THE LOCATION, SIZE & ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK AND TO CONTACT "DIG-SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.
3) EVIDENCE OF UNDERGROUND TELEPHONE EXISTS WITHIN BROADWAY. NO INFORMATION WAS AVAILABLE FROM THE TELEPHONE COMPANY AT THE TIME OF THE SURVEY.
4) BUILDING OFFSETS SHOWN HEREON ARE TO CORNER CONCRETE BLOCK UNLESS OTHERWISE NOTED.
5) THE 25' ACCESS EASEMENT SHOWN HEREON MAY OR MAY NOT EXIST, AS IT WAS FOR THE CURRENT "USER" IN 1991. NO TITLE EXAM HAS BEEN CONDUCTED TO IDENTIFY CURRENT STATUS.
6) UNDERGROUND WATER AND SEWER LATERAL CONNECTIONS TO THE BUILDINGS WERE NOT AVAILABLE AT THE TIME OF THE SURVEY.
7) SEWER STRUCTURES WERE NOT OPENED AT THE TIME OF THE SURVEY DUE TO THE ONGOING COVID-19 HEALTH CRISIS.
8) THE DEED FOR LOT 4-5 MAKES REFERENCE TO A CONVEYANCE WHICH INCLUDES A PRIVILEGE TO USE IN COMMON A RIGHT-OF-WAY 10 FEET WIDE LEADING FROM A PORTION OF THE DESCRIBED PROPERTY THROUGH LAND NOW OR FORMERLY OF RODNEY R. HOITT (LOT 4-3) TO BROADWAY. THE REFERENCED ACCESS EASEMENT IS NOT SHOWN ON THE SURVEY.

▲ ELEVATION BENCH MARKS
DATUM: NAVD88

NO.	DESCRIPTION	ELEV.
1.	UP#114/42 – MAG NAIL FOUND (1' A.G.)	72.05'
2.	HYDRANT – ARROW BOLT (2.6' A.G.)	71.98'
3.		

SCALE: 1" = 20'
0 20 40 80

14 BROADWAY

Dover, New Hampshire 03820

PREPARED FOR:

NEW SPACE REAL ESTATE, LLC

42 Dover Road, Unit L
Dover, New Hampshire 03820

HANCOCK ASSOCIATES

Civil Engineers
Land Surveyors
Landscape Architects
Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
1.	JML	JAE	2/19/21	UPDATED TOPO/BOUNDARY

DATE: 4/18/20 | DRAWN BY: JAE/JAH
SCALE: 1"=20' | CHECK BY: WCJ

EXISTING CONDITIONS PLAN OF LAND IN DOVER, NH

PLOT DATE: Feb 19, 2021 3:53 pm
PATH: O:\Civil 3D Projects\24569 - Cyr - Dover, NH\Surv\DWG\

DWG: 24569ec.dwg
LAYOUT: EC
SHEET: 1 OF 1
PROJECT NO.: 24569

Plan# 12769 09/27/2022 03:32:18 PM
Page 1 of 1
Register of Deeds, Strafford County
LCHIP STA202209 25.00

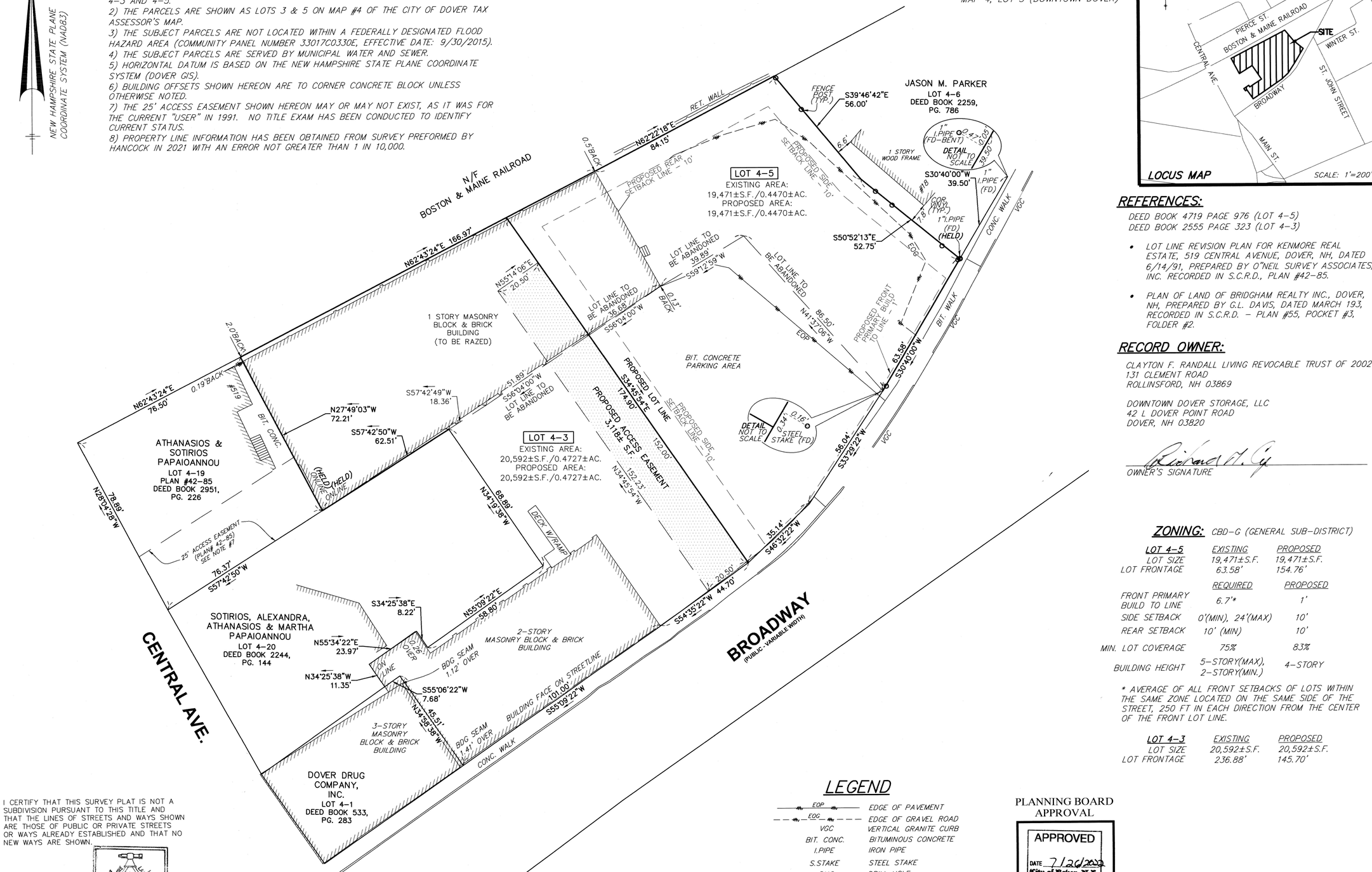
NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM (NAD83)

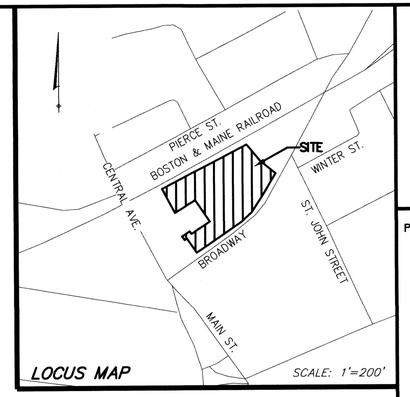
NOTES:

1) THE PURPOSE OF THIS PLAN IS TO PERFORM A LOT LINE ADJUSTMENT BETWEEN LOTS 4-3 AND 4-5.
2) THE PARCELS ARE SHOWN AS LOTS 3 & 5 ON MAP #4 OF THE CITY OF DOVER TAX ASSESSOR'S MAP.
3) THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0330E, EFFECTIVE DATE: 9/30/2015).
4) THE SUBJECT PARCELS ARE SERVED BY MUNICIPAL WATER AND SEWER.
5) HORIZONTAL DATUM IS BASED ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM (DOVER GIS).
6) BUILDING OFFSETS SHOWN HEREON ARE TO CORNER CONCRETE BLOCK UNLESS OTHERWISE NOTED.
7) THE 25' ACCESS EASEMENT SHOWN HEREON MAY OR MAY NOT EXIST, AS IT WAS FOR THE CURRENT "USER" IN 1991. NO TITLE EXAM HAS BEEN CONDUCTED TO IDENTIFY CURRENT STATUS.
8) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM SURVEY PREFORMED BY HANCOCK IN 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

ASSESSORS:

MAP 4, LOT 3 (RANDALL)
MAP 4, LOT 5 (DOWNTOWN DOVER)





REFERENCES:

DEED BOOK 4719 PAGE 976 (LOT 4-5)
DEED BOOK 2555 PAGE 323 (LOT 4-3)

- LOT LINE REVISION PLAN FOR KENMORE REAL ESTATE, 519 CENTRAL AVENUE, DOVER, NH, DATED 6/14/91, PREPARED BY O'NEIL SURVEY ASSOCIATES, INC. RECORDED IN S.C.R.D., PLAN #42-85.
- PLAN OF LAND OF BRIDGHAM REALTY INC., DOVER, NH, PREPARED BY G.L. DAVIS, DATED MARCH 193, RECORDED IN S.C.R.D. - PLAN #55, POCKET #3, FOLDER #2.

RECORD OWNER:

CLAYTON F. RANDALL LIVING REVOCABLE TRUST OF 2002
131 CLEMENT ROAD
ROLLINSFORD, NH 03869

DOWNTOWN DOVER STORAGE, LLC
42 L DOVER POINT ROAD
DOVER, NH 03820

OWNER'S SIGNATURE

ZONING: CBD-G (GENERAL SUB-DISTRICT)

LOT 4-5	EXISTING	PROPOSED
LOT SIZE	19,471±S.F.	19,471±S.F.
LOT FRONTAGE	63.58'	154.76'
	REQUIRED	PROPOSED
FRONT PRIMARY BUILD TO LINE	6.7'*	1'
SIDE SETBACK	0'(MIN), 24'(MAX)	10'
REAR SETBACK	10' (MIN)	10'
MIN. LOT COVERAGE	75%	83%
BUILDING HEIGHT	5-STORY(MAX), 2-STORY(MIN.)	4-STORY

* AVERAGE OF ALL FRONT SETBACKS OF LOTS WITHIN THE SAME ZONE LOCATED ON THE SAME SIDE OF THE STREET, 250 FT IN EACH DIRECTION FROM THE CENTER OF THE FRONT LOT LINE.

LOT 4-3	EXISTING	PROPOSED
LOT SIZE	20,592±S.F.	20,592±S.F.
LOT FRONTAGE	236.88'	145.70'

LEGEND

EOP	EDGE OF PAVEMENT
EOG	EDGE OF GRAVEL ROAD
VGC	VERTICAL GRANITE CURB
BIT. CONC.	BITUMINOUS CONCRETE
I.PIPE	IRON PIPE
S.STAKE	STEEL STAKE
DH ◉	DRILL HOLE
(S)	SET
(FD)	FOUND
o	FENCE POST

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.

7/5/22
DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 861 WAYNE C. JALBERT

LICENSED LAND SURVEYOR

PLANNING BOARD APPROVAL

APPROVED
DATE 7/26/2022
City of Dover, N.H.
PLANNING BOARD
CHAIRMAN/DIRECTOR

SCALE: 1" = 20'
0 20 40 80

14 BROADWAY

Dover, New Hampshire 03820

Planning Board File #21-52

PREPARED FOR:

DOWNTOWN DOVER STORAGE, LLC

42 Dover Road, Unit L
Dover, New Hampshire 03820

HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM

NO.	BY	APP	DATE	ISSUE/REVISION DESCRIPTION
2.	JAE	WCJ	6/30/22	PLANNING BOARD COMMENTS
1.	JAE	WCJ	1/18/22	PLANNING BOARD COMMENTS

DATE: 9/25/21 DRAWN BY: JAE/JAH
SCALE: 1"=20' CHECK BY: WCJ

LOT LINE ADJUSTMENT PLAN OF LAND IN DOVER, NH (STRAFFORD COUNTY)

DWG: 24569a1.dwg
LAYOUT: LLA
SHEET: 1 OF 1
PROJECT NO.: 24569

GENERAL PLAN NOTES:

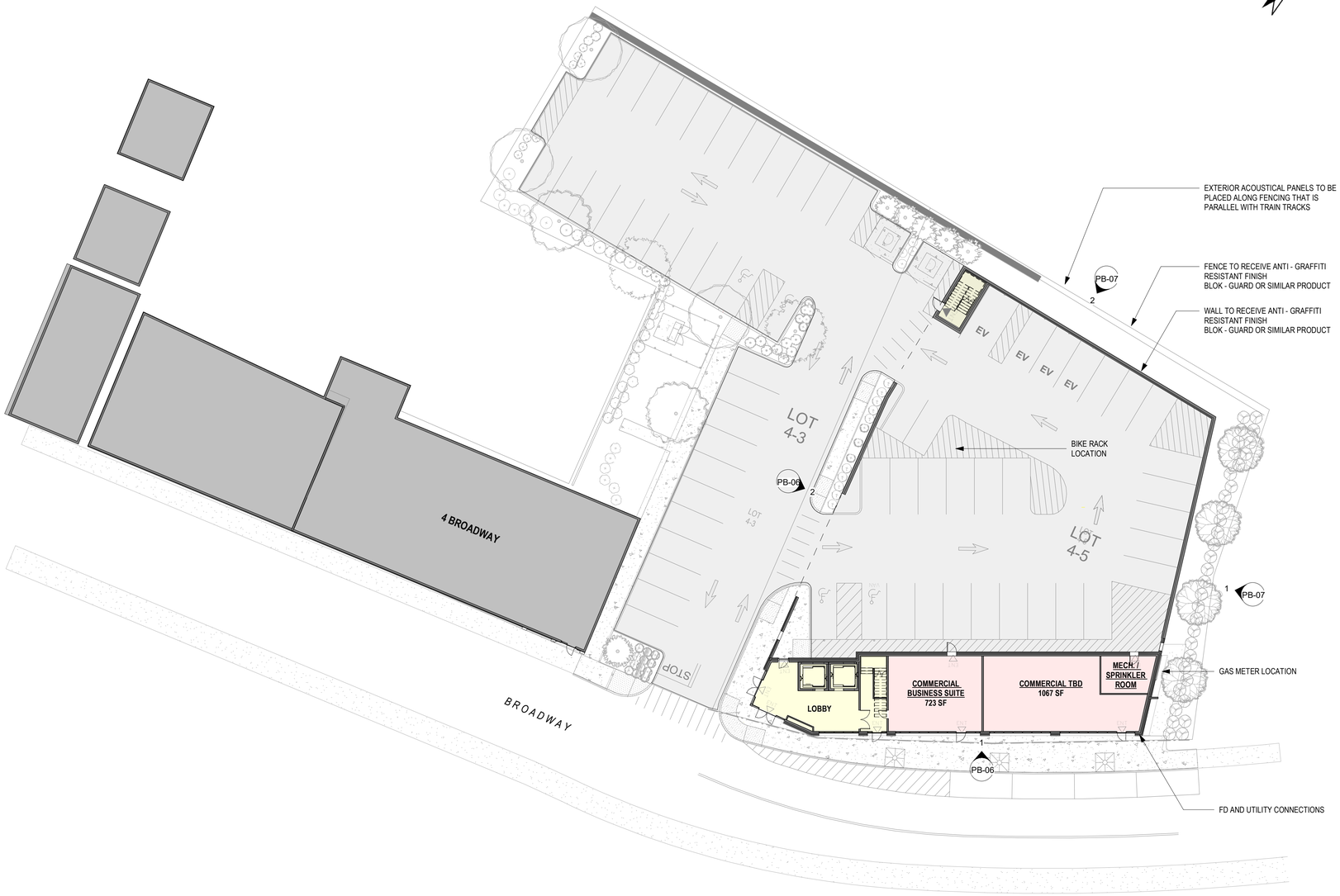
- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
- ALL EGRESS DOORS TO HAVE PANIC HARDWARE
- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

ZONING REGULATIONS:

- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

EGRESS AND SEPARATION REGULATIONS:

- MINIMUM NUMBER OF EXITS FROM EACH STORY: 2
- MAX TRAVEL DISTANCE: 125'
- DEAD END CORRIDOR DISTANCE: 20'
- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS



1 SITE PLAN
1" = 20'-0"

GRAPHIC SCALE
0 20 40 60 80

P21 -P29

LASSEL ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E. HOUGHANE
No. 04574
THE STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
SITE PLAN

DRAWING NUMBER:
PB-01

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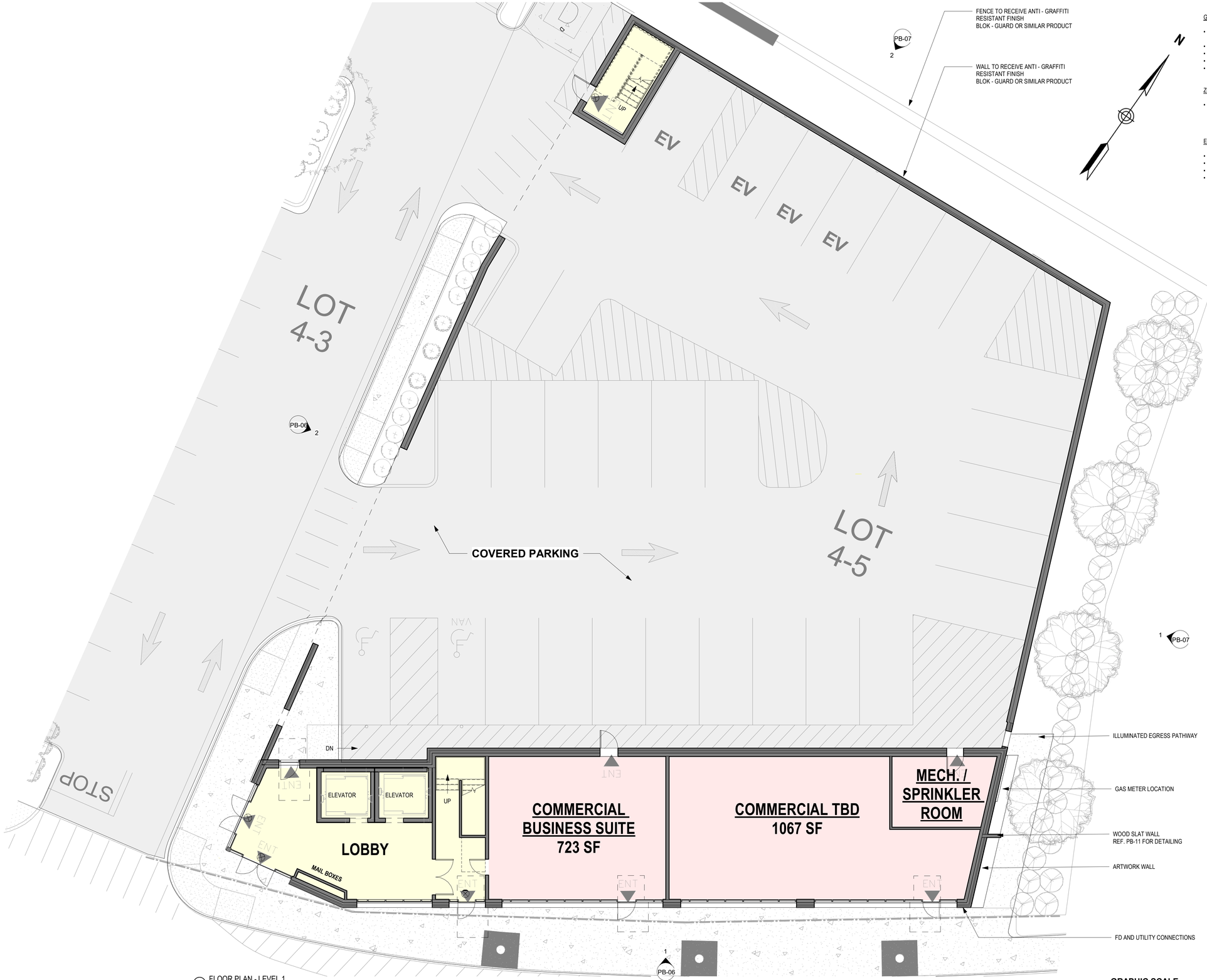

1 FLOOR PLAN - LEVEL 1
1/8" = 1'-0"

GRAPHIC SCALE
0' 4' 8' 16' 32'

GENERAL PLAN NOTES:

- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
- ALL EGRESS DOORS TO HAVE PANIC HARDWARE
- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

ZONING REGULATIONS:

- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

EGRESS AND SEPARATION REGULATIONS:

- MINIMUM NUMBER OF EXITS FROM EACH STORY: 2
- MAX TRAVEL DISTANCE: 125'
- DEAD END CORRIDOR DISTANCE: 20'
- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS

LASSEL ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
FLOOR PLAN - LEVEL 1

DRAWING NUMBER:
PB-02

P21 -P29

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1 FLOOR PLAN - LEVEL 2
1/8" = 1'-0"

GENERAL PLAN NOTES:

- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
- ALL EGRESS DOORS TO HAVE PANIC HARDWARE
- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

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- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

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- DEAD END CORRIDOR DISTANCE: 20'
- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS

GRAPHIC SCALE
0' 4' 8' 16' 32'

P21 -P29

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207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E. HOUGHANE
No. 04574
THE STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
DATE: 4/25/24
SCALE: AS NOTED
REVISION:
NORTH:

DRAWING NAME:
FLOOR PLAN - LEVEL 2

DRAWING NUMBER:
PB-03

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1 FLOOR PLAN - LEVEL 3 & 4
1/8" = 1'-0"

GENERAL PLAN NOTES:

- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
- ALL EGRESS DOORS TO HAVE PANIC HARDWARE
- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

ZONING REGULATIONS:

- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

EGRESS AND SEPARATION REGULATIONS:

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- DEAD END CORRIDOR DISTANCE: 20'
- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS

APARTMENTS 25 - 38 ON FOURTH FLOOR

GRAPHIC SCALE
0' 4' 8' 16' 32'

P21 -P29

LASSEL ARCHITECTS
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LICENSED ARCHITECT
SARAH E. HOUGHANE
No. 04574
STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
FLOOR PLAN - LEVEL 3 & 4

DRAWING NUMBER:
PB-04

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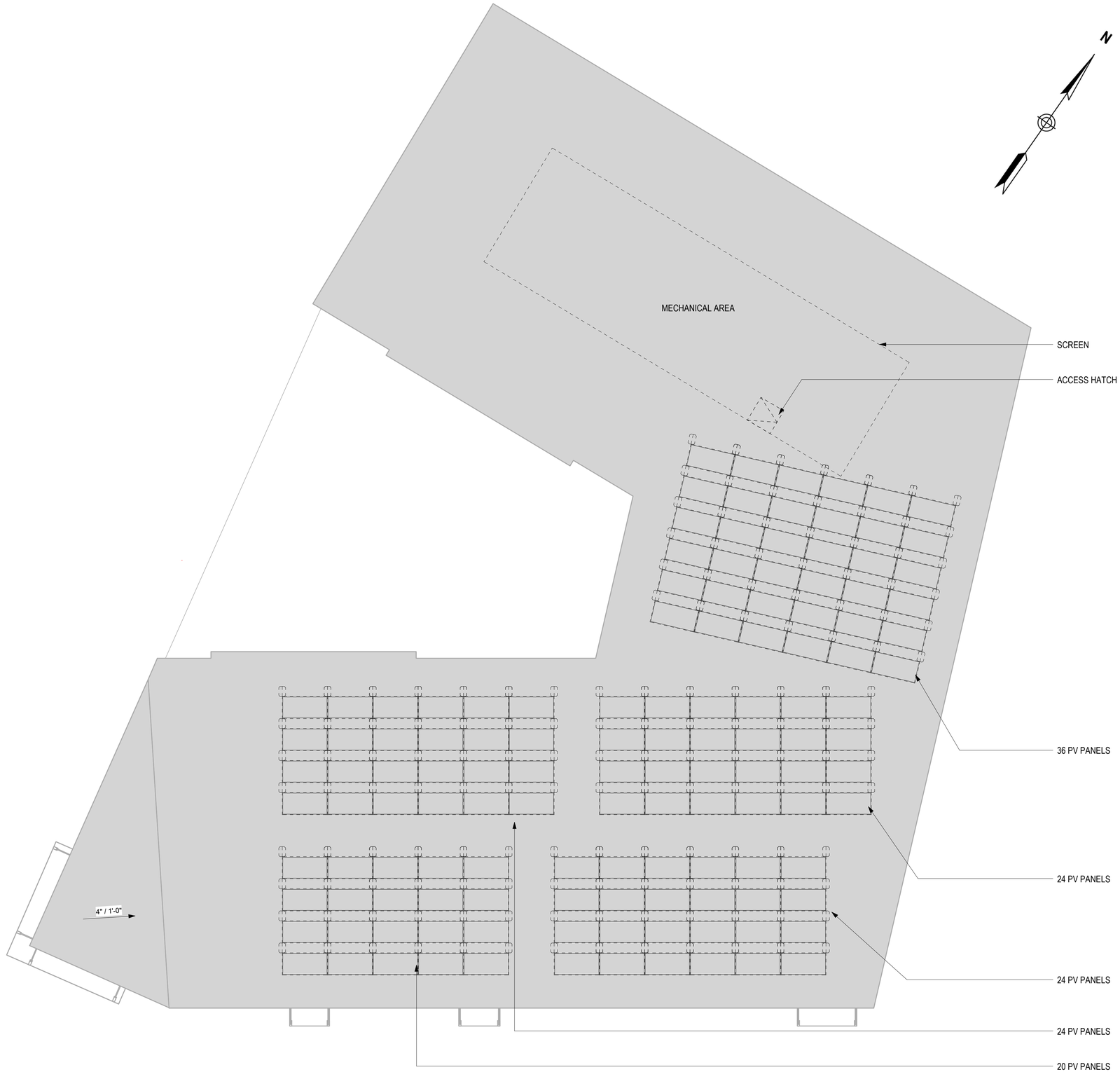

1 ROOF PLAN
1/8" = 1'-0"

GENERAL PLAN NOTES:

- PUBLIC ACCESSIBLE ENTRANCES TO HAVE ADA DOOR OPERATOR AND PUSH BUTTON
- ALL STAIRWELLS TO BE 2 HOUR FIRE RATED
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- BUILDING WILL HAVE NFPA 13 SPRINKLER SYSTEM
- BUILDING TO MEET ALL APPLICABLE BUILDING CODES AT TIME OF CONSTRUCTION

ZONING REGULATIONS:

- MINIMUM YARD SETBACKS
  FRONT: 0' - 10'
  SIDE: 0' - 24'
  REAR: 10' MIN.

EGRESS AND SEPARATION REGULATIONS:

- MINIMUM NUMBER OF EXITS FROM EACH STORY: 2
- MAX TRAVEL DISTANCE: 125'
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- FIRE SEPARATION BETWEEN OCCUPANCY GROUPS TO MEET IBC AND NFPA REQUIREMENTS

GRAPHIC SCALE
0' 4' 8' 16' 32'

P21 -P29

LASSEL ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E. HOUGHANE
No. 04574
STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
ROOF PLAN

DRAWING NUMBER:
PB-05

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Architectural Amenities Include:

- Human scale building forms and details at street level
- Street trees along Broadway
- Building has been brought to lot line on Broadway Street to encourage vibrancy and pedestrian engagement.
- Bicycle racks have been provided on site
- Green roof
- Electric Charging stations
- Roof is PV ready
- 80% windows/doors of the first-floor façade along Broadway.
- Brick base and tower to reinforce relationship to building context and to celebrate Dover's history in brick making
- Tower form at corner of building points to downtown to create a prominent vista along the street and to create an architectural expression and interest at the corner.
- Building edge has been brought to property line to define street edge.
- A public art wall has been incorporated on East corner of building to provide visual interest upon entering the downtown core from further up Broadway. This will also be visible at the St.John's intersection.
- Trees along the edge of the East property line help screen utilities and parking garage edge from adjacent lot.
- Recessed brick banding at base of building to provide visual interest with pattern and depth. Brick banding around the building and change of material helps to break up the building massing.
- Exterior building lighting at ground floor will wash walls and light up entry canopies. Lighting will be warm and ambient while providing a level of security. All lighting will be LED.
- Dumpsters will be screened.
- Acoustical panels have been added to the fence along the train tracks to mitigate train sound on site.
- Colors will be a rich blend of clay brick that is native to downtown Dover, black window frames, and taupe cement board panels. This color palette is harmonious with existing buildings in downtown Dover.
- As part of an effort to deter graffiti, we are proposing use of rich, darker color brick that will not show graffiti as prominently as lighter colors would. Where applicable, anti-graffiti coatings will be applied. Illuminating the building at the night will further prevent opportunities for graffiti.

1 BROADWAY STREET ELEVATION
1/8" = 1'-0"

2 VIEW FROM 12 BROADWAY, LOT 4-3
1/8" = 1'-0"

GRAPHIC SCALE
0' 4' 8' 16' 32'

P21 -P29

LASSEL ARCHITECTS
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SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E HOULIHANE
No. 04574
THE STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
ELEVATIONS - SOUTH-EAST & SOUTH-WEST

DRAWING NUMBER:
PB-06

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Architectural Amenities Include:

- Human scale building forms and details at street level
- Street trees along Broadway
- Building has been brought to lot line on Broadway Street to encourage vibrancy and pedestrian engagement.
- Bicycle racks have been provided on site
- Green roof
- Electric Charging stations
- Roof is PV ready
- 80% windows/doors of the first-floor façade along Broadway.
- Brick base and tower to reinforce relationship to building context and to celebrate Dover's history in brick making
- Tower form at corner of building points to downtown to create a prominent vista along the street and to create an architectural expression and interest at the corner.
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- As part of an effort to deter graffiti, we are proposing use of rich, darker color brick that will not show graffiti as prominently as lighter colors would. Where applicable, anti-graffiti coatings will be applied. Illuminating the building at the night will further prevent opportunities for graffiti.

1 VIEW FROM INTERSECTION OF BROADWAY AND ST JOHN
1/8" = 1'-0"

2 VIEW FROM ABUTTERS ON PIERCE STREET AND RAILROAD
1/8" = 1'-0"

GRAPHIC SCALE
0' 4' 8' 16' 32'

P21 -P29

LASSEL
ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E HOULIHANE
No. 04874
STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
ELEVATIONS - EAST & NORTH

DRAWING NUMBER:
PB-07

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ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

VIEW FROM BROADWAY LOOKING NORTH

VIEW FROM BROADWAY LOOKING SOUTH

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

NORTH:

DRAWING NAME:
STREETSCAPE RENDERING

DRAWING NUMBER:
PB-08

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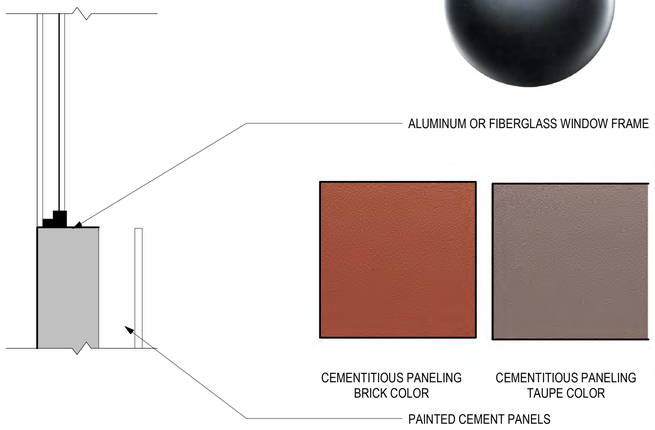
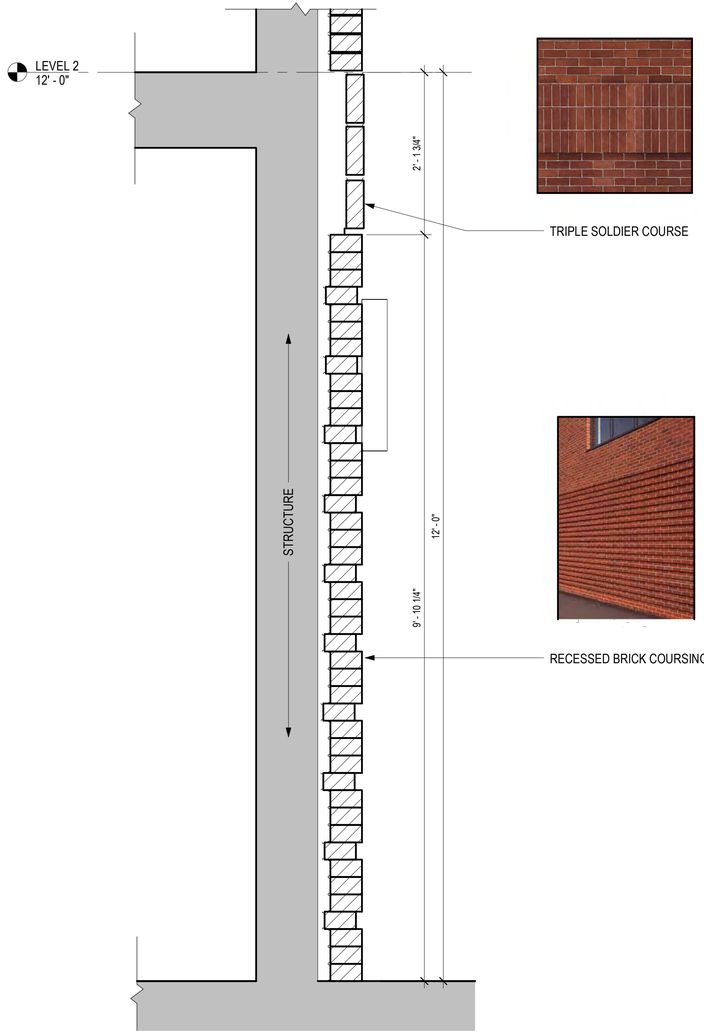
4/24/2024 1:03:55 PM L:\FILES CURRENT\23.35 14 Broadway Dover\8. DRAWINGS\8.2 REVIT\Cyr Dover Apt - TRC- 1 UPDATES - 4.23.24.rvt





1 MATERIAL SECTION
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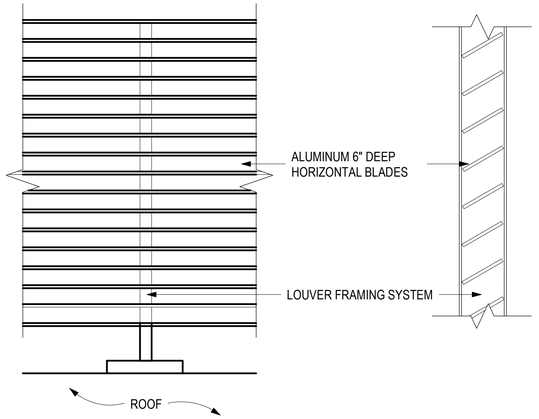
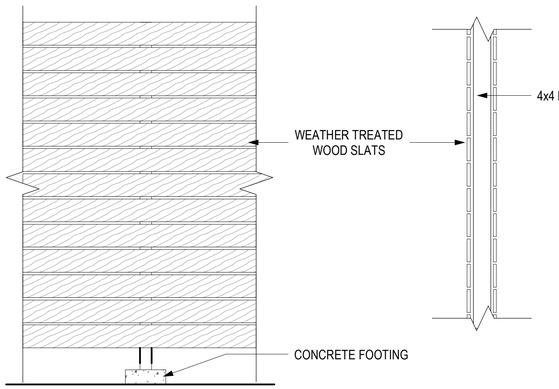
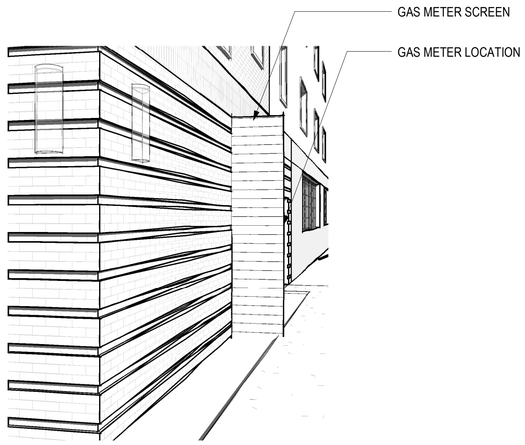


2 ROOF SCREEN DETAIL
1/2" = 1'-0"



3 GAS METER SCREEN
1/2" = 1'-0"



4 GAS METER SCREENING - PERSPECTIVE FROM SIDEWALK FROM BROADWAY

P21 -P29

LASSEL
ARCHITECTS
370 MAIN STREET
SOUTH BERWICK, ME 03908
207 384 2049
lasselarchitects.com

LICENSED ARCHITECT
SARAH E HOULIHANE
No. 04874
THE STATE OF NEW HAMPSHIRE

PROJECT:
14 BROADWAY

ADDRESS:
14 BROADWAY
DOVER, NH

CLIENT:
REGAN DEVELOPMENT
1055 SAW MILL RIVER RD, ARDSLEY, NY

REV: DATE: NOTES:

PROJECT NUMBER: 21.12
NORTH:
DATE: 4/25/24
SCALE: AS NOTED
REVISION:

DRAWING NAME:
ARCHITECTURAL DETAILS

DRAWING NUMBER:
PB-09

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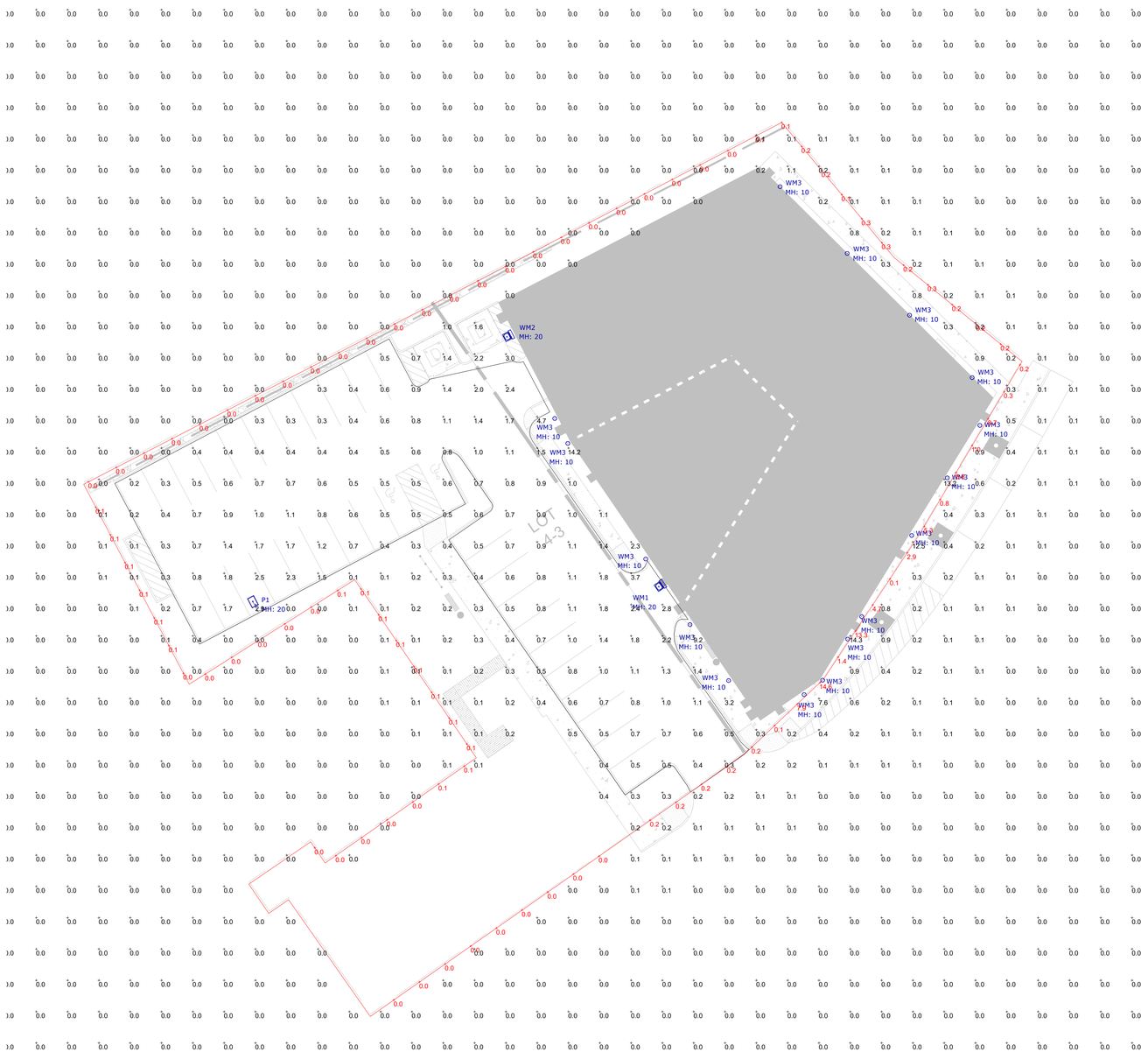
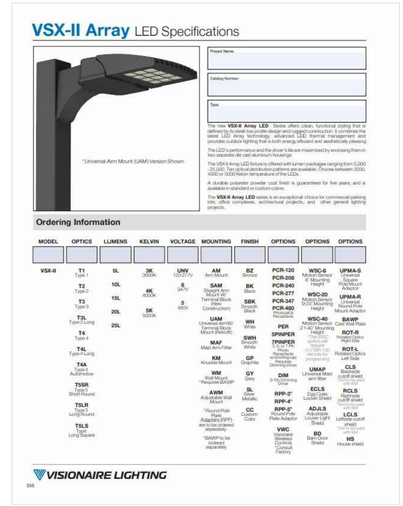


1 Photometric Layout and Calculations

SCALE: 1:20

20' 0 10' 20' 40'



VSX-II Array LED Specifications

"Universal Arm Mount (UAM) Version Shown.

Project Name:

Catalog Number:

Type:

The new **VSX-II Array LED** Series offers clean, functional styling that is defined by its sleek, low-profile design and rugged construction. It combines an advanced LED thermal management technology with precision optics and provides outdoor lighting that is both energy efficient and aesthetically pleasing.

The LED's performance and the driver's life are maximized by enclosing them in two separate die cast aluminum housings.

The VSX-II Array LED fixture is offered with lumen packages ranging from 5,000 - 25,000. Two optical distributions patterns are available. Choose between 3000, 4000 or 5000 Kelvin temperature of the LEDs.

A durable polyester powder coat finish is guaranteed for five years, and is available in standard or custom colors.

The **VSX-II Array LED** series is an exceptional choice for commercial parking lots, office complexes, architectural projects, and other general lighting projects.

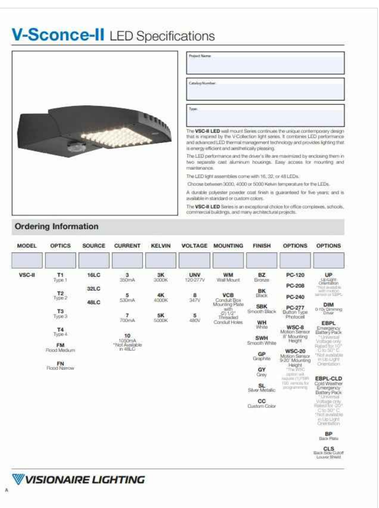
Ordering Information

MODEL	OPTICS	LUMENS	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS	OPTIONS
VSX-II	T1 Type I T2 Type II T3 Type III T3L Type III Long T4 Type 4 T4L Type 4 Long T4A Type 4 Automotive T5SR Type V Short Round T5LR Type V Long Round T5LS Type V Long Square	5L 10L 15L 20L 25L	3K 3000K 4K 4000K 5K 5000K	UNV 120/277V 8 347V 5 480V	AM Arm Mount SAM Square Arm Mount w/ Terminal Block Mount Construction UAM Universal Arm/Pole Terminal Block Mount Assembly MAF Mast Arm Fitter KM Knuckle Mount WM Wall Mount Bracket AWM Adjustable Wall Mount *Round Has Plate Adapters (FPP) are to be ordered separately *SMAFP to be ordered separately	BZ Bronze BK Black SBK Smooth Black WH White SWH Smooth White GP Graphite GY Grey SL Silver Metallic CC Custom Color VWC Visionaire Wireless Lighting Controls Ordered at the Factory	PCR-120 PCR-208 PCR-240 PCR-277 PCR-347 PCR-480 Photocell Receptacle WSC-40 Motion Sensor 31-40' Mounting Height PER SPINPER TPINPER Pendant Mounting (specify color) SPA Square Pole Arm Mounting (specify color) UHAP Universal Mast Arm Rear ECLS Easy Latch Louvre Shield ADJLS Adjustable Louvre Shield BD Barn Door Shield HS House-side Shield	WSC-8 Motion Sensor 8' Mounting Height WSC-20 Motion Sensor 20' Mounting Height UNAP Universal Arm Rear RCLS Round Louvre Shield LCLS Linear Louvre Shield HS House-side Shield	UPMA-S Universal Arm Mount Adaptor UPMA-R Universal Arm Mount Adaptor BAWP Cast Wall Plate ROT-R Rotated Cross Arm ROT-L Rotated Cross Arm Left Side CLS Clamshell On/Off shield RCLS Round Louvre Shield LCLS Linear Louvre Shield

VISIONAIRE LIGHTING

350

2 Visionaire Type VSX II Specifications



V-Sconce-II LED Specifications

Project Name:

Catalog Number:

Type:

The **VSC-II LED** wall mount Series continues the unique contemporary design of the VSX-II LED Series. It combines an advanced LED thermal management and advanced LED thermal management technology and provides lighting that is energy efficient and aesthetically pleasing.

The LED performance and the driver's life are maximized by enclosing them in two separate cast aluminum housings. Easy access for mounting and maintenance.

The LED light assemblies come with 16, 32, or 48 LEDs.

Choose between 3000, 4000 or 5000 Kelvin temperature for the LEDs.

A durable polyester powder coat finish is guaranteed for five years and is available in standard or custom colors.

The **VSC-II LED** Series is an exceptional choice for office complexes, schools, commercial buildings, and many architectural projects.

Ordering Information

MODEL	OPTICS	SOURCE	CURRENT	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS
VSC-II	T1 Type I T2 Type II T3 Type III T4 Type 4 FM Flood Medium FN Flood Narrow	16LC 32LC 48LC	3 350mA 5 530mA 7 700mA 10 1000mA *Not Available in 48LC	3K 3000K 4K 4000K 5K 5000K	UNV 100/277V VCB Conduit Box Mounting Plate (Universal Pattern Included) Conduit Holes WH White SWH Smooth White GP Graphite GY Grey SL Silver Metallic CC Custom Color	WM Wall Mount BK Black SBK Smooth Black WH White SWH Smooth White GP Graphite GY Grey SL Silver Metallic CC Custom Color	PC-120 PC-208 PC-240 PC-277 Button Type Photocell WSC-8 Motion Sensor 8' Mounting Height WSC-20 Motion Sensor 20' Mounting Height EBPL-CLD Cold Weather Emergency Battery Pack BP Barn Door CLS Black Side Cutoff Louvre Shield	UP DIM 0-10V Dimming Driver EBPL Emergency Battery Pack EBPL-CLD Cold Weather Emergency Battery Pack

VISIONAIRE LIGHTING

3 Visionaire Type VSC II Specifications

Type: Job / Ref:

Peachtree LIGHTING

C6BLRUD

6" LED Up & Down Cylinder
4" Aperture Up and 5" Aperture Down

1000 & 1400 Lumens (down)

PRODUCT SPECIFICATION DATA

MECHANICAL
- Powder Coated Extruded .003 Aluminum Cylinder
- Finish exceeds 1000 hr. ASTM salt spray
- Swivel canopy and stem (3/8" ips) for pendant mount matches cylinder color

ELECTRICAL
- Serviceable and upgradeable light engine
- Power supply is overload and short circuit protected
- Single driver supplies power to both LED's
- 0-10V dimming to 1%

OPTICAL
- Self-flanged lower reflector
- 45° cutoff to source
- Medium distribution

PERFORMANCE
- CCT: 3000K, 3500K, 4000K @ 80+ CRI
- 70% lumen maintenance at 60,000 hours based on IESNA LM-79-2008.

LISTINGS
- ANSI/UL 1598 and CAN/CSA C22.2 No. 250.0-08
- Suitable for damp location covered ceilings
- For wet location see -WL option

5 Year limited warranty.

LED

Passive Cooling

0-10v Dimming Standard

Dimensions and specifications in this literature are subject to change.

ORDERING LUMENS @ 3K	DIMMING	COLOR TEMP.	CRI	REFLECTOR	REFLECTOR OPTIONS	FIXTURE FINISH	MOUNTING	OPTIONS	VOLTAGE
C6BLRUD									
4" LED Round Up & Down Cylinder -14 1400 Up, 1400 Down -10 1000 Up, 1000 Down	-DIMLEV 0-10v Dim -TRI Triac *Standard	-3K 3000 K -35K 3500 K -4K 4000 K	-80 80+ -90 90+	-SK Soft Haze -W White -B Black * Powder Coat Paint	-RC Reg. Clear Temp. -RF Reg. Frosted -RCS Reg. Clear Sunb Lens -RFS Reg. Prismatic Temp. Glass Lens -RPS Reg. Prismatic Temp. Glass -TRW Trim Reg White -TRB Trim Reg Black Specify cut-out if Black or W White. Regressed trims baffles retrofits available under one standard	-WH Matte White -BK Matte Black -AB Antique Bronze -AZ Bronze -RAL# ____ Powdercoat Painted	-WALL Wall, Vertical, 8" Offset -WALS Wall, Vertical, 8" Offset adjustable 0° to 10° -CAB-UD-10 Cable w/ straight connector Specify cut-out if Black or W White.	-F Fusing -SL Surge Limiter -WL Wet Location (select lens)	-120/277

Made in the USA

Peachtree LIGHTING

C6BLRUD

4 Peachtree C6BLRUD Speifications

Luminaire Schedule						
Symbol	Label	Qty	Description	LLF	Lum. Watts	Lum. Lumens
	P1	1	Visionaire # VSX-II-T4L-10L-4K-UNV-AM-TBD-DIM-BD	0.900	70	6463
	WM1	1	Visionaire # VSX-II-T4L-10L-4K-UNV-WM-TBD	0.900	70	8888
	WM2	1	Visionaire # VSX-II-T4L-10L-4K-UNV-WM-TBD-DIM-RCLS	0.900	70	6463
	WM3	16	Peachtree # C6BLRUD-10-40K-80-W-RCA-TBD-WAL2-WL-120/277	0.900	17	2042

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PROPERTY LINE	Illuminance	Fc	0.82	14.6	0.0	N.A.	N.A.
SITE CALC PTS	Illuminance	Fc	0.10	14.3	0.0	N.A.	N.A.
LOT 4-3	Illuminance	Fc	0.97	4.7	0.2	4.85	23.50

NOTES:

A. A LIGHT LOSS FACTOR OF 0.900 HAS BEEN APPLIED TO FIXTURES UNLESS OTHERWISE NOTED. REFER TO LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR AND LUMEN INFORMATION.

B. SEE "MH" ON LIGHTING FIXTURE TAG LOCATED ON PLAN FOR MOUNTING HEIGHT INFORMATION.

C. CALCULATION POINTS ARE TAKEN AT GRADE.

D. CALCULATION RESULTS ARE BASED ON IES STANDARDS UNLESS OTHERWISE REQUESTED.

SK & Associates
Experience the light™
20/22 Carver Circle
Canton, MA 02021
JACK 8 SKWATT APPROVED
T - 781-821-1700
www.skandassociates.com

TEC The Engineering Corp
146 Dascomb Rd
Andover, MA 01810

14 Broadway Site

Photometric Layout Calaculations Schedules and Specifications

DATE: 8/26/2021	
PROJECT NUMBER: 211114	
DRAWN BY: AM	
CHECKED BY:AD	
APPROVED BY:AD	
SCALE: AS NOTED	

REVISIONS	DESCRIPTION	DATE
1	Site Lighting & Plan Revisions	10/28/2021
2	Review Comments	12/7/2021
3		
4		
5		
6		
7		

SL1

Plant List - Trees and Shrubs

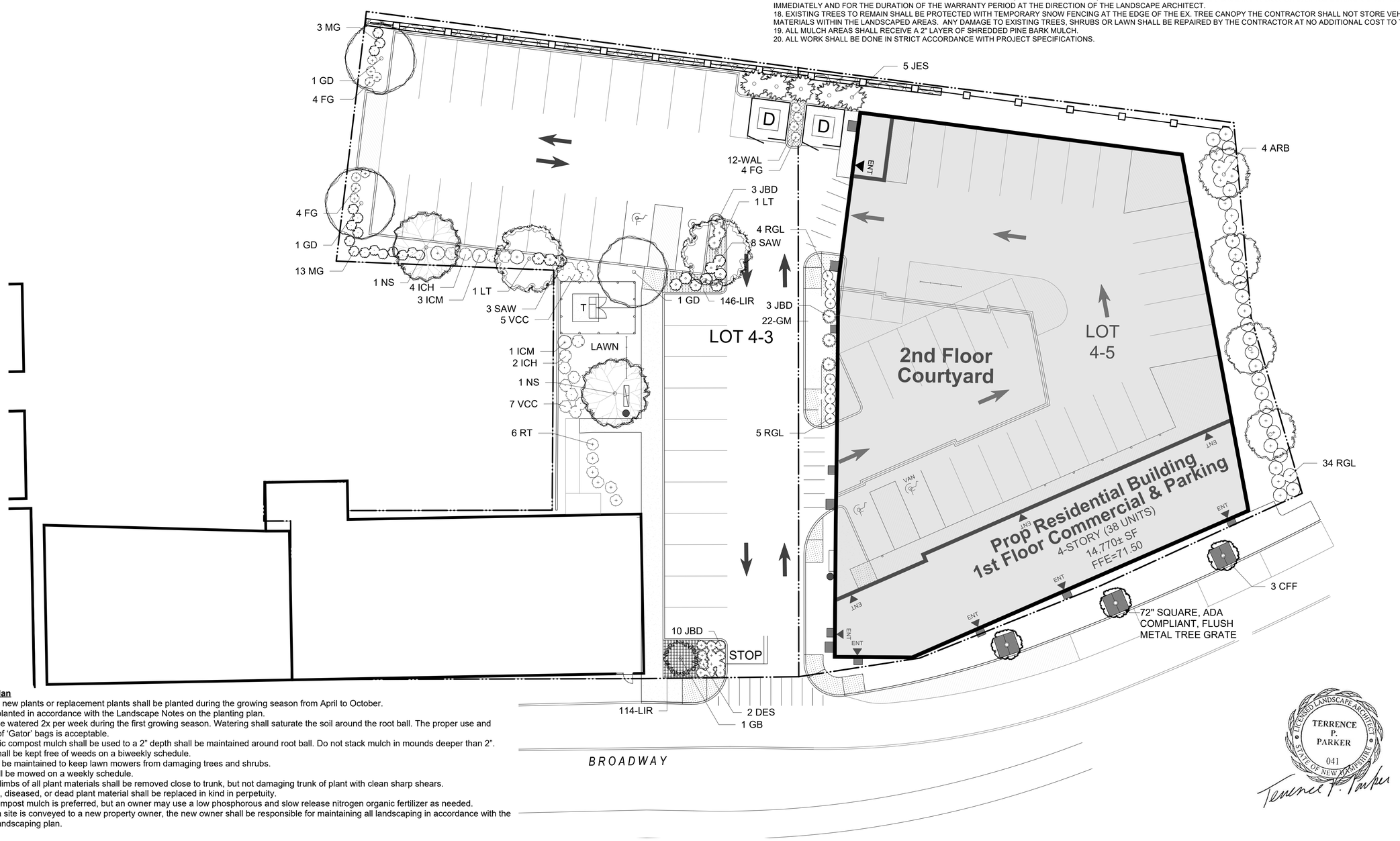
ID	Qty	Latin Name	Common Name	Scheduled Size
ARB	4	Acer rubrum 'Bowhall'	Bowhall Maple	3 1/2" Cal.
CFF	3	Carpinus betulus 'Frans Fontaine'	Frans Fontaine Hornbeam	3 1/2" Cal.
FG	12	Fothergilla gardenii	Dwarf Fothergilla	24" HT.
GB	1	Ginkgo biloba 'Spring Grove'	Spring Grove Maidenhair Tree	3 1/2" Cal.
GD	3	Gymnocladus dioicus	Kentucky Coffeetree	3 1/2" Cal.
ICH	6	Ilex crenata 'Hetzii'	Japanese Holly	24" HT.
ICM	4	Ilex crenata 'Hoogendorn'	Hoogendorn Japanese Holly (Male)	24" HT.
JBD	16	Juniperus communis depressa 'AmiDak'	Blueberry Delight Juniper	5 Gal.
JES	5	Juniperus virginiana 'Emerald Sentinel'	Emerald Sentinel Red Cedar	8-10' HT.
LT	2	Liriodendron tulipifera	Tulip Tree	3 1/2" Cal.
MG	16	Myrica gale	Sweetgale	24" HT.
NS	2	Nyssa sylvetica	Black Tupelo	3 1/2" Cal.
RGL	43	Rhus aromatica 'Gro Low'	Gro Low Sumac	24" HT.
RT	6	Rhododendron 'Towhead'	Towhead Rhododendron	24" HT.
SAW	11	Spiraea x bumalda 'Anthony Waterer'	Anthony Waterer Spirea	5 Gal.
VCC	12	Viburnum carlesii 'Compacta'	Compact Mayflower Viburnum	2' HT

Plant List - Perennials

ID	Qty	Latin Name	Common Name	Scheduled Size
DES	2	Deschampsia cespitosa	Tussock Grass	2 QT
GM	22	Geranium macrorrhizum 'Bevan's'	Cranesbill	2 QT
LIR	260	Liriope spicata	Lily turf	2 QT
WAL	12	Waldsteinia ternata	Siberian Barren Strawberry	2 QT

LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.



Maintenance Plan

Installation of all new plants or replacement plants shall be planted during the growing season from April to October.
Plants shall be planted in accordance with the Landscape Notes on the planting plan.
All plants shall be watered 2x per week during the first growing season. Watering shall saturate the soil around the root ball. The proper use and regular refilling of 'Gator' bags is acceptable.
Aged and organic compost mulch shall be used to a 2" depth shall be maintained around root ball. Do not stack mulch in mounds deeper than 2".
Planting beds shall be kept free of weeds on a biweekly schedule.
Bed edges shall be maintained to keep lawn mowers from damaging trees and shrubs.
Lawn areas shall be mowed on a weekly schedule.
Broken or dead limbs of all plant materials shall be removed close to trunk, but not damaging trunk of plant with clean sharp shears.
Severely injured, diseased, or dead plant material shall be replaced in kind in perpetuity.
Aged organic compost mulch is preferred, but an owner may use a low phosphorous and slow release nitrogen organic fertilizer as needed.
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.

LICENSED LANDSCAPE ARCHITECT
TERRENCE P. PARKER
041
STATE OF NEW HAMPSHIRE

Terrence P. Parker

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
office 603.430.8588 terrence@terrafirmalandarch.com

No.	Date	Issue Notes
B	4/24/2024	PLANNING BOARD REVISION
A	11/24/21	TRC RE-SUBMITAL

Designed By: TP
Drawn By: TC
Checked By: TP
Reviewed By: TP
Submitted By: TP
Project Manager:
Date: 10/26/21
Revision: Revision
Project ID: 14 BROADWAY
Drawing Code: Drawing Code
CAD File Name: 14broadway02221
Plot Date: 00/00/00

Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH
Consultant:

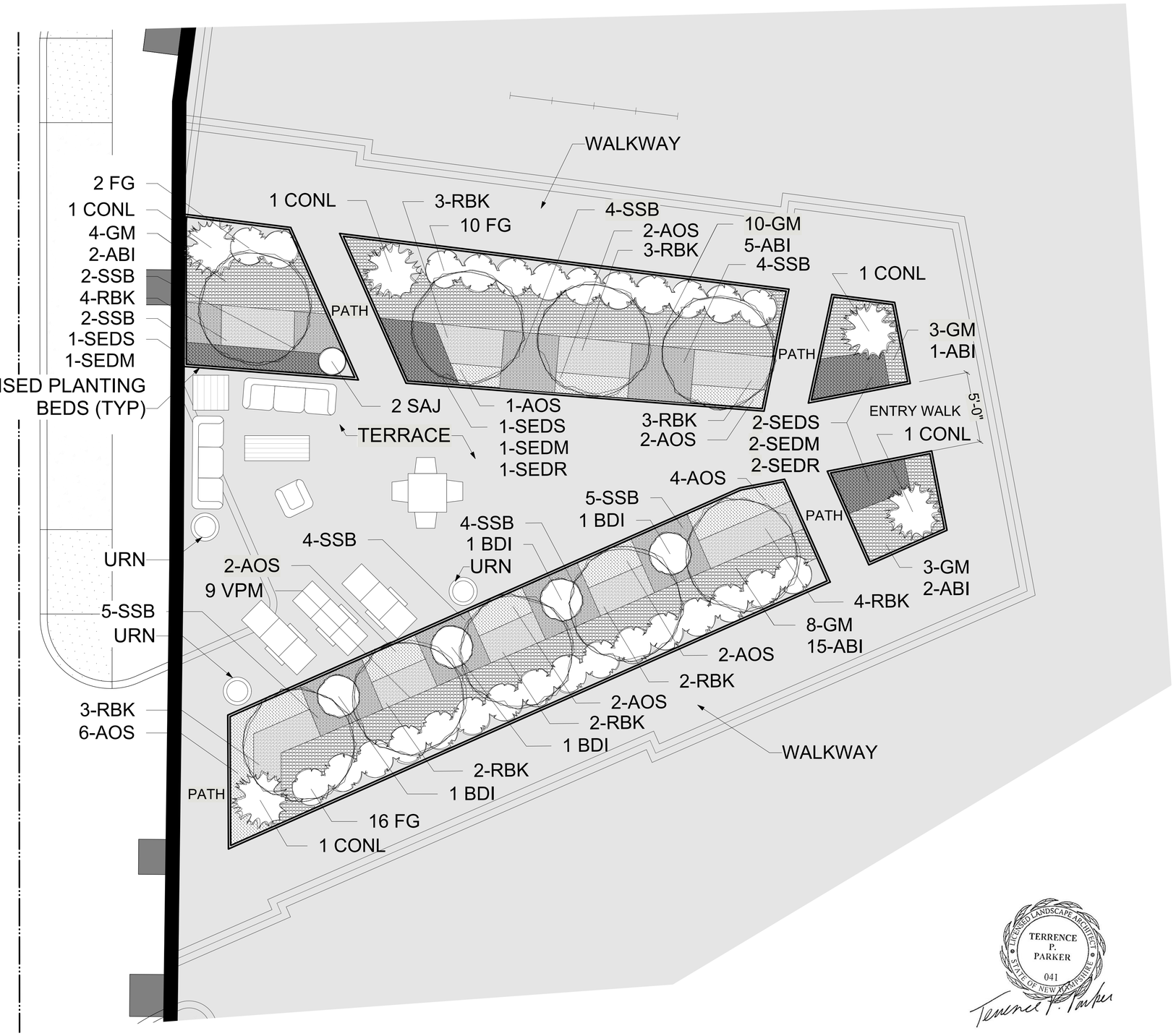
Project Title: 14 BROADWAY
DOVER, NH
Sheet Title: Landscape Plan

Scale: 1"=15'-0"

Sheet No.: L-1
of
1

Plant List - Courtyard Trees				
ID	**Qty**	**Latin Name**	**Common Name**	**Scheduled Size**
BDI	4	Buddlea 'Davidii'	Butterfly Bush	4-5'
CONL	5	Chamaecyparis obtusa 'Nana Lutea'	Compacvt Golden Hinoki False Cyp	5-6'
FG	28	Fothergilla gardenii	Dwarf Fothergilla	5 Gal.
VPM	9	Viburnum plicatum tom. 'Mariesii	Doublefile Viburnum	4'

Plant List - Courtyard Perennials				
ID	**Qty**	**Latin Name**	**Common Name**	**Scheduled Size**
ABI	25	Amsonia 'Blue Ice'	Blue Star Flower	2 QT
AOS	21	Aster oblongifolius 'October Skies'	Aromatic Aster	2 QT
GM	28	Geranium macrorrhizum 'Bevan's'	Cranesbill	2 QT
RBK	26	Rudbeckia fulgida 'Goldsturm'	Black-Eyed Susan	2 QT
SAJ	2	Sedum 'Autumn Joy'	Stonecrop	2 QT
SEDM	4	Sedum 'Matrona'	Matrona Stonecrop	2 QT
SEDR	4	Sedum reflexum 'Angelina'	Stonecrop	2 QT
SEDS	4	Sedum sexangulare	Stonecrop	2 QT
SSB	30	Schizachyrium scoparium 'The Blues'	The Blues Little Bluestem	2 QT



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163-a court street portsmouth, nh 03801
office 603.430.8988 | terrence@terrafirmalandarch.com

No.	Date	Issue Notes
B	4/24/2024	PLANNING BOARD REVISION
A	11/24/21	TRC RE-SUBMITAL

Date 10/22/21
Revision Revision
Project ID 14 BROADWAY
Drawing Code Drawing Code
CAD File Name 14broadway02221
Plot Date 00/00/00

Designed By TP
Drawn By TC
Checked By TP
Reviewed By TP
Submitted By TP
Project Manager

Design Firm terra firma landscape architecture
163 a Court Street
Portsmouth, NH

Consultant

Project Title 14 BROADWAY
DOVER, NH

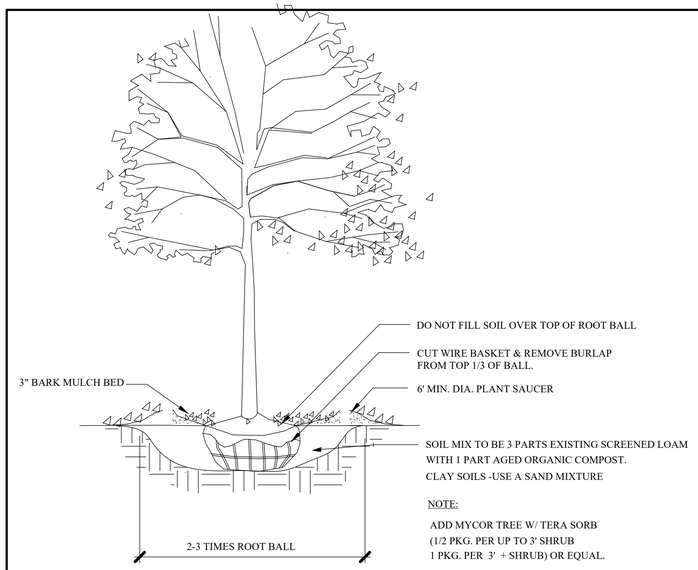
Sheet Title Landscape Plan
COURTYARD

Scale 1"=15'-0"

Sheet No. L-2 of 1

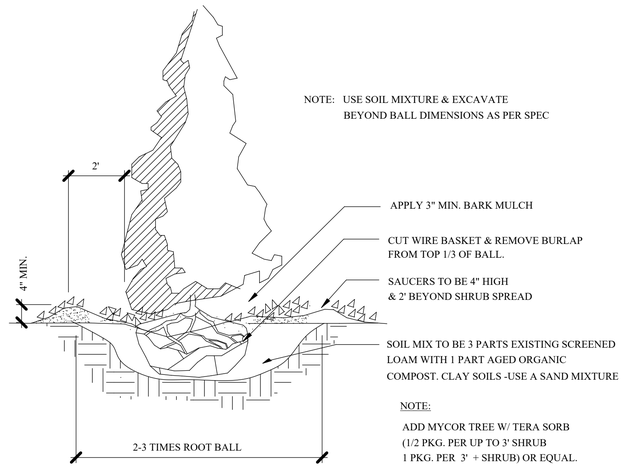
LICENSED LANDSCAPE ARCHITECT
TERRENCE P. PARKER
041
STATE OF NEW HAMPSHIRE

Terrence P. Parker



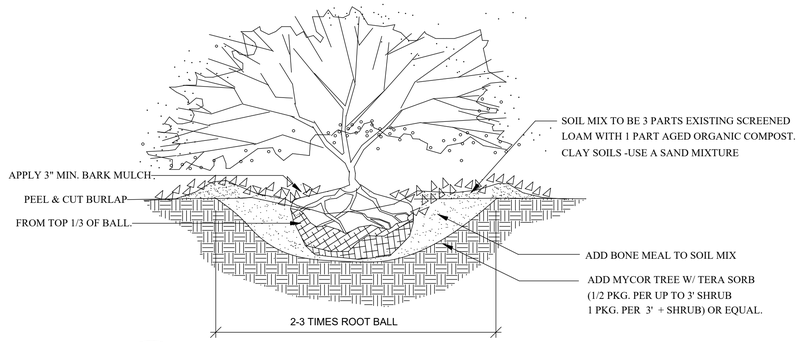
1 L-3

TREE PLANTING - 2"+ CAL.
SCALE: NTS



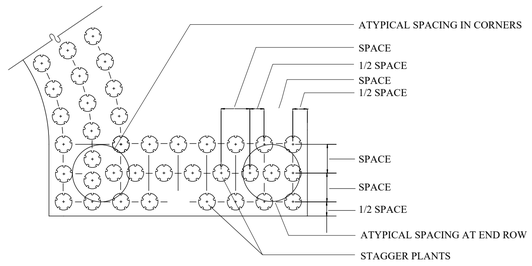
2 L-3

PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS



3 L-3

B&B SHRUB PLANTING
SCALE: NTS

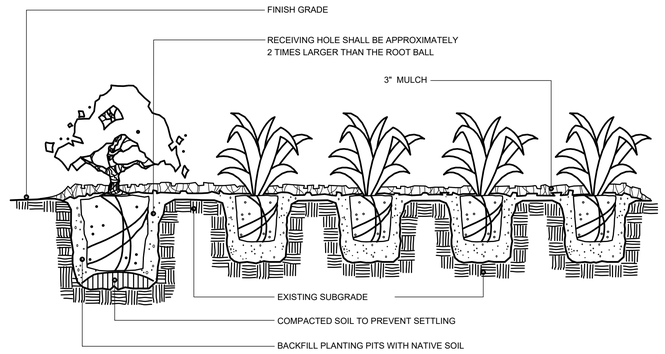


NOTES:

1. PLACE PLANTS IN BED AS SHOWN, SPACING AS SPECIFIED IN PLANT SCHEDULE.
2. GROUNDCOVER SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO STRAIGHT EDGES AND SHALL BE EVENLY SPACED IN ROWS PARALLEL TO CURVE EDGES.

4 L-3

GROUND COVER SPACING DETAIL
SCALE: NTS



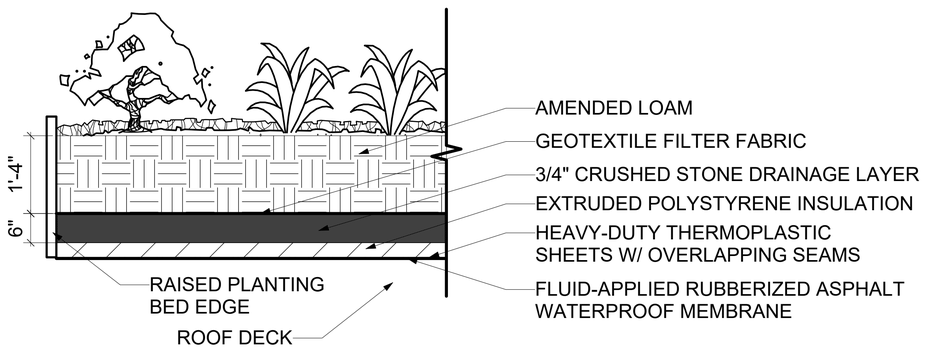
NOTE: SHRUBS SHALL BE PLANTED A MINIMUM OF 1" & NO MORE THAN 2" ABOVE FINISH GRADE, DEPENDING UPON SITE CONDITIONS.

5 L-3

SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS

6 L-3

COURTYARD WOOD PRIVACY HALF-WALL
SCALE: NTS



7 L-3

ROOF GARDEN RAISED BED DETAIL
SCALE: 3/4"= 1'-0"

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
office 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	Issue Notes
B	4/24/2024	PLANNING BOARD REVISION
A	11/24/21	TRC RE-SUBMITAL

Designed By	TP
Drawn By	TC
Checked By	TP
Reviewed By	TP
Submitted By	TP
Project Manager	
Date	9/28/21
Revision	Revision
Project ID	14 BROADWAY
Drawing Code	Drawing Code
CAD File Name	14broadway92221
Plot Date	00/00/00

Design Firm: terra firma landscape architecture, 163.a Court Street, Portsmouth, NH

Consultant:

Project Title: 14 BROADWAY, DOVER, NH

Sheet Title: Landscape Details

Scale: SEE DETAILS

Sheet No.: L-3 of 1

Meeting: Dover Planning Board
Date: 05/14/24
RE: 14 Broadway
Pages 209-236 Agenda and Materials

Dear Members of the Planning Board, May 8, 2024

Upon reviewing the zoning CBD-G it specifically states in the Statement of Purpose: “Both redevelopment and new development should reflect that 250 year old history.” Architectural Standards for more than 5 units state: “Building design shall be harmonious with neighboring structures…., all exterior walls that front on the public way shall with adjacent pedestrian traffic/infrastructure must incorporate wood, brick, stone or a suitable contemporary material detailed within the first 20 vertical feet.

Directly Next door to 14 Broad St:

The distinctive cornice, use of two colors of brick to accent the edge, wooden separations and awnings.

Two clapboard buildings, Papa Jays and a beautifully refurbished colonial with clapboard, distinctive cornices LOTS of character.

Directly Across the Street

Dover Fire Station

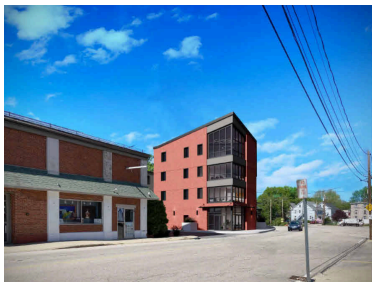
More Classic 1700/1800 Clapboard

New buildings downtown that come to mind are the buildings along the water, which were tastefully designed with white clapboards and decorative balconies. The Robbins building, covered in brick with a beautiful arch front. A mix of modern and the original brick look. The back seemed to have been forgotten but that is what the proposed building looks like-what is currently facing Locus St. The Foster's Building also a tasteful balance of brick with modern features. The red communist building where St Charles used to be, a lesson for all to think about when looking at this proposal, ONE BLOCK from the middle of downtown!

Broadway Views:

An elevator shaft at a Mall?
Orange version of the red building

Broadway side notice front door facing the street,no 20' of brick and some slat wall between store fronts. Orange and gray outer shell?? What kind of Windows? Should be double hung to match the neighborhood.



View from corner of St John and Broadway
No decorative screening on parking area,
No cornice, nothing matches ANY of the adjacent and
Directly abutting homes!! No character whatsoever.

St John St-also colonial style

This building could be real brick for the 20' along the entire bottom and the entire community room areas (elevator tower). Above that, brick vinyl siding could be used and then topped off with a dark or wood clapboard style siding. A cornice could be added as an overhang or a decorative cornice. (see below)
Just an idea Saves money on bricks Wood looking vinyl

There are so many products out there but the long rectangular pieces have no character especially when lined up all in a row as the Saint John Street view shows! This building is the red building in gray and orange.

Architectural Standards state: “Commercial and mixed use buildings that are 25,000sf or more must also incorporate solar panels and a green roof on at least 30 percent of the roof area. This structure is about 51,029sf (3262+11,508+12103+12103+12103=51,079) plus 2757 of courtyard per zoning table (pg 213 of packet). Is that number based only on the footprint or entire building?

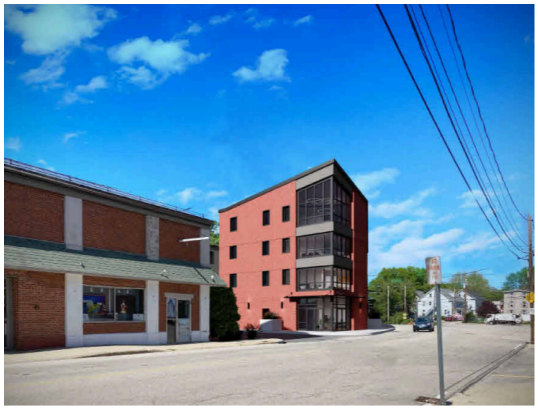
The ten leased parking spaces over a block away will be an issue, especially if there is inclement weather. Will there be a safe, easy access to drop off groceries or other items and then go park the car? Is there a drop off parking space for people to be picked up from. The sidewalks on St John St are often difficult to walk on until a few days after a snowstorm, due to downtown taking precedence. There are quite a few puddles on rainy days. Will all parking spaces be assigned?

Just because a perceived sore spot is being filled in, that does NOT mean its replacement should be a bigger sore spot, much less have not a single characteristic of the buildings and neighborhood that surround it.

Respectfully,

Elizabeth Bratter
16 St John, Property Owner

Propose Broadway View



CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2023-0012

Application Type:	Site Review
Applicant(s):	Jared Lusk, Nixon Peabody LLP / Verizon Wireless
Owner(s):	Lionel R. Jr. & Kristina L. Paradis
Location:	180 Tolend Road (Assessor's Map F, Lot 2)
Meeting Date:	May 14, 2024

INTENT: Proposal is to construct and operate a 104' wireless telecommunications facility at the subject property.

AGENDA ITEM #: 4-B

APPLICANT: Jared Lusk, Nixon Peabody LLP / Verizon Wireless

OWNER: Lionel R. Jr. & Kristina L. Paradis

LOCATION: 180 Tolend Road (Assessor's Map F, Lot 2)

UNITS PROPOSED: N/A

ACREAGE: 55.96± acres

ZONING DISTRICT: IT, R-40

EXISTING LAND USE: Residential, Farmland

PROPOSED LAND USE: Addition of 1 Telecommunications Tower

SURROUNDING LAND USE: Residential

PERMITS: FCC License

WAIVERS REQUESTED: None.

ZBA ACTION: ZONE-2023-0035, Variance granted for location of tower.

ATTACHMENTS: Application materials including site plan

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

TRC: 9/7/2023 & 11/02/2023

Summary of Request and Background
The applicant is proposing to construct and operate a 104' wireless telecommunications facility at the subject property. The applicant, Verizon Wireless, has identified service inadequacies in the City of Dover and proposed the project and location to remedy the service deficiencies.

Prior to review by the Planning Board, the Zoning Board of Adjustment approved a Variance on July 20, 2023, to permit construction of a wireless telecommunication tower at the subject property within the IT Zoning District.

This application was before the Technical Review Committee on September 9, 2023 and November 2, 2023 (minutes attached).

Consistency with Land Use Regulations
Chapter 170-22 of the Zoning Ordinance of the City Code provides for review of new telecommunications facilities by the Planning Board. Exhibit D in the applicant's package outlines how the criteria have been met.

Chapter 153-4 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 the Planning Board accept the application, open the public hearing, make findings, and vote to approve the Site Plan with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of the Plans:

1. The applicant shall provide:
    a. a digital version of plan set
    b. a revised current use plan to the Assessing Department's satisfaction
2. The applicant must revise final plan set to:
    a. Add the owner's signatures to the final plat
    b. Add LLS and PE signatures and stamps to final plan

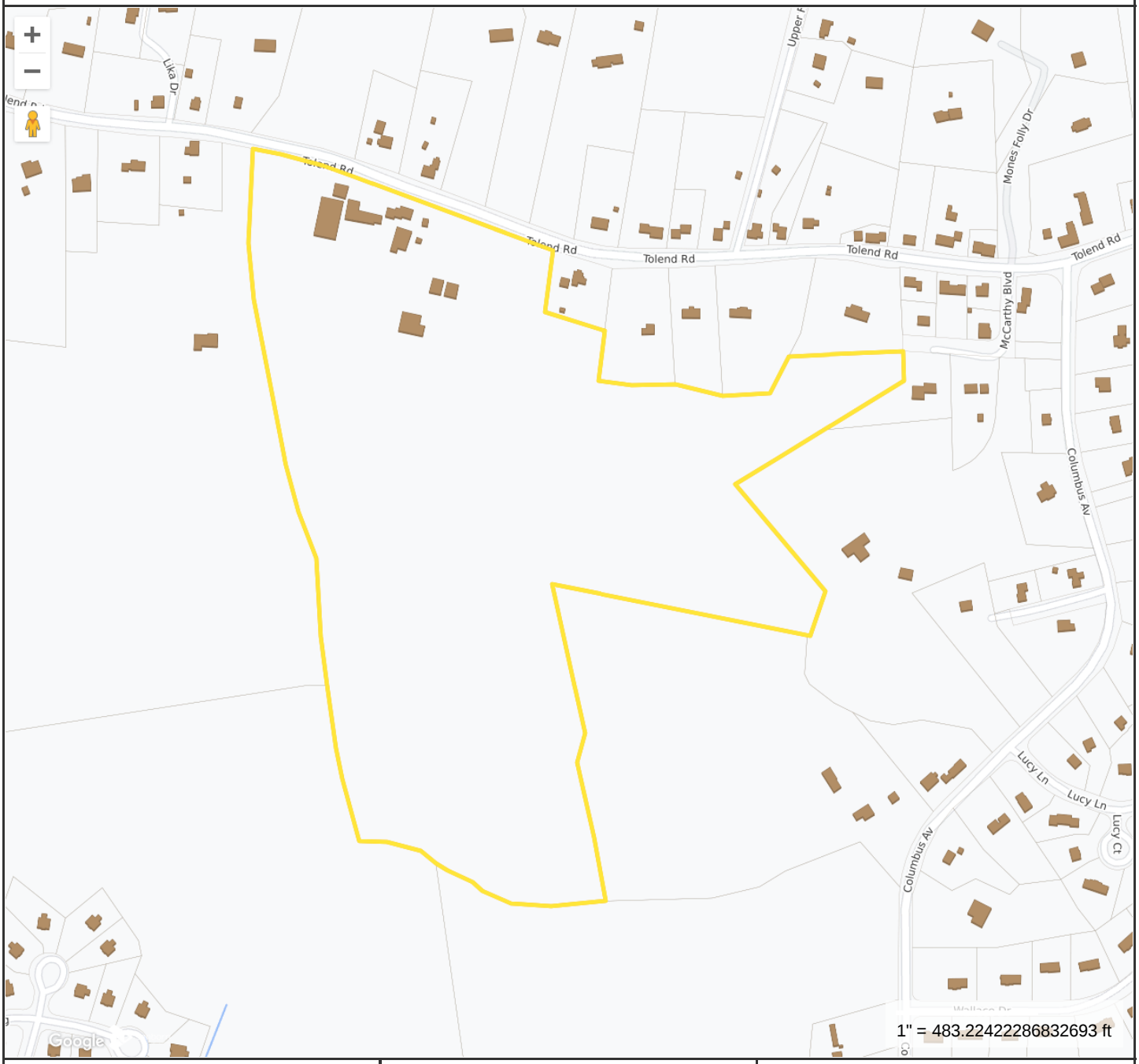
Subsequent Condition to Be Met Prior to Construction:

3. A 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 Conditions to Be Met Prior Completion:

4. Issuance of Certificate of Completion;
5. Payment of Impact Fees as noted in the invoice attached to the Decision Letter unless a change is made to the impact fee policy;
6. Surety or other form of security acceptable to the City is provide for any unfinished work.

SITE-2023-0012 180 TOLEND ROAD



Property Information

Location	180 TOLEND RD
Owner	PARADIS LIONEL R JR &
Land Use	
Zoning Code	IT*
Property Id	F0002-000000

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-2023-0012
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	08/11/2023
Work Class:	New Construction	**District:**	None	**Exp Date:**	10/15/2023
Status:	Review Expired	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**		**Approval Expire Date:**	

Description: Construction and operation of a 104' wireless telecommunications facility.

Parcel: F0002-000000 Main	**Address:** 180 Tolend Rd Dover, 03820 Main	**Zone:** IT(Non-Residential - Innovative Technolo R-40(Residential - Rural)

Applicant
Mark Beaudoin
Business: (603) 628-4025

Applicant
Jared Lusk
1300 Clinton Square
Rochester, NY 14604
Business: (585) 263-1140
Mobile: (585) 730-2562

Plan Custom Fields

Total	0	Total2	0	Total3	0
Total4	0	Total5	0	Total6	0
Total7	0	Total8	360	Total9	0
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	2	Water Service	Not Applicable
Recording Number		Sewer Service	Not Applicable	Total Acres (GIS)	55.95
Deed Book	1868	Total SQFT	2.43718e+006	Deed Page	382
Deed Date	19960613	Proposed Property Use	Wireless telecommunications facility.	Area of Parcel to be Developed (SQFT)	360
Number of Parking Spaces Existing	0	Number of Parking Spaces Proposed	2	Number of Employees Total	0
Number of Employees in Max Shift	0	Type of Building to be Built	Telecommunication Tower	Estimated Construction Value	150000.00
Refuse Removal	Private	Existing Conservation Easement Details		TotalImpactFeeSDTOD	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	Sub Total Residential	0.00
TotalImpactFeeRIRCTOD	0.00	TotalImpactFeeOCSTOD	0.00	TotalImpactFeeITWCTOD	0.00
TotalImpactFeeNHALTOD	0.00	TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOTOD	0.00
Sub Total Non-Residential	0.00	Total of Impact Fees to be Assessed	0.00		

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Jared_Lusk_8/11/2023.jpg	08/11/2023 13:18	Lusk, Jared		Uploaded via CSS
SITE-2023-0012 Snapshot Report.pdf	08/16/2023 12:27	Blonigen, Rachel		
2023.09.07_PlanningTechnicalReviewCommittee.Agenda.pdf	08/22/2023 17:11	Blonigen, Rachel		
2023.09.07_PlanningTechnicalReviewCommittee.TolendRdTower_SITE-2023-0012.pdf	09/11/2023 12:15	Blonigen, Rachel		DRAFT TRC MINUTES
2023.11.02_PlanningTechnicalReviewC	10/19/2023 10:33	Blonigen, Rachel		

ommittee.Agenda.pdf

2023.11.02_PlanningTechnicalReviewCommittee.TolendRdTower_SITE-2023-0012.pdf	12/05/2023 12:45	Blonigen, Rachel	Draft TRC

Note	Created By	Date and Time Created
1. Emailed applicant for 4 more copies of the application for TRC-RLB	Rachel Blonigen	08/31/2023 15:07
2. resubmit for unofficial TRC meeting	Jean Glidden	11/02/2023 15:43
3. Emailed applicant to request copies of materials for PB meeting	Rachel Blonigen	04/19/2024 14:43

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00004636	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-00004636	$200.00	$200.00
	Grand Total for Plan	**$200.00**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	09/07/2023	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/31/2023	09/28/2023	11/02/2023	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Comments: Our comments for the telecommunications tower:
- The proposed location does not appear to negatively impact business operations and appears to close an important coverage gap.
- Business Development has received public testimony in support of this application.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023
Planning	Planning	Benton, Donna	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023
Zoning Administrator	Planning	Kypfer, Natasha	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.2	Requires Re-submit	10/18/2023	10/31/2023	12/05/2023	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development		Not Required	10/18/2023	11/15/2023	04/03/2024

PLAN SNAPSHOT REPORT (SITE-2023-0012)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering		Requires Re-submit	10/18/2023	10/31/2023	04/03/2024

Comments: • Recommend Inspection Service comment on whether or not plowing the facility would pose an issue for fire safety.
• Recommend paving driveway apron at a minimum to prevent erosion.
• Project appears to disturb more than 20,000 sf of area (including areas with proposed utility trenching). Therefore a stormwater management plan (153-14.2.a.2) would be required or a waiver requested from the requirement. Materials did not include a drainage study to review.
• Provide drainage study that shows compliance with 153-14.A.3.b.
• Please identify the location of proposed lighting on the plans. The response to comments refers to detail 4 on D-2 but the detail was not found.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services		Requires Re-submit	10/18/2023	10/31/2023	04/03/2024

Comments: Provide T-1 turning template. Could not locate M-1 as indicated in response.
Provide minimum width of Fire dept. access road. USDA access road information does not appear to reflect site conditions.
Access Road shall be accessible year round in all weather conditions.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning		Requires Re-submit	10/18/2023	11/15/2023	04/03/2024

Comments: • The police department supports this project for the anticipated improvements to public safety in telecommunication coverage.
• Thank you for providing the Photographic simulation and Viewshed imagery, it appears to answer the previous concerns.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning		Requires Re-submit	10/18/2023	10/31/2023	04/03/2024

Comments: • Provide letter to serve from electric company
• Public safety impact fee will be invoiced
• Revise plans:
o Owner's signatures on the final plans
o Professional stamps on the final plans
o Add file number to plan set, SITE-2023-0012 on all sheets
o Privacy slats on fence

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police		Requires Re-submit	10/18/2023	10/31/2023	04/03/2024

Comments: • The police department supports this project for the anticipated improvements to public safety in telecommunication coverage.
• Thank you for providing the Photographic simulation and Viewshed imagery, it appears to answer the previous concerns.

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		08/16/2023 12:35	04/03/2024 12:46
Confirm application complete v.1	Generic Action		08/16/2023 12:35
Technical Review Committee Meeting Agenda v.1	Task	08/16/2023 12:38	08/28/2023 10:19
Land Use Plan Technical Review v.1	Receive Submittal	08/31/2023 0:00	09/11/2023 12:21
~~Land Use Plan Technical Review v.2~~	Receive Submittal	10/18/2023 0:00	04/03/2024 12:46
Technical Review Committee Meeting v.1	Hold Meeting	10/18/2023 12:55	11/02/2023 15:35
Technical Review Committee Meeting v.1	Hold Meeting	10/18/2023 12:54	10/18/2023 12:55
Planning Board v.1		04/03/2024 12:46	
Planning Board Agenda v.1	Task	04/03/2024 12:46	
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		

PLAN SNAPSHOT REPORT (SITE-2023-0012)

NOD Sent to Applicant v.1	Create Report
Final Plan v.1	
Land Use Plan Final Review v.1	Receive Submittal
Land Use Plan Stamped and Signed v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Recording v.1	Task
Property Info Group 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 Complex v.1	Create Sub Permit
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit

NIXON PEABODY

Nixon Peabody LLP
900 Elm Street
Manchester, NH 03101-2031

Attorneys at Law
nixonpeabody.com
@NixonPeabodyLLP

Mark E. Beaudoin
Partner

T / 603.628.4025
F / 844.688.1657
mbeaudoin@nixonpeabody.com

April 18, 2024

VIA ELECTRONIC MAIL

Planning Board
City of Dover
288 Central Avenue
Dover, NH 03820

RE: Cellco Partnership d/b/a Verizon Wireless' application (the "Application") to the City of Dover for site plan approval to construct and operate a 104′ wireless telecommunications facility at 180 Tolend Road (Tax Map # F-2-0-0) in the City of Dover, Strafford County, New Hampshire (Verizon Wireless' "Dover West" cell)

Dear Members of the Planning Board:

Cellco Partnership d/b/a Verizon Wireless ("**Verizon Wireless**") is a public utility and wireless telecommunications licensee of the Federal Communications Commission ("**FCC**"). To remedy service inadequacies in and around the City of Dover (the "**City**"), Verizon Wireless proposes to construct and operate a 104′ wireless telecommunications facility located at 180 Tolend Road (Tax Map # F-2-0-0) in the City of Dover, Strafford County, New Hampshire (the "**Project Site**").

The Project Site consists of a 60′ x 60′ fenced compound within which a 104′ monopole will be constructed, together with antennas and associated equipment, all as shown on the enclosed site plan prepared by Proterra Design Group LLC attached hereto as Exhibit K (the "**Site Plan**").

The Project Site is located within the City's IT zoning district. Pursuant to §170-22(C) of the City's Zoning Ordinance (the "**Ordinance**"), new wireless telecommunications towers, are not permitted within the IT zone. On July 20, 2023, the City Zoning Board of Adjustment granted the necessary variance to permit construction of the project at the Project Site. A copy of the ZBA Notice of Decision is enclosed in Exhibit M. Site plan approval from the Planning Board will also be required.[1]

Accordingly, please accept this letter and the following exhibits and enclosures as Verizon Wireless' application for site plan approval from the Planning Board.

Exhibit A: Completed City-supplied Planning Board application forms;

---

[1] Verizon Wireless has been involved in the TRC process since the Fall of 2023 and received TRC approval at the TRC's April 10, 2024 meeting.

Exhibit B:	Project description;
Exhibit C:	Proof of compliance with applicable legal standards;
Exhibit D:	Proof of compliance with the City's requirements for Telecommunications Facilities as set forth in § 170-22 of the Ordinance;
Exhibit E:	Proof of compliance with the City's site plan application requirements and site design and development criteria as set forth in §§ 153-6, 153-13 through 153-15 of the City of Dover Ordinance;
Exhibit F:	Copy of recorded Memorandum of Lease evidencing Verizon Wireless' Rights to the Project Site.
Exhibit G:	Radio frequency ("RF") Report, with propagation studies, demonstrating the need for the Project at the requested location ("RF Report");
Exhibit H:	Site Plan;
Exhibit I:	Copy of Verizon Wireless' FCC licenses;
Exhibit J:	Proof of compliance with federal regulations;
Exhibit K:	Verizon Wireless' co-location policy;
Exhibit L:	List of abutters; and
Exhibit M:	Proof of variance from Zoning Board of Adjustment for the Project.

The required $200 site plan application was fee will be paid via credit card through the zoning application portal.

We respectfully request that this Application be placed on the agenda for the next available Planning Board meeting. Please confirm the date that we will be on the agenda as soon as that information becomes available. In the meantime, should you have any questions or require additional information, please do not hesitate to contact me.

Thank you.

Sincerely,

Mark E. Beaudoin

JCL/mkv
Enclosures
cc: Chip Fredette

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION (ZONING)

IMPORTANT
Property identification sign must be posted on the property for five (5) days prior to the hearing. Failure to post may result in application not being accepted.

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / City of Dover Zoning 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: Lionel R. Paradis, Jr. and Kristina L. Paradis

Signature(s) of Property Owner(s): [signature] Date: 6/7/2023

Signature of Applicant: [signature] Date: 06/14/2023
if different from owner

Mark E. Beaudoin, Esq., Nixon Peabody LLP, Attorneys for Verizon Wireless

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I/We hereby submit this application to the City of Dover Zoning 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: Lionel R. Paradis, Jr. and Kristina L. Paradis

Signature(s) of Property Owner(s): [signature] Date: 6/7/2023

Signature of Applicant: [signature] Date: 06/14/2023
if different from owner

Mark E. Beaudoin, Esq., Nixon Peabody LLP, Attorneys for Verizon Wireless

SIGNATURE PAGE

THIS SECTION OF THE APPLICATION MUST BE COMPLETED BY ALL APPLICANTS

I, the undersigned Applicant, hereby certify that the information contained within this Application is complete and accurate, and I acknowledge that I have read and understand the Application Instructions, which are set forth on the first two pages of this Application form.

IMPORTANT
PROPERTY IDENTIFICATION SIGN MUST BE POSTED ON THE PROPERTY FOR THE 5 DAYS PRIOR TO HEARING.
FAILURE TO POST MAY RESULT IN APPLICATION NOT BEING ACCEPTED.

Signature of Applicant*

Signature of Owner*

*Both Signatures Required

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Zoning 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: 6/7/2023

CHRISTOPHER G. PARKER, AICP
Assistant City Manager
Planning & Strategic Initiatives
c.parker@dover.nh.gov

288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6008
Fax: (603) 516-6049
www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

INSTRUCTIONS TO APPLICANTS TO THE DOVER PLANNING BOARD

IMPORTANT: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE FILLING OUT ATTACHED APPLICATION.
INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED FOR REVIEW.

Dear Applicant:

This will serve to briefly inform you regarding the process to have the Dover Planning Board (the Board) review a land use application. Please refer to the NH Statutes on Land Use and Regulation the Dover Code, and our Developer's Handbook for more specific information.

The Board primarily reviews 5 types of applications:

1. **Site Plans** - A site plan is a professionally rendered drawing which delineates the proposed development of a site. This plan is required for non-residential development, creation of multi-family residential structures, and for extensions of parking lots and alteration of an acre or more of land. These plans require meeting with the Technical Review Committee before Planning Board review.

2. **Subdivisions** - A subdivision is the division of the lot, tract, or parcel of land into two (2) or more lots, plats, sites or other divisions of land for the purpose, whether immediate or future, of sale, rent, lease or building development. It includes re-subdivision and, when appropriate to the context, relates to the process of subdividing or to the land or territory subdivided. Major subdivision plans (4+) require meeting with the Technical Review Committee before Planning Board review.

3. **Lot Line Adjustments** - A lot line adjustment alters the size of two (2) or more lots, but does not create a new buildable lot.

4. **Conditional Use Permits** - A conditional use permit is required for any alteration of wetlands, wetland buffers or work within the City's conservation district. Additionally, a conditional use permit could be issued as to offer relief in the Central Business District, for plans in the Residential Mixed Use Overlay District, or parking relief. Environmental Conditional Use Permits are acted on after Conservation Commission review.

5. **Excavation Permits** – NH RSA Chapter 155-E grants municipalities the authority to regulate earth excavations within their borders. This authority rests with the Planning Board.

The Board cannot and will not review applications that do not meet zoning requirements. **Please review the need to apply to the Zoning Board of Adjustment prior to applying to the Board.**

Professional agents will prepare your application; however, you may represent yourself or authorize, in writing, someone else to represent you before the Planning Board.

In most cases, 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, and a PDF, need to be provided, along with payment of plan review fees. These meetings occur on Thursday, and materials and payment must be submitted three (3) weeks prior to meeting. Meetings are scheduled, upon receipt of completed applications with the full checklist and payment.

The next step would be to provide, two weeks prior to Planning Board, the final plan sets (three (3) full size and twelve (12) half size (11x 17), folded, copies of the plan), and 15 copies, and a PDF, of all supporting materials, including response to TRC comments. Please print all materials on both sides of paper.

For projects not appearing before the Technical Review Committee, Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and 15 copies, plus a PDF, of plans and materials, 3 weeks prior to the Planning Board meeting. Please print all materials on both sides of paper.

Staff will generate an abutter list, and Abutter/Notice Fees will be invoiced. They are due 28 hours prior to Planning Board. If they are not paid, the application will not be heard.

Once an item is placed upon an agenda the following process is used:

- The Board will hold a public hearing on your application at a regularly scheduled meeting
    - Typically the second or fourth Tuesday of the Month.
- Public notice of the hearing will be posted at the City Clerk's office and the Planning Department office and printed in the newspaper.
- Certified letters will be mailed to you and to all abutters at least ten days before the date of the hearing.
- 28 hours prior to the meeting, abutter/notice fees must be paid
- At the meeting
    - Staff will introduce your project
    - You and all other parties will be invited to appear in person or by agent or counsel to present your application.
        - Your project will be pre-loaded onto a laptop for review by the Board and public
    - The Board may ask clarifying questions
    - The Board will vote to accept jurisdiction on the application
    - If accepted:
        - The Board will hold a public hearing
        - The Board may ask additional questions
        - The Board will deliberate on your application
            - Typically decisions are made the night of the presentation, but an application may be tabled
        - After deliberation, a decision will be made.
            - You will be sent a notice of the decision.

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: Cellco Partnership d/b/a Verizon Wireless Telephone # (585) 263-1140 (Jared Lusk, Esq.)

Address of Applicant: 900 Chelmsford Street, Tower 2, Floor 5, Lowell, MA 01851

E-Mail Address: jlusk@nixonpeabody.com

Name of Property Owner (*if different from applicant*): Lionel R. Paradis, Jr. & Kristina L. Paradis Telephone #

Address of Property Owner: 180 Tolend Road, Dover, NH 03820

PROPERTY INFORMATION

Address of Property: 180 Tolend Road, Dover, NH 03820

Assessor's Map # F-2-0-0 Lot(s) #

Zoning District(s) IT Overlay District(s) N/A

Size of Parcel: sq. ft. 55.96 ac. Property Deed: Book 1868 Page: 382

Existing Use of Property: Agriculture

SITE PLAN INFORMATION

Describe Proposed Use: Construction and operation of a 104' wireless telecommunication facility.

Area of Parcel to be Developed: 3600 sq. ft.

If Multi-family Residential: Number of Units N/A & Buildings Proposed N/A

If lodging: Number of Units N/A & number of Buildings N/A

Number of Parking Spaces: Existing 0 Proposed 1-2

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

Number of Employees Total: N/A In Maximum Shift:

Disposition of Parcel:

Building Footprint N/A sq. ft.

Total Building Area 3600 sq. ft.

Paved Area 0 sq. ft.

Building Setbacks:

Front Yard N/A ft.

Rear Yard N/A ft.

Side Yard: Right N/A ft. Left N/A ft.

City Water? ___Yes _X_ No How far is city water from the property? _____

City Sewer? ___Yes _X_ 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:

Not applicable.

BUILDING INFORMATION

Type of Building to be Built: N/A

Height of Building: N/A Finished Floor Elevation: N/A

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: N/A

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Northeast Survey Consultants

Address 3 Ferry Street, Studio 1, East Hampton, MA Telephone #: (413) 203-5144

Professional License #: 489 E-mail address: _____

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) ProTerra Design Group, LLC

Address 4 Bay Road, Building A, Suite 200, Hadley, MA 010353 Telephone #: (413) 320-4918

Professional License #: _____ E-mail address: _____

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.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A 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: See Exhibit A and Exhibit F Date: _____

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: See Exhibit A and Exhibit F Date: _____

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: See Exhibit A and Exhibit F Date: _____

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: See Exhibit A and Exhibit F Date: _____

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

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

See Exhibit L

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: Cellco Partnership d/b/a Verizon Wireless File Number: _____

PROJECT TITLE: Verizon Wireless' Dover W NH Site

PROPERTY LOCATION: 180 Tolend Road Tax Map: F-2-0-0 Lot: ____

	Where/How Provided	Reviewed
1. **Completed and signed Application form**	Exhibit A	
2. **Plan Review Fees are provided**	Credit card to portal	
3. **Electronic copy of the engineered/surveyed plan layout**	Via portal	
4. **Electronic copy of supplementary materials and application**	Via portal	
5. **Traffic Impact Assessment and Analysis (Standard or Advanced)**	N/A	
6. **Waiver requests to the Site Plan Review Regulations, with written justification**	N/A	
7. **Conditional Use Permit applications**	N/A	
8. **A colored rendering of the streetscape that will be created along the existing public right-of-way**	N/A	
9. **A colored architectural plan showing all sides of buildings**	N/A	
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:**	See Exhibit H	
Location map at appropriate scale	Sheet A-1	
Proposed Project name and title and Planning File #	Sheet A-1	
Date, north arrow and scale	Sheet A-1	
Names of all abutting property owners	Sheet C-1	
Name and address of owners and/or applicants	Sheet T-1	
Signature & stamp of NH licensed land surveyor and/or engineer	Sheet C-1	
Zoning District boundaries, including any special or overlay districts	Sheet A-1	
Location of Conservation District areas	Sheet A-1	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	N/A	
Location and widths of existing & proposed easements & right of ways	Sheet A-1	
Location and width of existing and proposed access/egress ways	Sheet A-1	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Sheet A-1	
Existing and proposed topographic information at two foot intervals	Sheet C-2	
Existing and proposed buildings and structure locations	Sheets C-1/C-2	
Minimum building setbacks or build to lines on all lots	N/A	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Sheets C-1/A-1	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	N/A	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	N/A	
Existing and proposed stormwater lines and facilities	N/A	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	Sheet D-2	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	Sheet A-1	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Sheet A-1	
Existing natural features and/or significant vegetation on property	Sheet A-1	
Depict existing contours up to 100 ft. beyond project limits	Sheet C-2	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Sheet A-2	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Sheet A-2	
Location, material and size of existing and proposed pavement area	N/A	
Location of proposed fire lanes	Sheet A-1	
Specify finished floor elevations of buildings	N/A	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	N/A	
Depict all service, storage, loading bays and utility areas	Sheet A-2	
All applicable Dover Common Site Plan notes	Sheet A-1	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Sheets EC-1 and EC-2	
Stormwater Management System Operation and Maintenance Plan	TBD	
Letter to Serve from Public and Private Utilities	TBD	
Erosion and Sedimentation Control Plan	Sheets EC-1 and EC-2	
Landscape Operation and Maintenance Plan		
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	N/A	
If wetland buffer, indicate placards locations, as applicable	N/A	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Sheets EC-1 and EC-2	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	See the Site Plan package.	

REVIEWED BY: _____ DATE_____ TRC DATE_____

SITE-2023-0012 **180 TOLEND ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
E0046-000000	211 TOLEND RD	JACOBY LAUREN TRUSTEE		211 TOLEND ROAD	DOVER	NH	03820
E0047-000000	201 TOLEND RD	HERD KENNETH G &	WIEDMANN-HERD LESLIE J	201 TOLEND RD	DOVER	NH	03820
E0047-001000	TOLEND RD	STERN BRIAN		520 COLLAR HILL RD	WORCESTER	VT	05682-9614
E0047-A00000	185 TOLEND RD	FERNALD WILLIAM H		185 TOLEND RD	DOVER	NH	03820
E0048-000000	181 TOLEND RD	BAILEY JAMES B		181 TOLEND RD	DOVER	NH	03820
E0048-A00000	157 TOLEND RD	THING GEORGE C III &	THING MURIARA H	157 TOLEND RD	DOVER	NH	03820
E0048-B00000	163 TOLEND RD	DEVOY DAVID D III &	DEVOY CARMELA	163 TOLEND RD	DOVER	NH	03820
E0048-B00001	169 TOLEND RD	MARTIN LAURIE L		169 TOLEND RD	DOVER	NH	03820
E0048-B00002	173 TOLEND RD	BAKKE ERIK N	BAKKE JENNIFER M	173 TOLEND RD	DOVER	NH	03820
F0001-001000	8 MCCARTHY BLVD	NYBERG MELINDA &	NYBERG RANDALL R	8 MCCARTHY BLVD	DOVER	NH	03820
F0001-002000	6 MCCARTHY BLVD	LAYTON ROBERT A &	LAYTON KATHY Z	6 MCCARTHY BLVD	DOVER	NH	03820
F0001-A00000	116 TOLEND RD	CRISP MARK		116 TOLEND ROAD	DOVER	NH	03820
F0001-B00000	112 TOLEND RD	112 TOLEND LLC		25 TOPAZ DR #2	DOVER	NH	03820
F0001-E00000	9 MCCARTHY BLVD	PHOUMMAVONG KEOVISITH	SOUPHANKHAISY SENGDEUANE	9 MCCARTHY BLVD	DOVER	NH	03820
F0001-M00000	35 COLUMBUS AV	CLARK DONNA M TRUSTEE	CLARK DONNA M REV TRUST	35 COLUMBUS AVE	DOVER	NH	03820
F0002-001000	122 TOLEND RD	LANCTOT PATRICK D &	LANCTOT KRISTEN M	122 TOLEND RD	DOVER	NH	03820
F0002-002000	140 TOLEND RD	BECKER ERNEST F &	BECKER SHERI L	140 TOLEND RD	DOVER	NH	03820
F0002-003000	144 TOLEND RD	HENKER ADAM C &	HENKER GEORGINA A	144 TOLEND RD	DOVER	NH	03820
F0002-004000	148 TOLEND RD	XYDIAS PANAGIOTIS &	XYDIAS ELENI	148 TOLEND RD	DOVER	NH	03820
F0002-A00000	160 TOLEND RD	NADEAU EILEEN	NADEAU RAYMOND L	160 TOLEND ROAD	DOVER	NH	03820
F0003-000000	210 TOLEND RD	210 TOLEND ROAD LLC		42J DOVER POINT RD	DOVER	NH	03820
F0003-B00000	212 TOLEND RD	MILTON DANIEL L &	WATSON SHERRI H	212 TOLEND RD	DOVER	NH	03820-5511
F0023-A00000	LITTLEWORTH RD	EZRA GREEN'S FARM HOMEOWNERS ASSOCIATION		PO BOX 1312	DOVER	NH	03820
F0024-A00000	83 COLUMBUS AV	TOWLE JEREMY D		83 COLUMBUS AVENUE	DOVER	NH	03820
F0025-000000	COLUMBUS AV	KAY DUANE		131 COLUMBUS AVE	DOVER	NH	03820
F0002-000000	180 TOLEND RD	PARADIS LIONEL R JR &	PARADIS KRISTINA L	180 TOLEND ROAD	DOVER	NH	03820
		CELLCO PARTNERSHIP	D/B/A VERIZON WIRELESS	900 CHELMSFORD ST, T(	LOWELL	MA	01851
		NORTHEAST SURVEY CONSULTANTS		3 FERRY STREET, STUDI	EAST HAMPT(	MA	01027
		PROTERRA DESIGN GROUP, LLC		4 BAY ROAD, BUILDING A	HADLEY	MA	01053

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0012

Application Type:	Site Review
Applicant(s):	Jared Lusk, Nixon Peabody LLP / Verizon Wireless
Owner(s):	Lionel R. Jr. & Kristina L. Paradis
Location:	180 Tolend Road (Tax Map F, Lot 2)
Date:	November 2, 2023

INTENT: Proposal is to construct and operate a 104' wireless telecommunications facility at the subject property.

UNITS PROPOSED: 1 Telecommunication Tower

AGENDA ITEM #: 2

ACREAGE: 55.96± ac.

ZONING DISTRICT: IT, R-40

EXISTING LAND USE: Residential, Farmland

PROPOSED LAND USE: Addition of 1 Telecommunications Tower

SURROUNDING LAND USE: Residential

ZBA ACTION:
- ZONE-2023-0035, Variance granted for location of tower

PERMITS REQUIRED:
- FCC License

WAIVERS REQUESTED: n/a

ATTENDANCE:
Members:
Donna Benton, Zoning
Erin Bassegio, Planning
Marn Speidel, Police
James Burdin, Business Development
Ken Mavrogeorge, Engineering
Jim Maxfield, Fire/Inspection Services
Others:
Jared Lusk, Nixon Peabody LLP **Virtual*
Chip Freddette, Verizon Wireless **Virtual*

PLAN REVIEW:
Planning:
- Thanks for making edits and supplying photometric simulation
- *Provide letter to serve from electric company*
- *Public safety impact fee will be invoiced*
- *Revise plans:*
  - *Owner's signatures on the final plans*
  - *Professional stamps on the final plans*
  - *Add file number to plan set, SITE-2023-0012 on all sheets*
  - Privacy slats on fence
  - Missing sheet M-1, please include

Engineering:
General Comment:
- Recommend Inspection Service comment on whether or not plowing the facility would pose an issue for fire safety.
- Recommend paving driveway apron at a minimum to prevent erosion.
- Project appears to disturb more than 20,000 sf of area (including areas with proposed utility trenching). Therefore a stormwater management plan (153-14.2.a.2) would be required or a waiver requested from the requirement. Materials did not include a drainage study to review.
- Provide drainage study that shows compliance with 153-14.A.3.b.
- Please identify the location of proposed lighting on the plans. The response to comments refers to detail 4 on D-2 but the detail was not found.

Police:
- The police department supports this project for the anticipated improvements to public safety in telecommunication coverage.
- Thank you for providing the Photographic simulation and Viewshed imagery, it appears to answer the previous concerns.

Fire/Inspection Services:
- Provide T-1 turning template. Could not locate M-1 as indicated in response.
- Provide minimum width of Fire dept. access road. USDA access road information does not appear to reflect site conditions.
- Access Road shall be accessible year round in all weather conditions.

Application Type:	Site Review
Applicant(s):	Jared Lusk, Nixon Peabody LLP / Verizon Wireless
Owner(s):	Lionel R. Jr. & Kristina L. Paradis
Location:	180 Tolend Road (Tax Map F, Lot 2)
Date:	November 2, 2023

Business Development:

- None.

Planning Board:

- None.

Next Steps: Meet with Dover Engineering and Building Official, address remaining comments and resubmit for Planning Board.

Adjournment:
J. Maxfield moved to adjourn at 11:56 am. Seconded by K. Mavrogeorge. Vote: U/A.

EXHIBIT B

Project Description

Verizon Wireless ("**Verizon Wireless**") is a public utility, and federally licensed wireless telecommunications provider. It currently has service inadequacies in the City of Dover (the "**City**"). To remedy this service inadequacy, Verizon Wireless is proposing to construct and operate a 104′ wireless telecommunications facility (the "**Project**") at 180 Tolend Road (Tax Map #F-2-0-0) in the City of Dover, Strafford County, New Hampshire (the "**Project Site**"). This application includes, on behalf of Verizon Wireless, a request for a Special Exception from the Zoning Board of Adjustment and site plan approval from the Planning Board, to permit the Project to provide adequate and reliable wireless telecommunications service to emergency services, businesses and individuals in and around the Town.

The Project would consist of the construction and operation of a 104′ monopole wireless telecommunications facility with equipment and other improvements, all as shown on the enclosed Site Plan attached hereto as Exhibit H.

Essentially, wireless telecommunication devices operate by transmitting a very low power radio signal between the wireless telecommunication devices and an antenna mounted on a tower, pole, building or other structure. The antenna feeds the signal to electronic apparatus located near the antenna (the "**Base Station**"), where it is connected to traditional telephone systems, and is then routed anywhere in the world. The antennas and base station are known as a "**Cell Site**."

Because of the low power, a Cell Site is capable of transmitting to and from wireless telecommunication devices only within a limited geographic area. This limited geographic area is called a "**Cell**." A Cell site must be located within a prescribed area in order to provide coverage for the entire Cell.

Wireless telecommunications technology requires that Cells overlap somewhat in order to provide uninterrupted service. When the wireless telephone user moves into a new Cell, the transmission is automatically transferred to the Cell site in the new Cell. If there is no Cell site in the new Cell, there is no wireless telecommunications service.

Because each Cell site must be placed in such a manner as to provide service within a particular Cell, and so as to provide overlapping (but not duplicate) coverage with the existing or planned Cells around it, there is limited flexibility as to where a Cell Site can be placed. Wireless telecommunications providers conduct a thorough engineering study, including using an elaborate computer program known as a "**Propagation Study**." A Propagation Study shows, based on Cell boundaries, topography and other factors, where a Cell Site needs to be located in order to provide wireless telecommunications coverage in a particular Cell. The wireless telecommunication companies and RF engineers identify technologically feasible locations for the Cell Site.

In this case, the proposed Project Site was identified by Verizon Wireless as being an appropriate site to remedy the service deficiencies. The Project Site was located within that area and was available to Verizon Wireless to meet the technological requirements.

As set forth in this application, Verizon Wireless meets the legal standards necessary for the requested zoning approvals. Moreover, the Project will not pollute, will not create noise or vibration, will not create any significant increase in traffic, will not create any environmental problems, will not increase population density, and will not create any demand on governmental facilities. Thus, the Project will not create any detriment to adjoining properties or change the character of the neighborhood. Instead, the Project will enhance governmental facilities and promote the public welfare by providing a modern, more efficient system of communications for police, fire and other emergency services, as well as provide modern wireless telecommunication service to business, industry and individuals in and around the Dover W cell.

EXHIBIT C

Applicable Legal Standards

Verizon Wireless is applying for zoning approval for the installation of equipment that provides wireless services; accordingly, this application is subject to §704 of the federal Telecommunications Act of 1996 ("TCA"), codified at 47 U.S.C. §332(c)(7)(B). The TCA is a federal law enacted in 1996 with the purpose of "promot[ing] competition and reduc[ing] regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." *City of Rancho Palos Verdes v. Abrams*, 544 U.S. 113, 115 (2005) (*quoting* Telecommunications Act of 1996, Pub. L. No. 104-104, purpose statement, 110 Stat. 56, 56 (1996)).

In furtherance of this public purpose, the TCA establishes national standards that apply to zoning applications for wireless facilities and place limitations on local zoning authority. These standards preempt, or override, inconsistent state and local laws, so they must be considered by zoning boards or commissions in making decisions on applications for wireless facilities.

Without the relief requested, Verizon Wireless would be unable to build its network and provide adequate coverage by filling existing significant gap in coverage and capacity, thereby creating a hardship recognized by federal and state courts interpreting the TCA. The property is located within the limited geographic area whereby Verizon Wireless' radio frequency engineers determined that a wireless facility is required.

Also, as clarified by a Declaratory Ruling of the Federal Communications Commission ("FCC"), "it is a violation of Section 332(c)(7)(B)(i)(II) of the Communications Act for a State or local government to deny a personal wireless service facility siting application because service is available from another provider." *In the Matter of Petition for Declaratory Ruling to Clarify Provisions of Section 332(C)(7)(B)*, 24 FCC Rcd. 13994, 13995-96 (F.C.C. Nov. 18, 2009). This interpretation is necessary to further federal policies that promote competition and "the Telecommunications Act's pro-competitive purpose." *Id.* at 14016, 14018

Federal courts interpreting the TCA have held that where an applicant for the installation of wireless communications facilities to provide communications services seeks zoning relief as required by the municipal zoning ordinance, federal law imposes substantial restrictions affecting the standard for granting the requested relief. The TCA provides that:

> The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government. . . shall not prohibit or have the effect of prohibiting the provision of personal wireless services.

47 U.S.C. §332(c)(7)(B)(i). The TCA reflects Congress's intent to expand wireless services and increase competition among providers by preempting state and municipal regulations inconsistent with infrastructure development. *Rancho Palos Verdes v. Abrams*, 544 U.S. 113, 115 (2005); *Omnipoint Holdings v. City of Cranston*, 586 F.3d 38, 47 (1st Cir. 2009).

Additionally,

- local government or planning or zoning boards may not unreasonably discriminate among providers of functionally equivalent services, see 47 U.S.C. §332(c)(7)(B)(i);
- health concerns may not be considered so long as the emissions comply with the applicable standards of the FCC, see 47 U.S.C. §332(c)(7)(B)(iv); and
- decisions must be rendered within a reasonable period of time, see 47 U.S.C. §332(c)(7)(B)(ii) and the FCC's Declaratory Ruling commonly referred to as the "shot clock".

Although the TCA does not preempt all local zoning laws, it expressly preempts rules and laws attempting to regulate the "placement, construction, and modification of personal wireless service facilities that effectively prohibit the provision of personal wireless services." *City of Roswell, Ga.*, 135 S.Ct. at 814 (*citing Rancho Palos Verdes*, 544 U.S. at 115; 47 U.S.C. § 332(c)(7)(B)(i)(II)); *Green Mountain Realty Corp. v. Leonard*, 750 F.3d 30, 38 (1st Cir. 2014).

In the FCC's September 26, 2018 Declaration Ruling and Third Report, it clarified that under Section 253(a) or 332(c)(7)(B)(i)(II), "an effective prohibition [of service] occurs where a state or local legal requirement materially inhibits a provider's ability to engage in any of a variety of activities related to its provision of a covered service." By this ruling, the FCC makes it clear that a state or local legal requirement effectively prohibits the provision of wireless services if it inhibits or limits a provider "not only when filling a coverage gap but also when densifying a wireless network, introducing new services or otherwise improving service capabilities." FCC 18-133, ¶37. The FCC also makes clear that an effective prohibition includes inhibiting a provider from deploying the "performance characteristics" of its choosing.

Through the evidence submitted, Verizon Wireless has demonstrated that significant gaps exist in its network in the City of Dover and the Project is the only feasible means reasonably available to Verizon Wireless to fill its significant gaps in coverage.

EXHIBIT D

PROOF OF COMPLIANCE WITH THE CITY'S REQUIREMENTS FOR TELECOMMUNICATIONS FACILITIES AS SET FORTH IN § 170-22 OF THE ORDINANCE;

Section 170-22 the Ordinance (the City's "**Telecommunications Code**") contains the requirements for the City's requirements for telecommunications facilities in the City. The requirements of the Telecommunications Code are reproduced below in bold italicized type, followed by Verizon Wireless' response in regular type.

A. ***Authority. By the authority granted under RSA 674:16 and 674:21 and procedurally under the guidance of 675:1, II, this section creates an ordinance establishing a telecommunications program and amending the zoning code to add regulations pertaining to wireless communications facilities.***

No response necessary.

B. ***Purpose and Intent. This ordinance is enacted in order to establish general guidelines for the siting of telecommunication TOWERs and ANTENNAs and to enhance and fulfill the following goals:***

(1) ***Preserve the authority of the City to regulate and to provide for reasonable opportunities for the siting of TELECOMMUNICATIONS FACILITIES while ensuring that telecommunications providers service remains effective and efficient.***

No response necessary.

(2) ***Reduce or eliminate adverse impacts such facilities may create. Adverse impacts may include, but are not limited to, impacts on aesthetics, impacts on environmentally sensitive areas, impacts to historically significant locations, impacts on flight corridors, reduction in property values, and health and safety concerns.***

As shown in Exhibit H, the Project has been strategically located to avoid adverse impacts to the maximum extent practicable.

(3) ***Provide for co-location and minimal impact siting options through an assessment of technology, current locational options, future location availability, innovative siting techniques, and siting possibilities beyond the geographic boundaries of the City.***

The Project is a new 104' tower. As described in Exhibit G, there were no opportunities for co-location in the area necessary to deliver reliable service to Verizon Wireless' Dover West cell.

(4) ***Permit the construction of new TOWERs only where all other reasonable alternatives have been exhausted, and to encourage the owners and users of TOWERs and ANTENNAs to configure them in a manner that minimizes visual impacts of said STRUCTUREs.***

See Exhibit G; the Project so complies.

(5) ***Require ANTENNA co-location on existing TOWER STRUCTUREs through cooperation and agreements between providers.***

See Exhibit G; no opportunities for co-location exist.

(6) ***Provide for documentation of scheduling of recurring maintenance and safety inspections for all TELECOMMUNICATIONS FACILITIES and appurtenances.***

Verizon Wireless will comply with required maintenance and safety inspection requirements.

(7) ***Provide for the demolition and removal of abandoned facilities. Provide a procedure for the City to remove abandoned TOWERs to provide for the health and safety of citizens.***

No response necessary.

(8) ***Provide for the removal or upgrade of technologically outmoded facilities.***

No response necessary.

C. ***Location. TELECOMMUNICATIONS FACILITIES shall be allowed in accordance with the following:***

(1) ***On parcels situated in the City of Dover known as:***

General Location	*Map-LOT Number*
Finch Lane	*K-35A*
Middle Road	*M-57*
Blackwater Road	*A-29*
	A-1
Parsons Lane	*A-36*
Venture Drive	*D-7*
	D-5A
Glen Hill Road	*C-2012*
	C-7
	C-8
	C-20
	C-19
	C-22

Tolend Road	*C-27*
French Cross Road	*F-14*

(2) In other areas within the City of Dover only as a co-location on existing TOWERs, ANTENNAs, and ALTERNATIVE TOWER STRUCTUREs.

Since the Project is neither located in the areas outlined in subsection (1) above, nor a co-location, a use variance was required. It was issued by the Zoning Board of Adjustment on July 20, 2023 (see Exhibit M).

D. TELECOMMUNICATIONS FACILITIES Procedural Requirements.

(1) Location or replacement of TELECOMMUNICATIONS FACILITIES on existing TOWERs, ANTENNAs or ALTERNATIVE TOWER STRUCTUREs.

(a) The location or replacement of TELECOMMUNICATIONS FACILITIES on existing TOWERs, ANTENNAs or ALTERNATIVE TOWER STRUCTUREs may be approved by the Planning and Community Development Department provided the following information is submitted in an application:

(1) A scaled plan detailing exact size and location of the telecommunication devise including a scaled elevation view.

Not applicable; the Project is a new tower.

(2) Submission of proof that the telecommunication device is needed to service City of Dover residents.

Not applicable; the Project is a new tower.

(3) Proof that the device meets all other technical requirements of this ordinance.

Not applicable; the Project is a new tower.

(b) Any application denied by the Planning and Community Development Department may be appealed to the PLANNING BOARD.

Not applicable; the Project is a new tower.

(2) Proposed construction of New TELECOMMUNICATIONS FACILITIES. An application for construction of any new TELECOMMUNICATIONS FACILITIES shall be approved by the PLANNING BOARD. Public hearing requirements as outlined in the Site Review Regulations shall apply. The following application requirements shall be provided:

(a) ***A scaled plan in accordance with Site Review Regulations shall be submitted including the following additional information; a scaled elevation view, topography, radio frequency coverage, TOWER HEIGHT requirements, SETBACKs, drives, parking, fencing, landscaping, adjacent land uses (up to two hundred (200) feet away), and any other information deemed necessary by the Director of Planning and Community Development.***

See Exhibit H.

(b) ***Written proof that the proposed use/facility complies with FCC regulations on radio frequency (RFD) exposure guidelines, and FAA regulations on TOWER lighting requirements.***

See Exhibit I and Exhibit J. Verizon Wireless will notify the FAA once the City approves a location and tower height.

(c) ***The APPLICANT shall submit written proof that an evaluation has taken place, as well as the results of such evaluation, satisfying the requirements of the National Environmental Policy Act (NEAP) further referenced in applicable FCC rules. If an Environmental Assessment (EA) or an Environmental Impact Statement (IS) is required under the FCC rules and NEAP, submission of the EA or IS to the PLANNING BOARD prior to the beginning of the federal thirty (30) day comment period, and the City's site review process, shall become part of the application requirements.***

Verizon Wireless will commence the NEPA process following review and approval by the City. The approved location and tower height are key to the NEPA process.

(d) ***Each APPLICANT for an ANTENNA and/or TOWER shall provide to the PLANNING BOARD an inventory of its existing TOWERs that are within the jurisdiction of the City and those within two (2) miles of the border thereof, including specific information about the location, HEIGHT, design of each TOWER, as well as economic and technological feasibility for co-location on the inventoried TOWERs. The PLANNING BOARD may share such information with other APPLICANTs applying for approvals or special exception permits under this ordinance or other organizations seeking to locate ANTENNAs within the jurisdiction of the governing authority, provided, however that the PLANNING BOARD is not, by sharing such information, in any way representing or warranting that such sites are available or suitable.***

See Exhibit G.

The APPLICANT shall submit written evidence demonstrating that no existing STRUCTURE can accommodate the APPLICANT's proposed ANTENNA. This evidence shall consist of one or more of the following:

(i) ***Adequate evidence that no existing TOWERs or STRUCTUREs are located within the geographic area required to meet the APPLICANT's engineering requirements, provided that a description of the geographic area required is also submitted.***

See Exhibit G.

(ii) ***Adequate evidence that existing TOWERs are not of sufficient HEIGHT to meet the APPLICANT's engineering requirements, and why.***

See Exhibit G; there were no existing towers suitable for co-location in the area.

(iii) ***Adequate evidence that the existing TOWERs or STRUCTUREs do not have sufficient structural strength to support APPLICANT's proposed ANTENNA and related equipment.***

See Exhibit G; there were no existing towers suitable for co-location in the area.

(iv) ***Adequate evidence that APPLICANT's proposed ANTENNA would cause electromagnetic interference with the ANTENNA on the existing TOWERs or STRUCTUREs, or the ANTENNA on the existing TOWERs or STRUCTUREs would cause interference with the APPLICANT's proposed ANTENNA.***

See Exhibit G; there were no existing towers suitable for co-location in the area.

(v) ***Adequate evidence that fees, costs, or contractual provisions required by the owner in order to share the existing TOWER or STRUCTURE are unreasonable. Costs exceeding new TOWER development are presumed to be unreasonable.***

See Exhibit G; there were no existing towers suitable for co-location in the area.

(vi) ***Adequate evidence that the APPLICANT can demonstrate other limiting factors that render existing TOWERs and STRUCTUREs unsuitable.***

See Exhibit G; there were no existing towers suitable for co-location in the area.

(e) ***The APPLICANT proposing to build a new TOWER shall submit an agreement with the City that allows for the maximum allowance of co-location upon the new STRUCTURE. Such statement shall become a Condition to any Approval. This statement shall, at a minimum, require the APPLICANT to supply available co-location for reasonable fees and costs to other telecommunication providers. All agreements shall outline a procedure requiring all disputes on terms and conditions of co-location be submitted to a recognized commercial arbitration board for their review. The arbitration board's decision shall become final and binding. Failure to provide such an agreement is evidence of the APPLICANT's unwillingness to cooperate with the orderly and well-planned development of the (City), and grounds for a Denial.***

See Exhibit K.

(f) ***The APPLICANT shall submit the engineering information detailing the size and coverage required for the facility location. The PLANNING BOARD may have this information reviewed by a consultant for verification of any claims made by the APPLICANT regarding technological limitations and feasibility for Alternative locations. Cost for this review shall be borne by the APPLICANT in accordance with RSA 676:4(g).***

See Exhibit G.

(g) ***Each APPLICANT for a TOWER, monopole, or Alternative STRUCTURE shall submit a design certified by a competent engineer that the STRUCTURE has been engineered to accommodate the maximum number and type of all compatible telecommunication media ANTENNAE, but in no event shall the APPLICANT provide fewer than three additional co-locations from three additional providers. This provision may be modified based on visual or aesthetic impacts.***

Verizon Wireless will provide this following consultation with the City and therefore respectfully requests this be a condition of approval.

E. ***Performance Standards.***

The uses listed in this section are deemed to be permitted uses, and at the discretion of the PLANNING BOARD, may require further review under this Chapter in accordance with Chapter 149, Site Review Regulations, and all other applicable ordinances and regulations of the City of Dover.

(1) ***Principal or Secondary Use.***

(a) ***Subject to this ordinance, an APPLICANT who obtains site review approval to site under this ordinance as a secondary and permitted use, may construct TELECOMMUNICATIONS FACILITIES in addition to***

the existing principal use. ANTENNAs and TOWERs may be considered either principal or secondary uses. A different existing use or an existing STRUCTURE shall not preclude the installation of an ANTENNA or TOWER on such LOT.

No response necessary.

(b) For purposes of determining whether siting of an ANTENNA or TOWER complies with zoning district development regulations, including, but not limited to area, SETBACK, LOT COVERAGE, FRONTAGE, and other dimensional requirements, the dimensions of the entire LOT shall control, even though the ANTENNAs or TOWERs may be located on leased parcels within such LOTs. TOWERs that are constructed, and ANTENNAs that are installed in accordance with the provisions of this ordinance, shall not be deemed the expansion of a nonconforming use or STRUCTURE. Further, said facilities shall not be considered an ACCESSORY USE.

No response necessary.

(2) HEIGHT Requirements.

(a) New TOWER Construction – one hundred eighty (180) feet maximum.

See Exhibit H (Sheet A-2), the Project so complies.

(b) Co-location on Existing TOWER and ANTENNAs – current HEIGHT plus fifteen percent (15%) (not to exceed two hundred (200) feet)

Not applicable.

(c) Co-location on ALTERNATIVE TOWER STRUCTUREs – current HEIGHT plus twelve (12) feet

Not applicable.

(d) The HEIGHT requirements and limitations outlined above shall preempt all other HEIGHT regulations as required by the City of Dover Zoning Ordinance, and shall apply only to TELECOMMUNICATIONS FACILITIES. A Conditional Use Permit may be granted by the PLANNING BOARD to waive the HEIGHT limitations only if the intent of this Chapter is preserved (e.g. when it can be shown that there would be no increase in adverse impact) and the increased HEIGHT would provide a greater opportunity for co-location provided that:

(1) The granting of the permit will not be detrimental to the public safety, health or welfare or injurious to other property, and will promote the public interest.

Not applicable; the proposed tower complies with the City's height limit.

(2) A written narrative identifying a particular hardship or special circumstance that warrants granting the permit. Factors to be considered, but not limited to, in determining a hardship or special circumstance shall include:

(a) topography and other site features

Not applicable; the proposed tower complies with the City's height limit.

(b) availability of Alternative site locations

Not applicable; the proposed tower complies with the City's height limit.

(c) property location as relates to required coverage area

Not applicable; the proposed tower complies with the City's height limit.

(d) size/magnitude of project and availability of co-location

Not applicable; the proposed tower complies with the City's height limit.

(3) Necessary federal approvals and/or recommendations have been received.

Not applicable; the proposed tower complies with the City's height limit.

(3) SETBACKs and Separation. The following SETBACKs and separation requirements shall apply only to TELECOMMUNICATIONS FACILITIES, and shall supersede all other such standards found elsewhere in this Chapter or other applicable City Ordinances and Regulations.

(a) TOWERs shall be set back a distance equal to one hundred percent (100%) of the HEIGHT of the TOWER from any boundary line, or other principal use STRUCTURE located on the property the TOWER is sited upon. This provision may be waived by the PLANNING BOARD provided the intent of this Chapter remains intact.

See Exhibit H (Sheet A-2); the Project so complies.

(b) ***TOWER guys, and all other accessory facilities shall conform with the minimum SETBACK requirement of the zoning district in which said facilities and appurtenances are located.***

See Exhibit H; the proposed tower is a monopole. No guys are required.

(4) ***Security Fencing. TOWERs shall be enclosed by appropriate security fencing not less than six (6) feet in HEIGHT, and shall be equipped with an appropriate anti-climbing device.***

See Exhibit H (Sheet D-1); the Project so complies.

(5) ***Landscaping.***

(a) ***TOWERs shall be landscaped with a buffer of suitable vegetation that effectively screens the view of the TOWER compound from abutting residential property. The minimum standard buffer shall consist of a landscaped strip ten (10) feet wide outside the perimeter of the TOWER compound. Existing (natural) vegetation is preferred.***

See Exhibit H (Sheet A-2); the Project so complies.

(b) ***The requirement for landscaped screening may be reduced or waived entirely by the PLANNING BOARD in locations where the visual impact of the TOWER compound to abutting residential uses is deemed to be minimal.***

No response necessary.

(c) ***Existing mature tree growth and natural land forms present on the site shall be preserved to the maximum extent possible. Natural growth on the site may be deemed a sufficient buffer on large, remote, wooded LOTs.***

The Project site is a working farm; no trees are slated for removal.

(6) ***Aesthetics and Lighting. The guidelines in this subsection shall govern the location of all TOWERs, and the installation of all ANTENNAs. However, the PLANNING BOARD may waive those requirements, via Conditional Use Permit, only if it determines that the goals of this Chapter are served thereby.***

(a) ***TOWERs shall either maintain a galvanized steel finisher, subject to any applicable standards of the FAA, or be painted a neutral color, so as to reduce visual obtrusiveness.***

See Exhibit H; the Project so complies.

(b) ***At a TOWER site, the design of BUILDINGs and related STRUCTUREs shall, to the maximum extent possible, use materials, colors, textures, screening, and landscaping that will blend the TOWER facilities with the natural setting and previously developed environment. These BUILDINGs and facilities shall also be subject to all other Chapter 149 Site Review Regulations requirements.***

See Exhibit H; there are no structures other than the proposed tower (galvanized steel) and related equipment cabinets all painted an off-white gray color.

(c) ***If an ANTENNA is installed on a STRUCTURE other than a TOWER, the ANTENNA and supporting electrical and mechanical equipment must be of neutral color that is identical to, or closely compatible with, the color of the supporting STRUCTURE so as to make the ANTENNA and related equipment as visually unobtrusive as possible.***

Not applicable.

(d) ***TOWERs shall not be artificially lighted, unless required by the FAA or other applicable authority. If lighting is required, the governing authority may review the available lighting alternatives and approve the design that would cause the least disturbance to the surrounding views.***

See Exhibit H (Sheet A-2); no FAA lighting is proposed.

(e) ***TOWERs shall not contain any permanent or temporary SIGNS, writing, symbols, or any graphic representation of any kind.***

Not applicable.

(7) ***Federal Requirements. All TOWERs must meet or exceed current standards and regulations of the FAA, FCC, and any other agency of the federal government with the authority to regulate TOWERs and ANTENNAs. If such standards and regulations are changed, then the owners of the TOWERs and ANTENNAs governed by this Chapter shall bring such TOWERs and ANTENNAs into compliance with such revised standards and regulations within six (6) months of the effective date of such standards and regulations, unless a more stringent compliance schedule is mandated by the controlling federal agency. Failure to bring TOWERs and ANTENNAs into compliance with such revised standards and regulations shall constitute grounds for the removal, in accordance with this Chapter 170-22.I of the TOWER or ANTENNA, as abandoned, at the owner's expense through the execution of the posted security.***

The Tower will be designed in accordance with applicable structural standards and proof of same will be submitted once zoning approvals are received and a location approved.

(8) *BUILDING Codes – Safety Standards. To ensure the structural integrity of TOWERs and ANTENNAs, the owner of a TOWER shall ensure that it is maintained in compliance with standards contained in applicable local BUILDING codes and the applicable standards for TOWERs that are published by the Electronic Industries Association, as amended from time to time. If, upon inspection, the City concludes that a TOWER fails to comply with such codes and standards and constitutes a danger to persons or property, then upon notice being provided to the owner of the TOWER, the owner shall have thirty (30) days to bring such TOWER into compliance with such standards. If the owner fails to bring such TOWER into compliance within thirty (30) days, such action shall constitute an abandonment and grounds for the removal, in accordance with this Chapter 170-22.I of the TOWER or ANTENNA, as abandoned, at the owners expense through execution of the posted security.*

Verizon Wireless will maintain the tower as required.

(9) *Certification of safety standards and continued need. The owner of a TOWER or ANTENNA shall provide an annual certification to the Planning and Community Development Department verifying compliance with BUILDING codes and safety standards. The certification shall also verify that the STRUCTURE is still needed for the operation of the owners' network. Said certification shall be submitted to the Planning and Community Development Department prior to December 31st of each year. Any owner who has failed to submit an annual certification shall be notified of the violation. A thirty (30) day extension for submission of a certification may be approved at the discretion of the Planning and Community Development Department. After notification of a violation by the Planning and Community Development Department subsequent failure to submit an annual certification shall constitute abandonment and be grounds for removal in accordance with 170-22.I).*

Verizon Wireless will so comply to the extent this requirement is not pre-empted by federal law.

F. *Exemptions.*

(1) *City Use. ANTENNAS or TOWERs owned, performing City functions, or otherwise controlled by the City shall be exempt from the requirements of this TELECOMMUNICATIONS FACILITY Ordinance. This exemption shall only be available if a license or lease authorizing such ANTENNA or TOWER has been approved by the City Council, and the City Council elects, subject to RSA's, to seek said exemption.*

Not applicable.

(2) *Amateur Radio. This section shall not govern any TOWER, or the installation of any ANTENNA that is owned and operated by a federally-licensed amateur*

radio station operator and the TOWER or ANTENNA is used for the exclusive purpose of amateur radio operations. This application adopts the provisions and limitations as referenced in RSA 674:16,IV.

Not applicable.

(3) Citizen Band Radios. This section shall not govern the installation of any ANTENNA that is used for the exclusive purpose of facilitating the use of a Citizen Band Radio, except any TOWERs in this section shall be limited to seventy (70) feet in HEIGHT.

Not applicable.

(4) Receive-Only ANTENNAs. This section shall not govern any TOWER, or the installation of any ANTENNA that is used exclusively for receive-only ANTENNAs, except any TOWERs in this section shall be limited to seventy (70) feet in HEIGHT.

Not applicable.

(5) Essential Services and Public Utilities. Henceforth, from the date of adoption of this ordinance, TELECOMMUNICATIONS FACILITIES shall not be considered as infrastructure, essential services, or public utilities, as defined or used elsewhere in the City's ordinances and regulations.

Siting for TELECOMMUNICATIONS FACILITIES shall be considered a use of land, and is addressed by this ordinance.

No response necessary.

G. Restrictions for Siting on Garrison Hill

Notwithstanding the provisions outlined in Subsection C, the siting of additional TOWERs, monopoles, or use of Alternative STRUCTUREs shall be prohibited on Garrison Hill in the City of Dover. Placement of new ANTENNAE media on the existing TOWERs on Garrison Hill shall be allowed only after obtaining a Conditional Use Permit from the PLANNING BOARD. However, the replacement and/or repair of existing ANTENNAE media on TOWERs on Garrison Hill is allowed by the Building Inspector, provided that there is no increase in the size or visual impact of the ANTENNAE. Performance standards to ensure that vistas, view sheds and view corridors are protected shall include the following elements:

(1) The APPLICANT has demonstrated that the appearance, form or shape, color, and size of any ANTENNA media to be attached to preexisting TOWERs or monopole STRUCTUREs is concealed or camouflaged or otherwise is harmonious with the immediately surrounding environment at Garrison Hill;

Not applicable; the Project is not proposed at Garrison Hill.

(2) *Any equipment shelters supporting such additional ANTENNA shall be designed consistent with one of the following design standards:*

(a) *Equipment shelter shall be located in underground vaults; or*

Not applicable; the Project is not proposed at Garrison Hill.

(b) *Equipment shelter shall be designed consistent with Northern New England architectural styles and materials, with a roof pitch of at least ten and a half (10 1/2) and wood clapboard, red brick or shingle siding; or*

Not applicable; the Project is not proposed at Garrison Hill.

(c) *Equipment shelters shall be camouflaged behind an effective year round landscaped buffer, equal to the HEIGHT of the proposed BUILDING and/or wooden FENCE. PLANNING BOARD shall determine the style of fencing and/or landscaped buffer that is compatible with the NEIGHBORHOOD.*

Not applicable; the Project is not proposed at Garrison Hill.

(3) *Any ANTENNA located on an existing STRUCTURE shall be concealed, to the extent technologically and commercially practicable, behind existing architectural features to limit the visibility of the ANTENNA from public ways.*

Not applicable; the Project is not proposed at Garrison Hill.

H. *Bonding and Security and Insurance.*

(1) *Recognizing the extremely hazardous situation presented by abandoned and unmonitored TOWERs, the PLANNING BOARD shall set the form and amount of security that represents the cost for removal and disposal of abandoned towers in the event that the TOWER is abandoned and the TOWER owner is incapable and unwilling to remove the TOWER in accordance with Subsection I) below.*

Verizon Wireless will so comply.

(2) *Bonding and surety shall be consistent with the provisions in the Chapter 155, Subdivision of Land. Furthermore, the PLANNING BOARD shall require the submission of proof of adequate insurance covering accident or damage.*

Verizon Wireless will so comply.

I. *Removal of Abandoned ANTENNAS and Towers.*

Any ANTENNA or TOWER that is not operated for a continuous period of twelve (12) months, or is no longer needed for the operation of the network, shall be considered abandoned and hazardous to the public health and safety. The owner shall remove the abandoned STRUCTURE within ninety (90) days of receipt of a declaration of abandonment from Zoning Administrator notifying the owner of such abandonment. A declaration of abandonment shall only be issued following a public hearing notice per City regulations, with notice to ABUTTERS and the last known owner/operator of the TOWER. If the abandoned TOWER is not removed within ninety (90) days, the City may execute the security and have the TOWER removed. If there are two or more users of a single TOWER, this provision shall not become effective until all users cease using the TOWER.

Verizon Wireless will so comply.

EXHIBIT E

PROOF OF COMPLIANCE WITH THE CITY'S SITE PLAN APPLICATION REQUIREMENTS AND SITE DESIGN AND DEVELOPMENT CRITERIA AS SET FORTH IN §§ 153-6, 153-13 – 153-15 OF THE CITY OF DOVER ZONING ORDINANCE

§§ 153-6, 153-13 through 153-15 of the City's Zoning Ordinance (the "**Ordinance**") contain the requirements for site plan review applications in the City. The requirements of the Ordinance are reproduced below in bold italicized type, followed by Verizon Wireless' response in regular type.

§ 153-6 Application requirements; Technical Review Committee.

A. ***Prior to the formal submission of an application for site review by the Planning Board, the applicant shall meet with the Technical Review Committee. Said meeting(s) shall serve to assist the applicant in preparing a development proposal that is technically conforming to the regulations contained herein. The Technical Review Committee shall be comprised of the Planning Board Chair, the Conservation Commission Chair, City Engineer, Fire and Rescue Chief, Police Chief, Zoning Administrator, Economic Development Director and Director of Planning and Community Development, who shall serve as Chair. All Committee members shall have a designated alternate available in their absence. For projects under the threshold described in Section 153-4.A but meeting the threshold of 153-4.B(1) through (5) may be approved by the majority vote of Technical Review Committee per RSA 676:43 provided no waivers or Conditional Use Permits are necessary to meet regulations.***

Verizon Wireless completed its review of the Project with the Technical Review Committee on April 10, 2024.

B. ***A completed application sufficient to invoke jurisdiction of the Planning Board (or, for minor site plans, the Technical Review Committee) shall include the following elements:***

(1) ***A completed application form, available at the Department of Planning and Community Development office and through the online portal.***

See Exhibit A.

(2) ***A completed site review checkoff list.***

See Exhibit A.

(3) ***A written narrative description of the proposed project, addressing its purpose, scope of operation, and impact on the immediate area of influence and the City in general (traffic, schools, utilities, land use compatibility, aesthetics, land and water resources, etc.).***

See Exhibit B and Exhibit G.

(4) Ground/aerial photographs of the site and immediate area.

See Exhibit H.

(5) Four copies of the site development plan as more fully described in Article IV of this chapter. Transmit a pdf of the site development plan via e-mail to dover-planning@dover.nh.gov. (Note: Only three copies of the preliminary plan need to be submitted initially for review by the Technical Review Committee. However, the applicant shall check with the Planning Department about number of copies that will be required for submission of the complete application to the Planning Board.) [Amended 5-24-2016]

Four (4) copies of the Site Plan are enclosed.

(6) A list of owners, applicants, and professionals involved in the application. Additionally a fee for the City to create a list of abutting property owners that lie within 200 feet of the subject parcel. Information shall include name, mailing address, and Dover Tax Map and lot numbers for the applicant to review. The City will prepare verified mailings. [Amended 1-14-2020; 7-27-2021]

See Exhibit H (Sheet T-1). In addition to the professionals listed on Sheet T-1, Nixon Peabody LLP is representing Verizon Wireless. See the list of abutters at Exhibit L.

(7) A fee of an amount to be determined in accordance with the fee schedule contained in § 153-18 of this chapter.

The required fee of $200 will be paid via the online portal.

C. The applicant shall file the application with the Planning Board office at least 21 days prior to the Planning Board meeting, at which time the application will be accepted and a public hearing held. [Amended 1-14-2020]

(1) The applicant and abutters shall be notified of said public hearing by verified mail, with return receipt requested, stating the time, date and place of such hearing. Notice will be mailed at least 10 days prior to the date of the meeting, by the city.

No response necessary.

(2) Such public hearing shall be advertised in a newspaper of general distribution not less than 10 days prior to the said meeting.

No response necessary.

§ 153-13. Site development plan. [Amended 5-25-1999; 8-26-2008; 3-23-2010; 1-24-2012]

A. A site development plan shall be drawn to an appropriate scale, not less than one inch equals 50 feet, and shall show the following information:

(1) A small-scale location map delineating the project site and its relation to the surrounding area at an appropriate scale. [Amended 5-24-2016]

See Exhibit H (Sheet T-1).

(2) Name or identifying title of the proposed project as well as planning file number, once assigned.

See Exhibit H (Sheet C-1).

(3) Date and approximate true North.

See Exhibit H (Sheet C-1).

(4) Exact locations and dimensions or property lines and names of current abutters.

See Exhibit H (Sheet C-1).

(5) Location of all existing and proposed buildings and structures on the site. Any details on detail sheets shall be numbered or lettered. [Amended 5-24-2016]

See Exhibit H (Sheet C-2).

(6) Delineate existing zoning and special district boundaries.

See Exhibit H (Sheet A-1).

(7) Specify proposed finished floor elevations of buildings so to assure positive surface drainage and proper elevation relationship to adjacent property.

Not applicable (an elevation of the proposed tower is included in Sheet A-2).

(8) Existing and proposed grade contours (two-foot intervals) so to certify the adequate disposal of on-site water. Upon request, contours delineating existing surface shall be extended 100 feet beyond the limits of the project site and shall be related to the United States Geographical Survey.

See Exhibit H (Sheet A-2).

(9) Location, dimension and material of all existing and proposed utilities and identify all on-site waste disposal systems and wells.

See Exhibit H (Sheet A-1).

(10) ***Location of test borings, groundwater elevation and soil profiles shall be provided upon request.***

Verizon Wireless will comply to the extent applicable to the Project.

(11) ***Parking layout that delineates the number of parking spaces and parking arrangement.***

See Exhibit H (Sheet A-2).

(12) ***A landscape plan that delineates the arrangement, species and dimensions of all existing and proposed landscaping materials. The landscape plan, in sufficient detail to indicate compliance with these regulations, shall be prepared by a professional landscape architect who is licensed by the State of New Hampshire. The licensed landscape architect shall sign the plan. The landscape plan shall be certified by the licensed landscape architect and include his/her State of New Hampshire license number.***

See Exhibit H (Sheet A-2).

(13) ***Where multifamily development is proposed, those areas supporting slopes in excess of 20%, the federal floodway and floodplain, and the surface areas of water bodies and wetlands shall be clearly depicted on the site plan and quantified.***

Not applicable.

(14) ***Where change in use is being proposed, the following additional items are required:***

(a) ***A table showing the expected amount of change in demand for parking, water and sewer use, and traffic.***

The Project includes parking for 1-2 vehicles for maintenance personnel that may visit approximately 1-2 times per month.

(b) ***A floor plan showing the proposed use and square footage in each use.***

Not applicable.

(15) ***A colored architectural plan showing all sides of new buildings, as prepared by a registered engineer or architect, who shall sign the plan and place his/her seal upon it. The plan shall conform to the guidelines contained in § 153-14L.***

Not applicable.

(16) ***A neighborhood plan on an aerial photograph, showing all property lines within a distance determined by the Director of Planning and Community***

Development during initial consultations, and how the project relates to abutting uses. This sheet should show the proposed impervious surfaces and zoning boundaries. [Amended 5-24-20161

See Exhibit H (Sheet A-1).

(17) ***A colored rendering of the streetscape that will be created along the existing public right-of-way. This sheet shall include a perspective of both sides of any existing roadway, any street or sidewalk improvements, proposed plantings and structures, as prepared by a registered engineer or architect, who shall sign the plan and place his/her seal upon it, as required.***

Not applicable.

(18) ***A stormwater management and erosion control plan shall be developed in accordance with the requirements of § 153-14A if it is determined to be necessary by the Technical Review Committee during its review process, as outlined in § 153-6A. Site plans shall provide for the proper management of stormwater and erosion and sedimentation control.***

See Exhibit H (Sheets EC-1 and EC-2); a stormwater management and erosion control plan are not required.

(19) ***Traffic impact assessment and analysis. All development projects that require site plan review shall prepare a traffic impact assessment and analysis that complies with the standards contained in Chapter 157, Land Subdivision Regulations, § 157-10D, as amended.***

The Project will not create traffic beyond 1-2 vehicle trips per month by operations staff.

(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. [Added 6-12-20181***

See Exhibit H (Sheet D-1).

B. ***The information required by Subsection A(1) through (20) of this section must be supplied. The site development plan may be modified to eliminate items outlined under Article II that are not subject to change or are impertinent to the proposed use; however, the Planning Board or its staff may require that the information be supplied. In addition, the Planning Board may require the area and uses outside the building to be upgraded to meet existing standards.***

(1) A preapplication meeting with staff shall be held to determine what elements of Subsection A may be modified. All modifications will be noted by staff, in writing. [Amended 6-12-2018]

Verizon Wireless completed the TRC review process on April 10, 2024.

§ 153-14. Site development design criteria. [Amended 5-25-1999; 1-14-2003; 8-26-2008; 3-23-2010; 1-24-2012; 12-18-2012; 11-17-2015; 5-24-2016]

A. *Stormwater management, erosion control and flood hazards.*

(1) Purpose and objective. These regulations establish standards to manage the discharge of runoff to the City of Dover's municipal storm sewer system and water bodies, in a manner compliant with the requirements of state and federal law, including provisions of the federal stormwater management legislation for municipal separate storm sewer systems (MS4), as amended. These provisions and standards are implemented for the purpose of:

(a) Managing stormwater runoff to protect water quality and quantity.

See Exhibit H (Sheets EC-1 and EC-2); the Project so complies.

(b) Minimizing the contribution of a pollutant for which a water body is impaired to the maximum extent practicable (MEP).

See Exhibit H (Sheets EC-1 and EC-2); the Project so complies.

(c) Causing no discharge of runoff to an adjacent property in excess of runoff discharge in the existing developed or undeveloped condition.

See Exhibit H (Sheets EC-1 and EC-2); the Project so complies.

(d) Encouraging the use of low-impact development (LID) strategies.

See Exhibit H (Sheets EC-1 and EC-2); the Project so complies.

(2) Applicability of the stormwater standards.

(a) All projects requiring site plan or major subdivision approval shall be subject to the following set of stormwater standards according to the amount and type of disturbance. Applicability is as follows:

[1] The minimum protections and management standards shall apply to all projects.

See Exhibit H (Sheets EC-1 and EC-2); the Project so complies.

[2] The stormwater management for new development standards shall apply to any project that results in a contiguous land disturbance

of more than 20,000 square feet or creates more than 4,000 square feet of new impervious area.

See Exhibit H (Sheet EC-1); the Project will not disturb more than 20,000 square feet.

[3] ***The stormwater management for redevelopment standards shall apply to any project that results in a contiguous land disturbance of more than 20,000 square feet or creates more than 4,000 square feet of new impervious area where the existing land use has been previously developed as commercial, industrial, institutional, governmental, recreational, or multifamily.***

See Exhibit H (Sheet EC-1); the Project will not disturb more than 20,000 square feet.

(b) ***All projects of such magnitude as to require a permit from the National Pollutant Discharge Elimination System (NPDES) Program or the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain (AoT) Program shall also comply with the standards of the Environmental Protection Agency (EPA) and/or NHDES permits and this section, whereas the stricter standards shall apply.***

See Exhibit H (Sheets EC-1 and EC-2); Verizon Wireless will so comply.

(3) ***Design standards.***

(a) ***Minimum protections and management standards.***

[1] ***Where applicable, all development must comply with the EPA Phase II Stormwater Rules and the City's MS4 permit, as amended.***

See Exhibit H (Sheets EC-1 and EC-2); Verizon Wireless will so comply.

[2] ***Existing surface waters, including ponds, rivers, perennial and intermittent streams (natural or channelized), and wetlands (including vernal pools), shall be protected by the minimum buffer setback as specified in Chapter 170, Zoning, § 170-27.1. Stormwater and erosion and sediment control best management practices (BMPs) shall be located outside the specified buffer zone unless otherwise approved by the Planning Board.***

See Exhibit H (Sheets EC-1 and EC-2); Verizon Wireless will so comply.

[3] ***Low-impact development (LID) site planning and design strategies shall be used to the MEP in order to reduce the generation of the stormwater runoff volume for both new and redevelopment projects. An owner/applicant must document why LID strategies are not appropriate if not used to manage stormwater.***

See Exhibit H (Sheets EC-1 and EC-2); Verizon Wireless will so comply.

[4] ***All proposed stormwater practices and measures shall be installed and maintained in accordance with manufacturers' specifications and performance specifications outlined in the New Hampshire Stormwater Management Manual Volume 2 (December 2008 or current revision) a copy of which can be found on the NHDES website.***

See Exhibit H (Sheets EC-1 and EC-2); Verizon Wireless will so comply.

[5] ***All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials shall meet the regulations of the NHDES, including but not limited to those involving underground storage tanks, aboveground storage tanks, hazardous waste and best management practices for groundwater protection (Part Env-Wq 401).***

See Exhibit H (Sheet C-2); the Project so complies.

[6] ***Salt and other deicing materials shall be stored under cover or located such that no direct discharges to receiving waters are possible. Snow storage areas shall be located such that no direct discharges to receiving waters are possible. See the NHDES guidance fact sheet on road salt and snow disposal.***

Verizon Wireless will so comply.

[7] ***The use of sodium-chloride-based materials for winter maintenance shall be the minimum necessary for safety. The use of sodium-chloride-based materials is discouraged within the groundwater protection districts.***

Verizon Wireless will so comply.

[8] ***Impervious surfaces for parking areas and roads shall be minimized to the extent possible.***

See Exhibit H; a minimum parking area has been provided.

[9] ***Stormwater runoff from new impervious surfaces shall be directed to a best management practice for flow mitigation, treatment and/or infiltration.***

See Exhibit H; the Project so complies.

(b) ***Stormwater management for new development.***

[1] ***Runoff of impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus. Removal rates shall be determined using approved manufacturer's pollutant removal efficiency analysis or the pollutant removal efficiencies outlined in the New Hampshire Stormwater Management Manual Volume 1, Appendix E (December 2008 or current revision), a copy of which is available from the NHDES website.***

See Exhibit G (Sheets EC-1 and EC-2).

[2] ***Rainfall amount shall be based on current extreme precipitation estimates obtained from the Northeast Regional Climate Center.***

No response necessary.

[3] ***Measures shall be taken to control the post-development peak rate runoff so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five- and fifty-year, twenty-four-hour storm events.***

See Exhibit H (Sheets EC-1 and EC-2).

[4] ***Measures shall be taken to control the post-development surface water runoff volume so that it does not exceed predevelopment runoff for the two-, ten-, twenty-five-and fifty-year, twenty-four-hour storm events. For sites where infiltration/recharge is limited or not practicable, the owner/applicant must demonstrate that the project will not cause or contribute to flooding or functional impairments to streets, adjacent properties, and downstream properties.***

See Exhibit H (Sheets EC-1 and EC-2).

[5] ***Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14.***

See Exhibit H (Sheets EC-1 and EC-2).

[6] ***Stormwater conveyance practices shall be sized appropriately to convey the ten-year, twenty-four-hour storm event without overtopping or causing flooding on the property.***

See Exhibit H (Sheets EC-1 and EC-2).

[7] ***For large projects adding greater than or equal to 10 acres of impervious cover, or projects located in known areas of flooding concern, or specifically within areas with a 1% chance of being inundated by water in any given year, the owner/applicant shall submit a supplementary report that describes how the project will not increase the future flooding potential and complies with the AoT requirements pertaining to floodplain impacts as described in Section Env-Wq 1503.09, regardless of whether an AoT permit is required.***

Not applicable.

[8] ***The design of the stormwater management systems shall take into account upstream and upgradient runoff that flows onto, over, or through the site to be developed or redeveloped and provide for this contribution of runoff.***

Not applicable.

[9] ***Seasonal high-water table elevations must be accounted for in all BMP design criteria.***

Not applicable.

[10] ***Access for maintenance of stormwater facilities must be included as part of the design, where necessary. Access easements may be required.***

Not applicable.

[11] ***Plantings in treatment areas shall be native grasses, shrubs and/or other native plants in sufficient numbers and density to prevent soil erosion and to achieve water-quality treatment.***

Not applicable.

(c) ***Stormwater management for redevelopment. In order to determine the stormwater requirements for redevelopment projects, the percentage of the site covered by existing impervious areas must be calculated. Stormwater requirements for redevelopment will vary based upon the amount of site surface area that is covered by existing impervious surfaces.***

[1] ***For sites meeting the definition of a redevelopment project and having less than 40% existing impervious surface coverage, the stormwater management requirements will be the same as new development projects, with the important distinction that the applicant can meet those requirements either on site or at an approved off-site location (i.e., off-site mitigation). The applicant must satisfactorily demonstrate that impervious area reduction, LID strategies and BMPs have been implemented on site to the MEP.***

Not applicable.

[2] ***For sites meeting the definition of a redevelopment project and having more than 40% existing impervious surface coverage, stormwater shall be managed in accordance with one or more of the following techniques, listed in order of preference:***

[a] ***Implement measures on site that result in mitigation and treatment of at least 30% of the existing impervious cover as well as 50% of the additional proposed impervious surfaces and pavement areas through the application of LID; or***

Not applicable.

[b] ***Implement other LID techniques on site to the MEP to provide mitigation and treatment for at least 50% of the entire site area.***

Not applicable.

[3] ***The owner/applicant may utilize off-site mitigation to meet the redevelopment requirements when the following standards have been met:***

[a] ***The owner/applicant shall demonstrate, to the satisfaction of the Planning Board, that on-site treatment has been implemented to the MEP.***

Not applicable.

[b] ***The owner/applicant shall find an approved, off-site location within the same watershed as the project site or within the drainage area of the same receiving water body.***

Not applicable.

[c] Off-site mitigation shall be equivalent to no less than the total area of impervious cover not treated on site.

Not applicable.

[d] The owner/applicant shall submit a full design of the proposed off-site measures for review and approval.

Not applicable.

[e] The owner/applicant must also demonstrate that there is no downstream drainage or flooding impact as a result of not providing on-site management.

Not applicable.

(d) Erosion control standards during construction. The following standards shall be applied in project planning and shall be implemented prior to and during construction activity:

[1] All proposed measures shall meet, at a minimum, the design standards for best management practices set forth in the New Hampshire Stormwater Management Manual Volume 3 (December 2008 or current revision), a copy of which is available from the NHDES website.

Verizon Wireless will so comply to the extent applicable.

[2] When a project requires a stormwater permit from the EPA Construction General Permit (CGP) Program, copies of the stormwater pollution prevention plan (SWPPP) inspections shall be provided to the Community Services Department.

Verizon Wireless will so comply to the extent applicable.

[3] Stripping of vegetation shall be done in a manner that minimizes soil erosion. Whenever practical, natural vegetation shall be retained, protected, or supplemented.

Verizon Wireless will so comply to the extent applicable.

[4] 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.

Verizon Wireless will so comply to the extent applicable.

[5] ***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.***

Verizon Wireless will so comply to the extent applicable.

[6] ***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.***

Verizon Wireless will so comply to the extent applicable.

[7] ***Perimeter site controls shall not be placed within wetland areas, stream channels or wetland buffers.***

Verizon Wireless will so comply to the extent applicable.

[8] ***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 seven calendar days for exposed soil areas that are within 100 feet of a surface water body or a wetland and no more than 14 calendar days for all other areas. Permanent stabilization should be in place within three calendar days following completion of final grading of exposed soil areas.***

Verizon Wireless will so comply to the extent applicable.

[9] ***All temporary erosion and sediment control measures shall be maintained in functioning condition until final site stabilization is accomplished. A proposed BMP inspection schedule shall be included in the submittal.***

Verizon Wireless will so comply to the extent applicable.

[10] ***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.***

Verizon Wireless will so comply to the extent applicable.

[11] ***Special stabilization details shall be provided with the submission for any land disturbance on slopes equal to or steeper than 3:1.***

Verizon Wireless will so comply to the extent applicable.

[12] 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.

Verizon Wireless will so comply to the extent applicable.

[13] For projects proposing to disturb and expose soils in areas of 10 acres or more at one time, a temporary (or permanent) sediment basin must be provided with storage for a calculated volume of runoff from a drainage area from a two-year, twenty-four-hour storm, or equivalent control measures, where attainable, until final stabilization of the site. Alternatively, the sediment basin can be sized to provide 3,600 cubic feet of storage per acre of drainage area until final stabilization of the site. In determining appropriate locations and number of sediment basins needed, the operators may consider such factors as erodibility of site soils, slope lengths, available area on site, construction period and other unique site considerations.

Verizon Wireless will so comply to the extent applicable.

[14] Use of temporary sediment basins should avoid any additional vegetation clearing or site land disturbance not otherwise needed for post-construction. Sediment basin locations must be reviewed by the Community Services Department prior to construction and must consider the potential for off-site impacts, including public safety, especially as it relates to sediment movement and/or sediment basin failure, and alternative sediment controls must be used where site limitations preclude a safe design.

Verizon Wireless will so comply to the extent applicable.

(e) Installation and construction inspections. The owner/applicant shall be responsible for inspection requirements as follow:

[1] The Community Services Department or its designated agent shall have access to the site to complete routine inspections.

Verizon Wireless will so comply to the extent applicable.

[2] 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.

Verizon Wireless will so comply to the extent applicable.

[3] 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. [Amended 2-26-2019]

Verizon Wireless will so comply to the extent applicable.

[4] 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.

Verizon Wireless will so comply to the extent applicable.

[5] 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.

Verizon Wireless will so comply to the extent applicable.

(f) Stormwater management plan (SWMP) submittal requirements. At the discretion of the Planning Board or Community Services Department, a technical review by an independent third party may be required of any SWMP prepared under these regulations. Such a review shall be performed by a qualified professional consultant and the expense of which shall be the full responsibility of the owner/applicant.

Verizon Wireless will so comply to the extent applicable.

[1] For projects requiring minimum protection standards, a plan including the following information shall be submitted:

[a] Description of erosion and sediment control measures as well as sequence for final stabilization of the project site.

See Exhibit H (Sheets EC-1 and EC-2).

[b] Proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns.

See Exhibit H (Sheets EC-1 and EC-2).

[c] Description of LID proposed measures.

See Exhibit H (Sheets EC-1 and EC-2).

[2] For projects requiring new development or redevelopment standards, a drainage report that contains the following items shall be submitted:

[a] Description of construction period and earth movement schedule, including anticipated project start and completion dates, sequence and duration of grading and construction activities, sequence and timing of installation and/or application of soil erosion and sediment control measures as well as sequence for final stabilization of the project site.

Verizon Wireless will so comply to the extent applicable.

[b] Description of the on-site and adjacent wetlands, streams and other water resources, including methods used to identify these resources, and a description of any buffer setbacks that may apply, steep slopes, critical habitat, existing vegetation, areas with a 1% chance of being inundated by water in any given year, and whether any downstream water bodies are listed as impaired according to NHDES's most recent 303(d) list.

Verizon Wireless will so comply to the extent applicable.

[c] Soils information for proposed disturbed areas shall be delineated by a certified soil scientist. For all other areas that contribute runoff to the project site, soil types may be identified in accordance with Natural Resources Conservation Service (NRCS) countywide soil survey.

Verizon Wireless will so comply to the extent applicable.

[d] Description of existing drainage patterns, receiving water bodies or drainage infrastructure and soil types for recharge potential.

Verizon Wireless will so comply to the extent applicable.

[e] Watershed area limits, including any off-site and upstream areas contributing flow to shared drainage channels and/or infrastructure.

Verizon Wireless will so comply to the extent applicable.

[f] ***Description of proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns.***

Verizon Wireless will so comply to the extent applicable.

[g] ***Methods and assumptions used to calculate pre- and post-development runoff volume, peak discharge, and discharge velocity for the specified design storm events.***

Verizon Wireless will so comply to the extent applicable.

[h] ***Methods and assumptions used to calculate the pollutant load removal.***

Verizon Wireless will so comply to the extent applicable.

[i] ***Description of LID measures that are proposed to limit the development footprint, preserve existing vegetation and mimic existing hydrology to the extent feasible.***

Verizon Wireless will so comply to the extent applicable.

[j] ***If not used, provide rationale why LID measures are not practical for the site.***

Verizon Wireless will so comply to the extent applicable.

[k] ***Describe measures and calculations for proposed practices used to achieve no net increase in runoff volumes leaving the site.***

Verizon Wireless will so comply to the extent applicable.

[l] ***Provide calculations for the infiltration or exfiltration system.***

Verizon Wireless will so comply to the extent applicable.

[m] ***If an increase in post-development runoff volume is anticipated due to limited applicability for LID measures and site constraints, provide an assessment and supporting calculations to demonstrate no adverse impacts to downstream infrastructure, adjacent properties or aquatic habitat.***

Verizon Wireless will so comply to the extent applicable.

[n] ***Descriptions, details, and design criteria and calculations for all structural, nonstructural, permanent, and temporary erosion and sedimentation control measures and BMPs. This information should include seeding mixtures and rates, types of sod, methods of seedbed preparation, expected seeding dates (or limitations on seeding time frames), type and rate of lime and fertilizer application, and type and quantity of mulching for temporary and permanent control facilities.***

Verizon Wireless will so comply to the extent applicable.

[o] ***Where proposed changes are anticipated within mapped limits of the areas with a 1% chance of being inundated by water in any given year, provide hydrologic and hydraulic analysis to show no net increase in flood elevations.***

Verizon Wireless will so comply to the extent applicable.

[p] ***Proposed schedule for the inspection and maintenance of all erosion control measures on site prior to achieving final site stabilization.***

Verizon Wireless will so comply to the extent applicable.

[q] ***Describe procedures for removing temporary erosion control measures and removal of accumulated sediment captured by such measures.***

Verizon Wireless will so comply to the extent applicable.

[r] ***Any other specific study, calculation, or investigation as requested by the City.***

Verizon Wireless will so comply to the extent applicable.

[s] ***Describe procedures to limit and/or optimize the use of deicing materials and minimize off-site increases in chloride levels in adjacent surface water and groundwater.***

Verizon Wireless will so comply to the extent applicable.

[t] ***Provide a maintenance and inspection plan for post-construction monitoring of stormwater BMPs to ensure long-term performance and functionality, including details of who will be responsible for inspections and maintenance, proposed schedule, documentation,***

submittal procedures and contingency plans if future maintenance is required.

Verizon Wireless will so comply to the extent applicable.

[u] Provide copies of pertinent state and federal permits.

Verizon Wireless will so comply to the extent applicable.

(g) Long-term operation and maintenance. The owner shall be responsible for continued inspection and maintenance requirements.

[1] An operation and maintenance manual shall be created with the following information:

[a] The names of the responsible qualified professionals who will implement the required reporting, inspections, and maintenance activities.

Verizon Wireless will so comply to the extent applicable.

[b] An inspection checklist, identifying item or BMP, inspection frequency, and components to be inspected. The list shall clearly outline performance thresholds and triggers for maintenance.

Verizon Wireless will so comply to the extent applicable.

[c] Snow and ice removal shall be performed by a contractor certified by the "Green SnoPro" Program, or approved equivalent, following best management practices for the application of deicing materials.

Verizon Wireless will so comply to the extent applicable.

[d] Deicing log to track amount and type of deicing material applied.

Verizon Wireless will so comply to the extent applicable.

[e] A site plan clearly identifying the locations of all stormwater practices to be inspected and maintained.

Verizon Wireless will so comply to the extent applicable.

[f] Inspection and maintenance log to be submitted to the City of Dover Community Services Department on an annual basis. Documents shall be submitted no later than December 15 of each year.

Verizon Wireless will so comply to the extent applicable.

[2] ***The owner of record shall record at the Registry of Deeds documentation sufficient to provide notice to all persons 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 of the requirements for maintenance and reporting.***

Verizon Wireless will so comply to the extent applicable.

B. *Utilities.*

(1) *Water.*

(a) ***Extensions to public water mains shall be at least 12 inches in diameter. When projected development or the City's Master Plan or Capital Improvements Plan indicates that a larger water main is needed, the Planning Board may require a larger pipe.***

Not applicable.

(b) ***Extensions of public water mains shall cross the full frontage of the parcel for which development is proposed.***

Not applicable.

(c) ***Extensions of waterlines shall be designed to avoid dead-end lines, where possible.***

Not applicable.

(d) ***Extensions of and connections to the public water system shall be in accordance with Chapter 121, Sewers and Water, of the Code of the City of Dover.***

Not applicable.

(e) ***Where an extension to the municipal water system is proposed, the following items must be specified:***

[1] ***Rated normal capacity in gallons per minute at prime use time.***

Not applicable.

[2] ***Rated maximum capacity in gallons per minute at prime use time.***

Not applicable.

[3] Residual pressure of proposed tap line.

Not applicable.

(2) Sewer.

(a) Extensions of and connections to the public sewer system or private wastewater systems shall be in accordance with Chapter 121, Sewers and Water, of the Code of the City of Dover.

Not applicable.

(b) Where sanitary discharge into the municipal sewer system is anticipated, projected additional peak hour sewer load volume must be specified.

Not applicable.

(c) Where nondomestic sanitary discharge is anticipated, such effluent shall comply with the rules and regulations of Chapter 121, Sewers and Water.

Not applicable.

(3) Electric, cable television and telephone. The installation of electric power, cable television and telephone lines shall be underground throughout the site for which development is proposed. Site plans shall show any easements for these services.

See Exhibit H (Sheet C-1); the Project so complies.

C. *Driveways, accessways and internal roads.*

(1) All driveways, accessways, internal roads, and loading and service areas shall be graded, paved and improved with curbs, gutters, sidewalks and stormwater drainage facilities. The curbing along or at intersections with public street rights-of-way shall be granite. Internal walkways shall be constructed of a pervious material, such as pervious asphalt or concrete, open or pervious paving blocks, or similar technologies.

Not applicable to this Project as it is not accessible to the public.

(2) Private driveways and internal roads shall be designed and constructed pursuant to the following criteria:

	0-4 Residential Units	*5-24 Residential Units*	*Over 25 Residential Units*

Right-of-way	*30 feet*	*30 feet*	*50 feet*
Road width	*16 feet*	*24 feet*	*24 to 32 feet**
Base course	*12" bank run gravel*	*18" bank run gravel*	*18" bank run gravel*
	4" crushed gravel	*4" crushed gravel*	*6" crushed gravel*
	2" asphalt tight binder	*2" asphalt tight binder*	*2 1/2" asphalt tight binder*
	3' gravel shoulder	*3' gravel shoulder*	*3' gravel shoulder*

* ***The width of the roadway shall be determined by the site's physical characteristics and the layout and density of the proposed development.***

See Exhibit H; the Project includes an extension to an existing gravel driveway to service the tower site.

(3) ***A road plan and profile shall be submitted with the site review application. Said plans shall be prepared by a professional engineer licensed to practice in the State of New Hampshire. If a roundabout is proposed for inclusion, a professional engineer with traffic engineering certifications must design the roundabout in conformance with "Roundabouts: An Informational Guide" as adopted and amended by the Federal Highway Administration. [Amended 6-12-2018]***

Not applicable.

(4) ***When a nonresidential zoned parcel straddles or abuts a residential zone, nonresidential traffic shall be prohibited from exiting or entering through the residential zone, unless there is no other viable option. Infill and redevelopment projects shall include sidewalk improvements via installation of sidewalks back to the closest improved sidewalk.***

Not applicable.

(5) ***For access to a proposed nonresidential or to a multifamily dwelling containing more than four dwelling units, driveway entrances and exits shall be as follows: [Added 6-12-2018]***

(a) ***Where one entrance/exit is designed to service a parcel, the width shall not exceed 32 feet.***

Not applicable.

(b) ***Where two entrances/exits are designed to service a parcel, the width of each shall not exceed 24 feet.***

Not applicable.

D. ***Parking. [Amended 2-26-2019; 1-14-2020]***

(1) Paved on-site parking shall be provided in accordance with the Parking Regulation Table.

(a) A parking plan shall be submitted that delineates the number of striped parking spaces and the parking arrangement. Where appropriate, utilization of and construction of on-street parking is encouraged. Whenever a use existing on the effective date of this chapter is changed to a new use, parking facilities and access shall be provided as required herein for such new uses. The following parking standards represent maximum requirements and may be increased as part of the approval of a site development plan. During plan review, the Director of Planning and Community Development shall note a minimum number of spaces required.

Not applicable.

(b) In Dover, parking is based less on the direct land use and more on the intensity and turnover rate of the use. Efforts are made to understand that not all businesses are alike and that one commercial use may differ widely from a neighboring one, even if considered the same use. Turnover rate and intensity of use are more important to the provision of parking spaces. High turnover and high-intensity use, such as retail, require fewer spaces than a use which has a low turnover and a low intensity, such as an assembly hall or gathering place. This concept and the table below will guide the Director of Planning and Community Development in determining the minimum and maximum number of spaces required for a project. Applicants shall meet with staff and review plans prior to submission to determine parking needs.

Not applicable.

(c) Uses located in the Central Business District–General have access to more publicly available parking, whether on street or in a dedicated facility, as well as mass transit. The intent of off-street parking downtown is to provide parking for employees of a business and not for customers. With this in mind, parking calculations for nonresidential uses in the Central Business District–General may be solely for employees, upon the discretion of the Director of Planning and Community Development. [Amended 7-27-2021]

Parking Regulation Table					
Columns are cumulative, not exclusive.[1]					
	Maximum Number of Vehicle Parking Spaces				
*Use**	*Per Unit*	*Per Seats*	*Per Employee on Maximum Shift*	*Per Square Footage (GLA)*[2]	*Notes*
Residential[3] *(non- CBD-G)*	*1.4*				*+ 0.5 visitor space/unit*
Residential[3] *(CBD-G)*	*1.25*				*+ 0.4 visitor space/unit*
Educational[4]		*0.3*	*1*		
Gathering place[5]		*0.5*	*1*		
Industrial/ manufacturing[6]				*800*	
Lodging[7]	*1*		*1*		*+ 1/500 of common area*
Medical[8]	*0.5*		*1*		*Unit = bed or exam room*
Office[9]				*300*	
Retail/service[10], [11]				*275*	

** = The Director of Planning and Community Development shall determine the category of a use, if unclear. Where commercial and residential uses are co-located, only the residential parking shall be provided.*

1 *Round numbers up, if over a whole number.*

2 *GLA = gross leasable area.*

3 *Dwelling units designed for extended occupancy.*

4 *Facility that provides opportunity for learning and education; may include day care.*

5 *Facility that has a large grouping of customers for a longer duration activity.*

6 *Facility that has employees but not a high volume of customers, located in 10,000 square feet or more.*

7 *Facility with overnight units designed for short-term occupancy.*

8 *Facility that provides medical services with overnight accommodations.*

9 *Facility that has employees but not a high volume of customers or clients.*

10 *Facility that has employees and a high volume of customers or clients.*

11 *For Vehicle Refueling and Recharging Stations, "gas" pumps count as a parking space.*

Not applicable.

(2) ***In addition to parking spaces for automobiles, any proposed use that is required to obtain site review approval per § 153-4 shall be required to provide parking for bicycles on bicycle racks. The number of spaces for bicycles shall be equal to 5% of the number of parking spaces calculated by the Parking Regulation Table in Subsection D(1).***

Not applicable.

(3) ***Electric vehicle supply equipment (EVSE) and dedicated charging spaces. [Amended 7-27-2021]***

(a) ***Projects must provide Electric Vehicle Charging Readiness based upon the following standards:***

[1] ***Multi-family residential projects: 5% of the total number of new parking spaces.***

Not applicable.

[2] ***Non-residential projects: 2% of the total number of new parking spaces.***

Not applicable.

[3] ***The number would be rounded up in all cases with a minimum of one space of electric vehicle charging readiness per project requiring Site Plan Review.***

Not applicable.

(b) ***If the percentage of parking spaces providing EVSE is greater than that of section (a), the applicant shall be eligible for a fifty-percent reduction in the paved area application fee.***

Not applicable.

(c) ***For parking spaces containing an EVSE, the following minimum criteria shall apply:***

[1] ***EVSE shall be maintained by the property owner. A phone number or other contact information shall be provided on the charging station equipment for reporting when the equipment is not functioning or other problems are encountered.***

Not applicable.

[2] The placement of EVSE shall not interfere with adjacent pedestrian circulation areas, such as sidewalks or accessible routes to the building entrance.

Not applicable.

[3] Directional signs shall be installed at the parking lot entrance and at other appropriate points to effectively guide motorists to the electric vehicle charging stations.

Not applicable.

[4] Each electric vehicle charging station is required to include the following:

[a] Electric vehicle supply equipment that meets the most current infrastructure codes and standards, referenced by the U.S. Department of Energy, used for electric vehicle and infrastructure projects.

Not applicable.

[b] Signage that includes, but is not limited to the following information:
Indicating the space is only for electric vehicle charging purposes.
Days and hours of operations if time limits or tow-away provisions are to be enforced.
Voltage and amperage levels and any time of use, fees, and important safety instructions.

Not applicable.

[c] Adequate site lighting, unless charging is for daytime purposes only.

Not applicable.

[5] Shelters for outdoor charging stations are encouraged to provide added convenience for users.

Not applicable.

(4) Notwithstanding the calculations established in Subsection D(1) above, parking spaces in residential districts shall be upon or adjacent to the lot which they are designed to serve. In all nonresidential districts, such parking spaces shall be provided within a 500-foot radius of the primary structure. Parking spaces for

the Central Business (CBD) - General and Cochecho Waterfront (CWD) Zoning Districts are as follows:

(a) Construction of new floor spaces shall be accompanied by a number of parking spaces as calculated in Subsection D(1) above.

Not applicable.

(b) Conversions or changes of use that result in an increase in residential units shall provide a number of parking spaces in accordance with Subsection D(1) above.

Not applicable.

(c) Parking spaces in CBD-G and CWD Zoning Districts may be located off site anywhere within the CBD-G District in a municipal parking facility and leased from the City, or leased from a private landowner.

Not applicable.

(5) Conditional use permit for increase in number of parking spaces.

(a) A conditional use permit may be granted by the Planning Board (RSA 674:21, II) after proper public notice and public hearing for the purpose of altering any provisions of § 153-14D, Parking Regulation Table, provided that the proposed project complies with the following standards:

[1] The applicant shall submit an analysis justifying a request for increased parking requirements.

Not applicable.

[2] The conditional use permit application shall describe why increased parking is essential to each use.

Not applicable.

[3] The applicant must show that the use(s) cannot be adequately served by a combination of on- and off-street parking.

Not applicable.

[4] The applicant shall design and construct the additional vehicle storage areas, for additional parking requested, using pervious materials. The design of the area shall meet or exceed standards developed and outlined in the New Hampshire Stormwater Manual. The applicant shall also be required to retain the design

engineer as an inspector for the duration of construction of the parking area.

Not applicable.

[5] The applicant shall contribute to improving electric vehicle infrastructure by using one of the following methods: [Added 7-27-2021]

[a] For uses that typically result in at least two (2) hours or longer of parking which may include but is not limited to gathering places (restaurants and bars), retail/ service, lodging, office, educational, medical, and outdoor recreation, the applicant shall provide one Level II commercial electric vehicle charging station for every 10 parking spaces requested over the parking maximum. Electric vehicle charging station spaces shall comply with § 153-14D(3) unless determined otherwise by the Planning Board.

Not applicable.

[b] For uses that do not typically result in at least two (2) hours or longer of activity, the applicant shall provide two (2) additional parking spaces that meet electric vehicle readiness requirements for every 10 parking spaces requested over the parking maximum.

Not applicable.

[6] Additional Level I commercial electric vehicle charging stations designated for employees, and not for public use, are encouraged. [Added 7-27-2021[2]]

Not applicable.

[7] There shall be no detrimental effects on surrounding properties by any proposal.

Not applicable.

(b) A conditional use permit may also be granted by the Planning Board to allow an increase in the off-street parking requirements for a building or buildings serving more than one use. To obtain such an approval, the applicant must conclusively demonstrate that one or more such uses will

[2] Editor's Note: Former Subsection D(5)(a)[6] was redesignated as Subsection D(5)(a)[7] to accommodate the addition of the new Subsection D(5)(a)[6].

generate a demand for parking spaces primarily during periods when the other use or uses are in operation. Calculations for parking increase shall be consistent with nationally accepted parking publications such as Shared Parking (Urban Land Institute, Washington, DC, 1990). The location of all parking spaces shall conform to the provisions outlined in § 153-14D(4) unless determined otherwise by the Planning Board.

Not applicable.

(c) Any conditional use permit approval shall apply only to the application specified at the time of approval and shall not be transferable to a different application, building expansion, or change of use regardless of size. Any subsequent change(s) to a project or plan that has a shared parking agreement shall be subject to review by the Director of Planning and Community Development. If the proposed parking demand is determined to increase, the project shall be referred to the Planning Board for further review.

Not applicable.

(6) Parking lot design standards.

(a) Parking spaces shall comply with the following dimensions:

Angle	*Stall Width (feet)*	*Curb Length (feet)*	*Length of Space (feet)*	*Aisle Width* (feet)*
90°	*9*	*9*	*18*	*22*
75°	*9*	*9.5*	*19.5*	*20*
60°	*10*	*10*	*21*	*16*

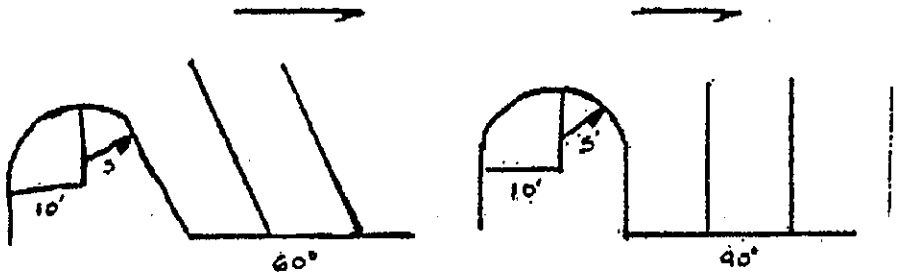
* *When garages are erected for meeting a developer's parking requirements, aisle widths shall be increased to 24 feet.*

Not applicable.

(b) One-way accessways (internal aisle) shall be a minimum of 12 feet wide, and two-way accessways shall be a minimum of 24 feet in width.

Not applicable.

(c) Entrance islands shall support a curve radii illustrated in Sketch A.



Not applicable.

(d) Parking lots shall be designed so as to avoid vehicles backing into the street.

Not applicable.

(e) Parking lots and driveway entrances for nonresidential uses shall be designed to prevent vehicles on the City street from queuing up while waiting to access the site. The Planning Board may require that the applicant hire a traffic consultant to prepare a traffic impact study to determine if the development proposal will generate traffic volumes that require traffic control measures such as deceleration or acceleration lanes, adequate turning radii for driveways, or driveways designed with adequate entrance depth.

Not applicable.

E. *Outdoor lighting.*

(1) General requirements.

(a) When the installation or replacement of outdoor lighting is part of a development proposal for which site review approval is required under these regulations, the Planning Board shall review and approve the lighting installation as part of its site review approval.

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

(b) The applicant shall submit sufficient information, in the form of an overall outdoor lighting plan, to enable the Planning Board to determine that the applicable provisions will be satisfied. The lighting plan shall include the following:

[1] A site plan, drawn to scale, showing buildings, landscaping, parking areas, and all proposed outdoor lighting fixtures.

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

[2] ***A photometric report that includes a numerical grid of lighting levels the fixtures will produce on the ground, measured in footcandles.***

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

[3] ***Specifications for all proposed light fixtures, including the type of lamp and the wattage of each lamp.***

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

[4] ***Proposed mounting height of all outdoor lighting fixtures.***

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

[5] ***Analyses showing that the proposed installation conforms to the lighting level standards in this section.***

See Exhibit H (Sheet D-2); a single access light is provided that will be in use only when operations personnel are on site.

(c) ***Principal buildings in commercial or industrial uses shall be lighted on all sides for security.***

Not applicable.

(d) ***Wiring for outdoor lighting shall be placed underground.***

Not applicable.

(e) ***All outdoor light fixtures shall be designed, oriented or shielded to prevent light or glare onto adjacent property or streets. In the Central Business District–General and Transit-Oriented Development (TOD) Subdistricts, light may overflow onto streets, but not adjacent property.***

See Exhibit H (Sheet D-2); the Project so complies.

(f) ***Holiday lighting during the months of November, December, and January shall be exempt from the provisions of this regulation, provided that such lighting does not create dangerous glare on adjacent streets or properties.***

Not applicable.

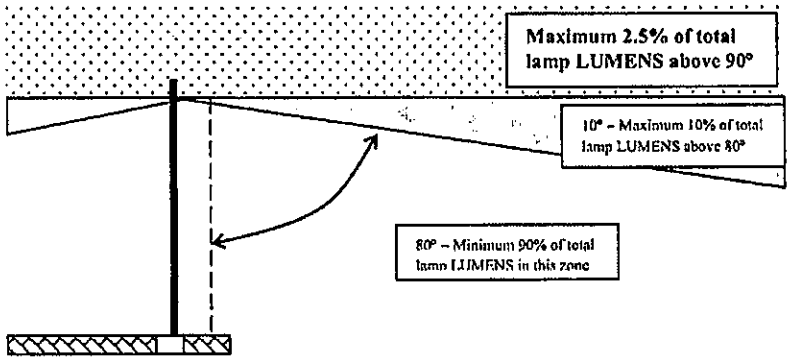
(g) All light fixtures lawfully in place prior to the date of this amendment shall be grandfathered. However, any light fixture that replaces a grandfathered light fixture, or any grandfathered light fixture that is moved, must meet the standards of this regulation.

Not applicable.

(2) Parking lot lighting. Parking lot lighting shall be designed to provide the minimum lighting necessary to ensure adequate vision and safety in parking areas, and to not cause glare or direct illumination onto adjacent properties or streets. [Amended 5-24-2016]

(a) All lighting fixtures serving parking lots shall be cutoff fixtures as defined by the Illuminating Engineering Society of North America (IESNA) and illustrated below.

Cutoff fixture as defined by IESNA



Not applicable.

(b) Parking area lighting standards are as shown in the table below. [Amended 7-27-2021]

	Zoning Districts C, CM, and IT	*Zoning Districts O, G, CBD, H, CWD and RCM*	*Zoning Districts RM-SU, RM-U, LBW and HR*
*Mounting height (maximum)**	*25 feet*	*20 feet*	*20 feet*

Minimum illumination level (at darkest spot of the parking	*No less than 0.3 footcandle; no more than 0.5 footcandle*	*No less than 0.2 footcandle; no more than 0.4 footcandle*	*No less than 0.2 footcandle; no more than 0.3 footcandle*
Uniformity	*6:1*	*5:1*	*4:1*

* *Mounting height is the vertical distance between the surface being illuminated and the bottom of the lighting fixture.*

** *Uniformity ratio is the ratio of average illumination to minimum illumination.*

Not applicable.

(c) *The Planning Board may permit an alternative to the cutoff fixtures required above if a lighting fixture of a particular period or architectural style would be more compatible with the design of the area. Such alternative fixtures shall have a mounting height of not more than 15 feet.*

Not applicable.

(3) *Lighting of gasoline station/convenience store aprons and canopies. Lighting levels on gasoline station/convenience store aprons and under canopies shall be adequate to facilitate the activities taking place in such locations. Lighting of such areas shall not be used to attract attention to the businesses.*

(a) *Areas directly under the canopy and within five feet of the canopy footprint shall be illuminated so that the minimum illuminance at grade level is between 1.0 and 5.5 footcandles. The uniformity ratio (ratio of average to minimum illuminance) shall be no greater than 4:1, which yields an average illumination level of no more than 22.0 footcandles.*

Not applicable.

(b) *Light fixtures mounted on canopies shall be recessed so that the lens cover is recessed or flush with the bottom surface (ceiling) of the canopy and/or shielded by the fixture or the edge of the canopy so that light is restrained to no more than 85° from vertical.*

Not applicable.

(c) *Lights shall not be mounted on the top or sides of the canopy, and the sides of the canopy shall not be illuminated.*

Not applicable.

(d) Areas of the parking lot that are not within five feet of the canopy footprint shall be illuminated in accordance with the requirements for parking areas set forth in Subsection E(2) above. If no gasoline pumps are provided, the entire apron shall be treated as a parking area.

Not applicable.

F. *Fire hazards. The designation of fire lanes and the storage of explosives, flammable liquids, liquefied petroleum gas or similar materials shall be in accordance with Chapter 81, Fire Prevention and Life Safety, of the Code of the City of Dover.*

Not applicable.

G. *Landscaping. In order to separate parking areas from abutting streets, to provide areas for snow disposal, to break up expanses of vehicles and pavement, to provide summer shade on pavement areas, to provide general beautification of parking facilities, and to reduce stormwater impacts, the following landscaping standards are required for nonresidential development: [Amended 6-12-2018]*

(1) General requirements.

(a) Existing vegetation shall be preserved wherever possible. Existing natural features of special interest, such as those having historic relevance, shall be delineated and located on the landscaping plan. A note should be added to the site plan indicating that the identified feature(s) shall be protected during site clearing and construction through the use of construction fencing or other adequate protective barriers. Maximum effort should be made to preserve small stands of trees, rather than individual trees, to minimize the potential for serious damage due to wind, grade changes and soil compaction. No construction materials, equipment, vehicles, or temporary soil deposits shall be located within the dripline of existing trees. Before commencement of work, protective barriers shall be installed and maintained around each plant and/or groups of plants that are to remain on site until completion. Snow fence installed around the dripline of the tree canopy is an example of an acceptable barrier.

See Exhibit H; the Project does not impact trees.

(b) All invasive plant species identified in Chapter Agr 3800, pursuant to RSA 430:55, and all nonnative plant species identified in the New Hampshire Restricted Invasive Plants Species/Watch List are prohibited.

Verizon Wireless will so comply.

(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.

Verizon Wireless will so comply.

(d) ***Effective use and preservation of natural berms, existing topography and existing vegetation is encouraged.***

Verizon Wireless will so comply.

(e) ***Plants, or a combination of plants and a solid visual barrier such as wooden fencing, or berms shall be used to screen loading, waste disposal, material storage and other areas that are likely to generate noise, dust, or other potentially disruptive conditions.***

Not applicable.

(f) ***Landscaping shall be used to establish and/or maintain an attractive streetscape adjacent to roadways. A minimum of one tree per 35 linear feet, not more than six feet apart for individual shrubs, and not more than three feet between individual perennials and ground covers or portion thereof shall be provided. [Amended 2-26-2019]***

See Exhibit H; the compound will not be visible to the casual observer as a result of its distance to the street.

(g) ***The type and location of vegetation shall not interfere with utilities or the safe and efficient flow of street traffic. All trees located under utility wires shall be low-growing species.***

See Exhibit H; the Project so complies.

(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.***

Verizon Wireless will provide same to the extent required by the City.

(i) ***Snow storage may be permitted on any grassed or nonliving landscape area.***

See Exhibit H; adequate snow storage is provided.

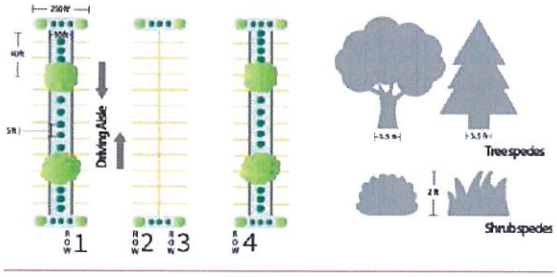
(2) Interior landscaping.

(a) In addition to the perimeter landscaping required in § 153-17C, landscaping requirements for the interior of parking lots is as follows:

Minimum Interior Parking Lot Landscaping Requirements	
Number of Parking Spaces in Lot	*Minimum Percent of Interior Landscaping*
0 to 20 spaces	*Not required*
21 to 50 spaces	*5%*
51 to 200 spaces	*8%*
Greater than 200 spaces	*10%*

Not applicable.

(b) Parking lots which have more than two aisles which are approximately parallel shall be required to have continuous landscaped planting strips separating every four rows of parking. The landscaped planting strips shall be a minimum of 10 feet in width and shall be separated from the parking area by adequate curbing. Within the landscaped planting strips, deciduous and/or evergreen shade trees shall be planted at 40 feet on center. 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 landscaped planting strips, shrubs shall be planted between the deciduous 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. [Amended 10-12-2021]



Not applicable.

(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.

Not applicable.

(d) Bare soil is not acceptable. The introduction of ground covers and/or perennials planted en masse and the use of mulch as a soil covering is acceptable. However, no more than 20% of the minimum landscaped area may be covered with nonliving landscaping material, such as bark mulch, wood chips, or leaf litter.

Not applicable.

(3) Perimeter landscaping.

(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. [Amended 10-12-2021]

Not applicable.

(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. Flood-tolerant plants shall be used in drainage swales.

Not applicable.

(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

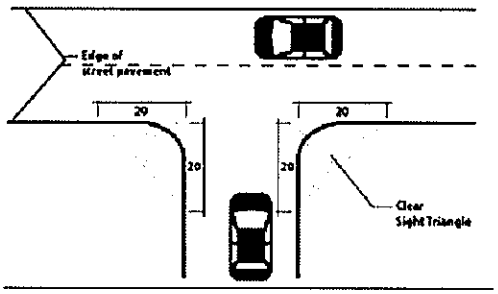
species, no more than 20% in the same genus, and no more than 30% in the same family).

Not applicable.

(d) To ensure that landscape materials do not constitute a driving hazard, a clear sight triangle shall be observed at all street and access drive intersections. Ground cover and trees with at least eight feet of limbless trunk shall be permitted within the sight distance triangle. In the case of a city street intersection, the sight triangle shall consist of the area between points 20 feet along both intersecting streets from their respective edges of pavement.

Not applicable.

(e) A wall or fence of uniform appearance, six feet high, of brick, stone or finished concrete (cannot be concrete block) may be used in conjunction with plant materials with a minimum ten-foot buffer between the fence and the street. A minimum of one tree per 35 linear feet or portion thereof shall be provided with a combination of shrubs, perennials, vines, and ground covers planted en masse per 35 linear feet, excluding curb cuts. A combination of both deciduous plants and evergreens is encouraged. [Amended 2-26-2019]



Not applicable.

(4) Stormwater management. The following provisions are intended to support the site design criteria set forth in § 153-14A. In the event of any conflict or inconsistency, the more stringent provision shall prevail.

(a) Where possible, interior landscaping islands and perimeter landscaping areas shall provide for stormwater treatment and bioretention as well as act as a visual buffer.

Not applicable.

(b) ***To promote on-site water retention and filtration, landscaped areas shall be designed in a manner that guides stormwater from on-site impervious streets, parking areas, sidewalks and walkways to vegetated areas or approved retention areas.***

Not applicable.

(c) ***When irrigation systems are proposed, a temporary watering plan/schedule or low-volume (drip) irrigation system shall be required. Permanent irrigation systems are prohibited, except as noted below. Temporary irrigation systems shall be designed and installed for efficient and effective water use to the landscaped area for a limited period of time determined by the plant material and site conditions. For those exceptions when permanent irrigation is considered necessary, such as an athletic field, permanent irrigation shall utilize water-saving technologies, including rain sensors, flow meters, and management systems that monitor current weather conditions and/or soil moisture.***

Not applicable.

(d) ***All newly planted trees, shrubs and other vegetation shall have a watering plan during the establishment period (for trees, one year per inch in caliper at planting; shrubs and other vegetation generally establish within one growing season). Mulching trees, shrubs, and plants helps retain soil moisture, moderates temperature fluctuations, provides protection from mechanical damage by mowers and trimmers, and serves as temporary covering of exposed soil until understory plants and ground covers fill in. However, thick applications of mulch (such as "volcano mulching") will kill trees and other vegetation. Mulch shall be no greater than three inches in depth and shall not be in contact with the bark or stems of plants.***

Not applicable.

(5) ***Other landscaping.***

(a) ***Each existing healthy and native or noninvasive tree, with a caliper of three inches or greater, preserved using proper protection methods within the interior parking lot area may be substituted for one tree required for every 10 parking spaces.***

Not applicable.

(b) ***Where an applicant proposes leaving a significant portion of healthy, noninvasive trees and other vegetation within the proposed construction area, the Planning Board will consider alternative landscaping designs.***

Not applicable.

(c) At the discretion of the Planning Board, alternative methods of perimeter screening may be permitted if the applicant can demonstrate that an adequate screening of the parking lot is achieved. Additional screening methods that are encouraged include earthen berms planted with grass and shrubs, fencing, and low walls.

Not applicable.

(d) If the area abutting the street is existing woodland, a twenty-five-foot woodland buffer may be left in lieu of landscaping if approved by the Planning Board.

Not applicable.

H. *Driveway location and spacing standards for nonresidential uses in the C, CM, and IT Districts. [Amended 7-27-2021]*

(1) To reduce the number of conflict points for vehicles, reduce traffic congestion, and improve traffic safety along nonresidential corridors, the following minimum standards are set forth for driveway location and spacing in the C, CM, and IT Districts:

	Variables	*Arterial Roads*	*Collector Roads*	*Local Roads*
Number of driveways per lot	—	*1 driveway per 400 feet of road frontage or fraction thereof*	*1 driveway per 200 feet of road frontage or fraction thereof*	*1 driveway per 125 feet of road frontage or fraction thereof*
	Posted Speed Limit (mph)			
Minimum driveway spacing from public street intersections	*35*	*310 feet*	*230 feet*	*155 feet*
	40	*380 feet*	*280 feet*	*190 feet*
	45	*470 feet*	*350 feet*	*230 feet*
	50	*560 feet*	*420 feet*	*275 feet*
	Posted Speed Limit (mph)			

Minimum spacing between driveways	*35*	*230 feet*	*185 feet*	*155 feet*
	40	*280 feet*	*220 feet*	*190 feet*
	45	*350 feet*	*260 feet*	*230 feet*
	50	*420 feet*	*300 feet*	*275 feet*

See Exhibit H; Verizon Wireless will be utilizing an existing driveway to access the site.

(2) ***Spacing between public street intersections and driveways is measured from the point of tangency of the intersecting street right-of-way to the nearest edge of the driveway where it intersects with the right-of-way line. Spacing between driveways is measured from the nearest edge of each driveway where intersecting with the street right-of-way. Existing driveways that do not meet the above standards may be retained, but the elimination of unnecessary access points is strongly encouraged. Notwithstanding the above standards, any lot of record shall be entitled to a minimum of one driveway.***

See Exhibit H; Verizon Wireless will be utilizing an existing driveway to access the site.

(3) ***In recognition of the unique circumstances of some parcels of land, the Planning Board shall be permitted to vary the standards set forth in Subsection H(1) above. The Planning Board may approve projects that do not conform strictly to the access standards above, provided that a finding is made by the Planning Board that safe and adequate access can be achieved. Any deviation from the standards in Subsection H(1) above can only be considered after first receiving a written recommendation from the City Engineer.***

See Exhibit H; Verizon Wireless will be utilizing an existing driveway to access the site.

(4) ***When a nonresidential zoned parcel straddles a residential zone, nonresidential traffic shall be prohibited from exiting into or entering from the residential zone, unless there is no other viable option.***

See Exhibit H; Verizon Wireless will be utilizing an existing driveway to access the site.

I. ***Incentives for reducing the number of driveways in the C, CM, and IT Districts. [Amended 7-27-2021]***

(1) ***In addition to limiting the number and location of driveways, the City of Dover encourages shared driveways for adjacent parcels, the elimination of existing driveways, and the construction of fewer driveways than permitted in § 153-14H. By limiting access points, the number of points where turning vehicles and***

through vehicles conflict is reduced. To provide incentives for shared driveways in the C, CM and IT Districts, an incentive system has been developed.

See Exhibit H; Verizon Wireless will be utilizing an existing driveway to access the site.

(2) ***An applicant may increase the maximum lot coverage permitted in the Table of Dimensional Regulations referenced in Chapter 170, Zoning, for the C, CM and IT Districts by electing to use one or more of the provisions listed below. The Planning Board shall decide if the applicant complies with the provisions of the incentive system. An applicant may utilize one or more of the following voluntary provisions:***

(a) ***Provide a shared driveway to be the sole access to the subject parcel and one or more adjacent parcels. To qualify for this incentive, the applicant shall provide appropriate easements to ensure that the shared driveway will remain in existence and will be adequately maintained.***

Not applicable.

(b) ***For parcels with existing driveways, reduce either the number of separate driveways or the total width of the existing driveways (as measured at the right-of-way line) by at least 50%, or reduce the number of driveways to one driveway of not more than 32 feet in width.***

See Exhibit H; the Project utilizes the existing driveway to access the site.

(c) ***Reduce the total number of driveways permitted, or increase the spacing between driveways by 25% over the standards set in § 153-14H(1) herein, or increase the spacing between driveways and public street intersections by 25% over the standards set in § 153-14H(1) herein.***

See Exhibit H; the Project utilizes the existing driveway to access the site.

(3) ***If the Planning Board finds that an applicant has complied with one or more of the voluntary provisions, the following incentives shall be granted. For each of the provisions achieved, the Planning Board shall permit an additional 5% of lot coverage (building footprint) above the maximum permitted in the Table of Dimensional Regulations referenced in Chapter 170, Zoning [e.g., the maximum lot coverage (building footprint) in the IT District could be increased from 33% to 38% if one provision was achieved].***

See Exhibit H; the Project utilizes the existing driveway to access the site.

J. ***Interconnections between parcels.***

(1) ***In order to reduce the number of vehicles entering and exiting arterial and collector roads, the provision of interconnecting driveways is required whenever***

feasible. These interconnecting driveways or service roads are provided to allow customers and employees to move from site to site without repeatedly using City streets.

See Exhibit H; the Project so complies.

(2) *In the C, CM and IT Districts, an applicant shall integrate an interconnecting driveway into the overall traffic and pedestrian circulation of the subject site. Interconnecting driveways shall be provided to access abutting parcels. If an adjacent parcel(s) is vacant, the applicant shall grant an easement for future access. The easements shall be written to ensure that the interconnection(s) will remain open and will be adequately maintained. The cross-connections shall be located to encourage internal traffic between abutting properties and shall be adequately marked with directional signs. [Amended 7-27-2021]*

See Exhibit H; the Project so complies.

(3) *In recognition of the unique circumstances of some parcels of land, the Planning Board shall be permitted to vary the standards set forth in Subsection J(2) above. The Planning Board may approve projects that do not conform strictly to the interconnection standards above, provided that a finding is made by the Planning Board that the unique circumstances of the parcel make compliance unreasonable. Any deviation from the standards in Subsection J(2) above can only be considered after first receiving a written recommendation from the City Engineer.*

No response necessary.

K. *Location of parking lots. [Amended 7-27-2021]*

(1) *Buildings should be sited closer to the street and parking areas should be located on the side or rear of lots in an effort to reduce the visual dominance of parking areas, improve pedestrian safety in parking lots, and increase the visibility of businesses to drivers. The following standards are required:*

(a) *For parcels in the C and CM Districts with frontage and driveway access on an arterial or collector road, a minimum percentage of the parking spaces required by these regulations or of the number of parking spaces proposed (whichever is greater) shall be located to the side or rear of the building (i.e., no closer to the front lot line than the building) according to the following:*

Number of Spaces	*Percent of Spaces to Side or Rear*
25 to 50	*50%*
51 to 75	*60%*
More than 75	*70%*

Not applicable.

(b) In recognition of the unique circumstances of some parcels of land, the Planning Board shall be permitted to vary the standards set forth in Subsection K(1)(a) above. The Planning Board may approve projects that do not conform strictly to the parking lot location standards above, provided that a finding is made by the Planning Board that the unique circumstances of the parcel make compliance unreasonable.

Not applicable.

L. *Architectural design standards.*

(1) Findings. The City of Dover Planning Board finds that:

(a) Our City contains an historic downtown area, three major thoroughfare business districts, beautiful rural landscape replete with unique natural and cultural resources, an excellent architectural tradition, a colorful history, and much visual appeal.

No response necessary.

(b) Preserving and enhancing these features is integral to maintaining the character and identity of our community.

No response necessary.

(c) Building designs which are indifferent to the traditions of our City and region, aggressively seek the attention of passing motorists, do not consider the quality of the pedestrian environment, or are erected at the lowest possible cost without due concern for aesthetics harm the character of our community, depress property values, and impair our quality of life.

No response necessary.

(d) While subjectivity and judgment is invariably part of reviewing architectural designs, there are universal principles of good design.

No response necessary.

(e) Well-crafted design standards can promote building design that is functional, economical, attractive, and harmonious. Quality development and sustainable economic development are not mutually exclusive; rather, they are interdependent.

No response necessary.

(2) Purpose.

(a) The purpose of the architectural design standards is to:

[1] Provide for high-quality architecture that respects universal design principles, enhances the appearance of Dover, reinforces pedestrian character where appropriate, and is sensitive to neighboring buildings, the broader setting, and natural and cultural resources.

No response necessary.

[2] Protect and enhance the positive visual qualities of Dover's downtown, residential neighborhoods, commercial corridors, industrial parks, and scenic and rural landscapes.

No response necessary.

[3] Encourage design which is compatible with the traditional character of Dover and New England.

No response necessary.

[4] Enhance property values and foster civic pride.

No response necessary.

[5] Minimize potential aesthetic conflicts between residential and nonresidential uses and between single-family and multifamily uses.

No response necessary.

(b) Adherence to these standards should not be burdensome, and they are not intended to stifle creativity or variety. On the contrary, the standards will likely encourage more thoughtful approaches to building design. There is much flexibility embodied in the guidelines and many ways of meeting the objectives. It is hoped that they will serve as useful guidelines for design professionals and applicants seeking to produce quality designs respectful of place and context.

No response necessary.

(3) Adoption. This section is adopted pursuant to the City of Dover Master Plan and RSA 674:21 (Innovative Land Use Controls) and 674:44 (Site Plan Review Regulations).

No response necessary.

(4) Applicability.

(a) ***Architectural design review is required as part of the site plan review process for all nonresidential structures and for all residential structures where the total number of dwelling units in one development, whether in one or more structures, exceeds four (however, in no event would any single-family structures or properties be subject to review). This includes all new construction, building additions, and alterations to buildings if those alterations would significantly affect the exterior appearance of the building. Design review is required only for building elevations and portions of structures that would be visible from a public street or path or from neighboring residential properties. All applicable development must conform to these guidelines as reasonably interpreted and applied by the Planning Board.***

No response necessary.

(b) ***Architectural design review is not conducted for routine repair or maintenance of structures, any work on the interior of a building, any existing structures for which no exterior alterations are proposed, and modifications solely for the purpose of providing safe means of egress or access in order to meet requirements of the Building Code or Life Safety Code. Architectural design review is only conducted in instances found within § 153-4, Applicability.***

No response necessary.

(5) ***Various sections of the City. Various sections of the City differ from one another in character and in appropriate treatment. The following sections are listed in order, generally, from the most sensitive to the least sensitive sections. [Amended 1-14-2020; 7-27-2021]***

No response necessary.

(a) ***CBD Central Business District. This zone encompasses the downtown areas and is highly sensitive because of the importance and challenge of maintaining a pleasing pedestrian environment. This is the Central Business District, which includes the areas along Washington Street from Chestnut Street to Main Street, all of Main Street, and a section of Central Avenue from Sixth Street to Silver Street. As one travels closer to the core areas, traditionally the buildings are taller, closer to the sidewalk, built of more substantial materials, and more elaborate in design and detailing. Proposed buildings must adhere to the "Architectural and Urban Design Guidelines" adopted by the City.***

No response necessary.

(b) ***CWD Cochecho Waterfront District. These areas are not as sensitive as existing neighborhoods in which existing residents could be vulnerable to new development over which they have little control. New commercial***

structures are not being built in traditional neighborhoods; however, this zone is adjacent to the existing downtown core, and should feel as if it is an extension of the CBD District. The architecture of the waterfront areas should encourage the development of marine-, history- or tourism-related land uses and activities, which take advantage of the peculiar characteristics of the waterfront as well as its central location in Dover and it proximity to the historic area. Proposed buildings must adhere to the "Cochecho Waterfront Development Design Guidelines" adopted by the City.

No response necessary.

(c) *G Gateway District and O Office District. These areas are sensitive because some older neighborhoods that are zoned for mixed use have been harmed by incompatible multifamily and nonresidential development. These are transitional zones, and as such, the new nonresidential components should respect the character and nature of the existing residential uses. New development should blend in with the traditional character of these neighborhoods in order not to diminish property values and the small-scale, pedestrian nature of these areas.*

No response necessary.

(d) *C Commercial District, CM Commercial Manufacturing District. It is important to enhance the quality of commercial development along these corridors (such as Routes 9, 108, 4, and 155). All serve as gateways to the City, carry high levels of traffic, and are the most prominent areas of the City. On the other hand, an intensive automobile-oriented and big box/small box character is already established in many areas. Thus, while we seek to enhance the visual experience along these corridors, there are generally fewer sensitive resources vulnerable to this type of development.*

No response necessary.

(e) *IT Innovative Technology District. We seek to enhance the quality of our business and industrial parks (such as Venture Drive). While, these are located on dead-end streets with almost no incidental traffic and with few vulnerable existing visual resources they are less sensitive, a sense of pride and professionalism should be present. Adherence to the § 153-15 is required.*

No response necessary.

(6) *General standards. An application is considered to meet the design requirements of the architectural design standards if the Planning Board, in its judgment, determines that the application overall demonstrates reasonable conformity with the purpose above, the general standards that follow, and elements of design in the next subsection.*

(a) ***Recognizing that every property, every proposal, and every situation is unique, the Planning Board may waive or modify any of the standards herein as it reasonably deems appropriate, based upon the individual circumstances of any application. No particular architectural style is stipulated, and innovative, contemporary, and distinctive designs are encouraged, provided they are respectful of general design principles and context.***

The City's architectural standards are not applicable to the Project.

(b) ***Buildings should be compatible with traditional New England architecture. They should be articulated to express an architectural identity and ideally will be handsome and dignified.***

The City's architectural standards are not applicable to the Project.

(c) ***While the use of a traditional architectural vocabulary (gables, porticos, belt courses, etc.) is desirable, designers are encouraged to use this vocabulary in an original manner that reads as contemporary.***

The City's architectural standards are not applicable to the Project.

(d) ***It is recognized that many national and regional chain businesses seek to build a standard design across the country or region without regard to local conditions. However, the Planning Board will evaluate all proposed designs for their compatibility with our own local community character and for conformance with the goals of these guidelines. It shall be the obligation of the applicants to develop designs that are compatible with our community character; the City need not make adjustments to accommodate these template designs.***

The City's architectural standards are not applicable to the Project.

(e) ***Use of false or partial mansard roofs, unconventionally shaped roofs, overly bright colors, disproportionately sized building elements, crudeness of features, or a general plastic feel of the building is not appropriate.***

The City's architectural standards are not applicable to the Project.

(f) ***Buildings should possess an overall integrity. Architectural details should not give the impression of being tacked on but rather should be integral to the overall design. (For example, use of undersized shutters on a picture window or installation of an elaborate classical portico or cupola on an otherwise clearly utilitarian big box would be discouraged.)***

The City's architectural standards are not applicable to the Project.

(g) ***Generally, the less visible or prominent a structure or facade is, the lower the level of standards will be. For example, less strict review is in order for a building located a good distance from the road or for one that is partly obscured by another structure.***

The City's architectural standards are not applicable to the Project.

(h) ***While it cannot be required under these guidelines, the reuse of existing structures that have special architectural, historical, cultural, or contextual value is strongly encouraged. [Amended 1-14-2020]***

The City's architectural standards are not applicable to the Project.

(i) ***Modifications and additions to existing buildings should be harmonious with the character of the existing building when the existing building would reasonably be considered to be in general conformance with the goals of these guidelines.***

The City's architectural standards are not applicable to the Project.

(j) ***Building design should blend with other features of the site, signage, landscaping, lighting, fencing, outbuildings, etc., to the extent practical.***

The City's architectural standards are not applicable to the Project.

(k) ***Whenever possible, signage on buildings in the CBD District is encouraged to follow the mill motif criteria as set out in § 170-32O, Mill motif design criteria, of Chapter 170, Zoning.***

The City's architectural standards are not applicable to the Project.

(7) ***Elements of design. Proposed designs should be harmonious with neighboring structures that have a visual relationship with the subject building in terms of mass, width, height, proportion, spacing, setback, and all of the other elements of design discussed below when those neighboring structures would reasonably be considered to be in general conformance with the goals of these guidelines. This is particularly applicable to older buildings located in downtown areas and residential neighborhoods.***

(a) ***Siting of building.***

[1] ***To the extent practical, structures should be located and configured in a visually harmonious manner in keeping with the terrain and vegetation and should not impede scenic views.***

The City's architectural standards are not applicable to the Project.

[2] ***Most buildings are oriented parallel or perpendicular to the street. This pattern reinforces the streetscape. Buildings should not be oriented at odd angles to the street unless this is already the prevailing pattern in the area or if it is dictated by strong topographic or site considerations.***

The City's architectural standards are not applicable to the Project.

(b) ***Scale.***

[1] ***Every effort should be made to provide an appropriate scale to new buildings both in their overall size and in their details.***

The City's architectural standards are not applicable to the Project.

[2] ***If practical, it is preferred that buildings contain at least two stories. Alternatively, a single-story building should have a relatively steep roof or a high parapet. It is required in the CBD Zone for buildings to be multistory in order to reinforce the sense of enclosure of the street.***

The City's architectural standards are not applicable to the Project.

(c) ***Proportion. Buildings and their details should be well-proportioned in accordance with commonly accepted design principles so as to create a sense of order and balance.***

The City's architectural standards are not applicable to the Project.

(d) ***Massing. Large structures should be broken into smaller masses to provide human scale, variation, and depth. These smaller masses should have a strong relationship to one another and, ideally, each smaller mass will have integrity of form. Construction of unadulterated, warehouse-style big boxes should generally be avoided (though their use is of less concern in industrial parks). Blocky multifamily structures within predominantly single- and two-family neighborhoods are highly inappropriate.***

The City's architectural standards are not applicable to the Project.

(e) ***Roof.***

[1] ***As a design element, the roof has a significant effect on the building's character. The lack of a roof often promotes a feeling of boxiness. The taller the building, the less necessary is a pitched roof. Multistory buildings in downtown and mill buildings rarely included a pitched roof.***

The City's architectural standards are not applicable to the Project.

[2] ***Incorporation of a moderate slope is preferred. Where flat roofs are used, however, there should be a distinct cornice and/or parapet to emphasize the top of the building. Extensive areas of visible roof should be broken up with dormers, cross gables, cupolas, chimneys, parapets, balustrades, and towers.***

The City's architectural standards are not applicable to the Project.

(f) ***Building facade.***

[1] ***Much attention should be given to create an attractive building facade. Broad expanses of blank walls are inappropriate. Traditionally, the parts of a facade that might be embellished, or at least articulated in some fashion, include:***

[a] ***The horizontal base where the building meets the ground (such as a different treatment for the foundation).***

The City's architectural standards are not applicable to the Project.

[b] ***The horizontal top where the building meets the sky (such as a projecting cornice with brackets).***

The City's architectural standards are not applicable to the Project.

[c] ***A horizontal section in between (such as a belt course between stories).***

The City's architectural standards are not applicable to the Project.

[d] ***The vertical corners on the left and right sides (such as corner boards or quoins).***

The City's architectural standards are not applicable to the Project.

[e] ***Vertical articulation in the middle (such as pilasters).***

The City's architectural standards are not applicable to the Project.

[f] ***The area around the door/entry (such as a portico).***

The City's architectural standards are not applicable to the Project.

[g] The areas around the windows (such as window surrounds).

The City's architectural standards are not applicable to the Project.

[2] In addition, depth may be created for the facade through use of porches, projecting or recessed sections, bay windows, or arcades.

The City's architectural standards are not applicable to the Project.

(g) Fenestration.

[1] Windows are an integral part of a building and should be incorporated on front facades, and preferably side facades, to humanize the building. It is desirable that the windows along with the door establish a coherent, orderly pattern and rhythm.

The City's architectural standards are not applicable to the Project.

[2] It is preferable that windows be vertical or at least "no more squat than square" (except as described in CBD area, below). Horizontally shaped windows are discouraged. Where horizontal windows are sought, a series of contiguous vertical windows with mullions in between should be used, arranged in a horizontal band.

The City's architectural standards are not applicable to the Project.

[3] In pedestrian-oriented downtown or waterfront commercial centers, use of large picture-type windows for retail uses on the first floor is strongly encouraged. In residential areas and on upper floors of downtown buildings, use of multiple panes of glass (or the appearance of multiple panes) rather than picture-type windows is preferred.

The City's architectural standards are not applicable to the Project.

[4] Shutters, where appropriate, should be sized properly for the window opening (approximately 1/2 the width of the opening.)

The City's architectural standards are not applicable to the Project.

(h) Entrance.

[1] ***The entrance is an important element in defining a building. Articulation of the entrance is encouraged through use of a portico, canopy, awning, sidelights, surround, or other device.***

The City's architectural standards are not applicable to the Project.

[2] ***Generally, there should be an entrance, if not the primary entrance, located on the front facade. Use of a usable front porch on residential buildings is strongly encouraged.***

The City's architectural standards are not applicable to the Project.

(i) ***Materials.***

[1] ***The use of natural materials or materials that appear natural is preferred. Materials should be high quality and durable. Wood (clapboard and shakes), brick, stone, fiber-reinforced stucco, textured block, and terra-cotta are the preferred materials, although fabricated materials which effectively imitate the character of these materials is acceptable. Conventional vinyl and aluminum siding arranged in a horizontal clapboard pattern is acceptable but not preferred. Its use is inappropriate in downtown areas.***

The City's architectural standards are not applicable to the Project.

[2] ***Sheet plastic, sheet fiberglass, T-111 plywood, pecky shingles, simulated brick, and similar materials should not be used. Use of highly reflective plastic or metal surfaces is inappropriate. Use of salvage-style brick with multiple colors is discouraged. Prefabricated metal wall panels and undressed concrete/cinder block should not be used except in industrial park areas. When these materials are used in industrial park areas, it is preferable to minimize the area over which they are used, minimize their use on front facades, and to combine their use with other materials, such as installing metal walls over a foundation of textured block.***

The City's architectural standards are not applicable to the Project.

(j) ***Color.***

[1] ***Color of buildings is reviewed for nonresidential property only. Generally, it is preferable to use two or three colors. The main color(s) on a building should generally be nature-blending, earth-tone, neutral, or pastel in character. Bright colors should be limited to accent areas. High-intensity colors, metallic colors, or fluorescent colors should not be used.***

The City's architectural standards are not applicable to the Project.

[2] Subtle colors are appropriate on larger, plain buildings, whereas smaller buildings with more detailing can more effectively incorporate brighter colors.

The City's architectural standards are not applicable to the Project.

(k) Lighting. Use of low-key, low-intensity wall pack or spot-type lighting, or lighting of signage on buildings, is appropriate. Use of lighting to highlight the building in a prominent manner, such as brightly illuminated roof fins or neon tube lighting, is discouraged.

The City's architectural standards are not applicable to the Project.

(8) Particular building types and components.

(a) Vehicle recharging and refueling station. Canopies should incorporate features to avoid the sense of a large, hovering mass. A pitched roof or other traditional roof form should be used (attractive examples include the Irving Stations in Northwood and Meredith). The fascia of the canopy should be short in height, generally not to exceed two feet. It is preferable that columns be articulated in some manner. All vertical surfaces should be nonreflective, and colors should be muted.

The City's architectural standards are not applicable to the Project.

(b) Mini-warehouses/self-storage facilities. When these facilities are located on major roads, their design must be very carefully considered. Deep setbacks should be established. The structures should be located perpendicular to the road with no doors facing the road. Use of corrugated metal on the front facades is unacceptable. Use of textured block, brick, wood, or stucco is preferred, though flat metal may be acceptable. Colors should be muted. (The facility located on Route 155 is well-designed, including the fine selection of colors.)

The City's architectural standards are not applicable to the Project.

(c) Garages. Garage doors should be relatively unobtrusive. To the extent practical, doors should be placed on side facades not facing the street, doors should be screened from view by landscaping or other structures, or garages should be set back a greater distance from the street. Where the garage is attached to the main building, it is preferable for the garage section to be subordinate to the main section by reducing the size and recessing it beyond the main section.

The City's architectural standards are not applicable to the Project.

(d) ***Utility elements. To the extent practical, all utility elements, such as dumpsters, utility meters, and ground-mounted air-conditioning units, should be screened and located such that they are not visible from a public way or neighboring residential properties. Aboveground storage tanks, with the exception of businesses that sell fuel, should be screened or hidden from view.***

The City's architectural standards are not applicable to the Project.

(e) ***Fences. Use of chain-link fences in front or side yards is discouraged. When they are used in these areas, the chains should be covered in a colored vinyl (such as dark green) or equivalent.***

The City's architectural standards are not applicable to the Project.

(9) ***Process.***

(a) ***Applicants should submit elevation drawings drawn to scale of each pertinent facade. A color board containing actual color samples of exterior finishes, keyed to the elevations and indicating the manufacturer's name and color designation, should also be submitted. Applicants should also submit a material sample, if appropriate, such as the type of brick proposed.***

The City's architectural standards are not applicable to the Project.

(b) ***Any proposed building illumination must be submitted and approved. No such lighting may be installed without approval.***

The City's architectural standards are not applicable to the Project.

(c) ***Elevation drawings must be prepared by a registered engineer, architect, or landscape architect (use of a registered architect is strongly encouraged). The Planning Board may waive this requirement in the case of smaller structures, less prominent structures, or as it deems appropriate.***

The City's architectural standards are not applicable to the Project.

(d) ***While applicants are required to meet the standards herein, it is not necessary to submit waiver requests from any specific design standards herein. It shall be up to the Planning Board to determine if the overall proposal meets the intent of this subsection.***

The City's architectural standards are not applicable to the Project.

(e) ***At its option, the Planning Board may secure the services of a consulting architect or other professional to assist in the review of an application.***

The Board may impose reasonable fees upon an applicant to cover this expense.

The City's architectural standards are not applicable to the Project.

(f) ***As part of the overall site review process, the Technical Review Committee will review plans for compliance with these standards and report to the Planning Board as to adherence.***

The City's architectural standards are not applicable to the Project.

§ 153-15. Design standards for Innovative Technology (IT) District. [Amended 7-27-2021]

A. ***Purpose. These design standards are adopted to regulate development within the Innovative Technology (IT) District, which provides an area for large-scale high technology, research, professional office and clean manufacturing uses needing large sites and high aesthetic standards. The design standards are intended to:***

(1) ***Establish and maintain high aesthetic standards in the IT District.***

The Project is sited to minimize its overall viewshed to the extent practicable.

(2) ***Preserve the district's natural resources and visual character by assuring that improvements are properly related to their sites and to neighboring developments.***

The Project is sited to minimize its overall viewshed to the extent practicable.

(3) ***Encourage good design and innovation in site planning and development, including architecture, landscaping, and graphic design.***

The Project is sited to minimize its overall viewshed to the extent practicable.

(4) ***Encourage the compatible and complementary development of each site in the district.***

The Project is sited to minimize its overall viewshed to the extent practicable.

(5) ***Minimize conflicts between residential and nonresidential uses.***

See Exhibit G. The Project is sited to provide reliable wireless service to the area.

B. ***Building siting and design. The general character of the IT District is intended to be a campus or parklike setting, with emphasis on the natural characteristics of the site. The site design should create a sense of entry into the site and into the businesses within the site through landscaping, facade treatment, and signage. The architectural character of each building shall be of contemporary design and style. The design should integrate the building's form, textures and colors with the particular landscape and topographical character of each site. Specific requirements are as follows:***

(1) ***All exterior building walls and structures shall be constructed with attractive, durable materials such as textured concrete, masonry, stone, brick, clapboard, finishing wood, stucco or glass.***

Not applicable; no buildings are proposed.

(2) ***Buildings with exterior walls made of metal or corrugated steel shall not be permitted.***

Not applicable; no buildings are proposed.

(3) ***Building roofs shall be uncluttered, and when flat roofs are visible from public roads, pitched roofs or parapets are required.***

Not applicable; no buildings are proposed.

(4) ***Rooftop and ground-mounted mechanical units and ventilating fans are to be either integrated into the design of the building or screened from view.***

Not applicable; no buildings are proposed.

(5) ***All exterior service, loading, storage and utility areas shall be located at the side or rear of the building and screened or sheltered so as not to be visible from the public road or adjacent parcels.***

Not applicable; no buildings are proposed.

C. ***Parking areas and pedestrian circulation.***

(1) ***Parking areas shall be screened from public streets and existing residential uses so as to minimize the visibility of such areas.***

See Exhibit H; the Project so complies.

(2) ***A majority of the parking spaces shall be located to the side or rear of the buildings.***

Not applicable; no buildings are proposed.

(3) ***All sites shall be designed so as to promote safe pedestrian access, not only within the development but to adjacent properties and public streets.***

See Exhibit H; the Project so complies.

D. ***Landscaping.***

(1) ***A landscaping plan shall be submitted as part of the development application. The landscaping plan shall depict a scheme that creates a parklike setting. Maintenance of existing vegetation should be incorporated in the landscaping plan when appropriate.***

See Exhibit H; the required landscaping has been proposed.

(2) ***Existing trees of significant size or special character should be preserved wherever possible.***

See Exhibit H; the Project has been sited in an open field without disturbance to existing trees.

(3) ***All trees should be planted in a permeable area of no less than a three-foot-wide radius from the base of the tree.***

See Exhibit H.

(4) ***Planting islands should be used to define vehicular and pedestrian circulation patterns and to break up large expanses of pavement. A combination of end cap islands and linear islands running parallel to parking rows is preferred. Islands should be planted with either grass or evergreen shrubs and include trees.***

Not applicable.

(5) ***Landscaping should be maintained to present a healthy appearance, and dead materials should be replaced.***

Verizon Wireless will so comply.

E. ***Exterior lighting. Exterior lighting shall be low profile. High-intensity directional lighting shall be prohibited. Lighting shall be designed and oriented so as to avoid glare onto adjacent property or streets.***

Not applicable.

Site Name: Dover West NH

Location Code: 721391

Doc # 230003353 03/27/2023 12:08:09 PM
Book 5101 Page 84 Page 1 of 5
Catherine A. Berube
Register of Deeds, Strafford County

MEMORANDUM OF LEASE

31664165 BY AND BETWEEN

LIONEL R. PARADIS, JR. and KRISTINA L. PARADIS
having an address at
180 Tolend Road
Dover, New Hampshire 03820
(jointly and severally, "Lessor");

AND

CELLCO PARTNERSHIP
d/b/a Verizon Wireless
having an address at
c/o Verizon Wireless
One Verizon Way, Mail Stop 4AW100
Basking Ridge, New Jersey 07920
("Lessee")

WITH RESPECT TO THE PROPERTY LOCATED AT:

STREET ADDRESS:	180 Tolend Road, Dover, New Hampshire
COUNTY:	Strafford
MAP/LOT:	F-2-0-0

THIS INSTRUMENT SHOULD BE RECORDED ~~AND RETURNED TO:~~

SNYDER & SNYDER, LLP
94 White Plains Road
Tarrytown, NY 10591
ATTN: LESLIE J. SNYDER

Return to: Rae Bodonyi/ LRS
5455 Detroit Rd, STE B
Sheffield Village, Ohio 44054
440-716-1820

MEMORANDUM OF LEASE

This MEMORANDUM OF LEASE made as of this 2 day of February, 2023 ~~2022~~ (the "Memorandum") by and between LIONEL R. PARADIS, JR. and KRISTINA L. PARADIS, husband and wife, individuals whose mailing address is 180 Tolend Road, Dover, New Hampshire 03820, hereinafter jointly and severally designated as "LESSOR", and CELLCO PARTNERSHIP d/b/a Verizon Wireless, a Delaware general partnership with its principal offices at c/o Verizon Wireless, One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920-1097, hereinafter designated as "LESSEE".

WITNESSETH:

1. Lessor is the owner of the property known as 180 Tolend Road, Dover, Strafford County, New Hampshire and referred to as Map/Lot F-2-0-0 on the tax map of the Town of Dover, County of Strafford (hereinafter the term "Property" shall refer to the property together with all improvements thereon). Except as otherwise specified in this Memorandum, all capitalized terms used herein shall have the meanings as defined in the Lease.

2. By Lease dated as of January 12, 2023 ~~2022~~ (the "Lease"), Lessor has leased to Lessee the Premises, together with the Easement, which are generally shown on Exhibit "B" of the Lease.

3. The Initial Term of the Lease is for five (5) years, expiring five (5) years after the Commencement Date. The Initial Term is estimated on the date hereof to expire on September 30, 2028. The Lease also has four (4) extension terms of five (5) years each unless the Lessee terminates it at the end of the then current term by giving Lessor written notice of the intent to terminate at least three (3) months prior to the end of the then current term. In addition, Lessee has a right of first refusal under the Lease.

4. The terms, covenants and provisions of the Lease, the terms of which are hereby incorporated by reference into this Memorandum, shall extend to and be binding upon the respective executors, administrators, heirs, successors and assigns of Lessor and Lessee.

5. The rights, obligations and remedies of Lessor and Lessee, respectively, with reference to each other and the Premises shall be fixed, determined and governed solely by the terms of the Lease, this being a Memorandum of Lease executed by the parties hereto solely for the purpose of providing an instrument for recording in lieu of recording the Lease. The parties hereto have executed and delivered this Memorandum of Lease for the purpose of giving notice of the Lease to whomsoever it may concern. For a statement of the rights, privileges and obligations created under and by the Lease and of the terms, covenants and conditions therein, reference should be made to the Lease and in the event the terms of this Memorandum conflict with the terms of the Lease, the terms of the Lease shall be controlling.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals as of the date set forth above.

LESSOR:

LIONEL R. PARADIS, JR.
Date: 11/10/22

Witness

KRISTINA L. PARADIS
Date: 11/10/22

Witness

LESSEE:
CELLCO PARTNERSHIP
d/b/a Verizon Wireless

BY:
Name: Keith Murray
Title: Director Network Field Engineering
Dated: 2-2-23

Witness

STATE OF NEW HAMPSHIRE)

: ss. :

COUNTY OF STRAFFORD)

On this 10 day of November, 2022, before me, the undersigned personally appeared LIONEL R. PARADIS, JR., proved to me through satisfactory evidence of identification, which were New Hampshire Licence NH 1495867, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily in his capacity for its stated purpose as his own free act and deed.

Signature and Office of Individual
Taking Acknowledgment

RICHARD A KINCAID NOTARY PUBLIC MY COMMISSION EXPIRES 09/07/2027 STATE OF NEW HAMPSHIRE

On this 10 day of November, 2022, before me, the undersigned personally appeared KRISTINA L. PARADIS, proved to me through satisfactory evidence of identification, which were New Hampshire Licence NH 1422371, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it voluntarily in her capacity for its stated purpose as her own free act and deed.

Signature and Office of Individual
Taking Acknowledgment

RICHARD A KINCAID NOTARY PUBLIC MY COMMISSION EXPIRES 09/07/2027 STATE OF NEW HAMPSHIRE

State of Connecticut

~~COMMONWEALTH OF MASSACHUSETTS)~~

: ss.: Wallingford

COUNTY OF New Haven)

On this 2nd day of Feb, 2023, before me, the undersigned personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, that by his signature on the instrument, the individual, or the entity, **CELLCO PARTNERSHIP d/b/a Verizon Wireless**, upon behalf of which the individual acted, executed the instrument, and that such individual made such appearance before the undersigned in the City/Town of Wallingford, County of New Haven, ~~Commonwealth of Massachusetts.~~ State of Connecticut

A. Tyurin

Signature and Office of Individual

Taking Acknowledgment

ALEKSEY TYURIN
Notary Public, State of Connecticut
My Commission Expires Aug. 31, 2024

ALEKSEY TYURIN NOTARY PUBLIC STATE OF CONNECTICUT EXP. 08/31/2024

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
Phone: (603) 644 2800
support@csquaredsystems.com

RF Report

Proposed Wireless Facility
180 Tolend Road
Dover, NH 03820

June 13, 2023

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Attachment B: Dover W NH – 700 MHz LTE Coverage with Proposed Site
Attachment C: Dover W NH – Existing 700 MHz LTE Sector Footprints
Attachment D: Dover W NH – 700 MHz LTE Sector Footprints with Proposed Site
Attachment E: Dover W NH – Area Topography Map

1. Overview

This RF Report has been prepared on behalf of Verizon Wireless in support of its application to the City of Dover for the installation and operation of a wireless facility located 180 Tolend Road. The proposed facility would consist of a 104' ± monopole tower within a fenced compound along with ground-based equipment cabinets and associated equipment mounted on the proposed tower.

This report concludes that the proposed site will fill in coverage gaps and provide additional capacity to western Dover in order to improve deficient service areas primarily along Route 9 (Franklin Pierce Highway), 6th Street, Tolend Road, and the surrounding roads and neighborhoods in the proximity of the proposed site.

Included in this report is: a brief summary of the site's objectives, maps showing Verizon Wireless' current network plan, and modeled Radio Frequency coverage of the subject site and the surrounding sites in Verizon Wireless' network.

2. Introduction

Verizon Wireless provides digital voice and data communications services using 4th Generation (4G) voice and data services over LTE technology in the 700 MHz, Cellular (800 MHz), PCS (1900 MHz), and AWS (2100 MHz) frequency bands as allocated by the FCC, along with the CBRS band (3.5-3.7 GHz). It is also in the midst of deploying advanced 5th generation (5G) NR services in its cellular, C-band (3.7-3.98 GHz) and 28 GHz licensed frequency bands. These 4G and 5G networks are used to provide high-speed wireless connections used by mobile devices for fast web browsing, media streaming, video conferencing, and other applications that require broadband connections. The mobile devices that benefit from these advanced networks include typical smartphones, tablets, laptops, and Wi-Fi hotspots. With the continual advancement of its networks, Verizon Wireless customers will enjoy even faster connections to people, information, and entertainment in a day and age when reliable wireless connectivity is an indispensable part of daily personal and business life.

As explained within this report, Verizon Wireless has identified the need to add a new facility to its existing network of sites in the Dover area to improve coverage and capacity to a significant gap in service that now exists in the city, in order to support reliable communications and meet the growing demand in the area.

To maintain a reliable and robust communications system for the individuals, businesses, public safety workers and others who use its network, Verizon Wireless deploys a network of cell sites (also called wireless communications facilities) throughout the areas in which it is licensed to provide service. These cell sites consist of antennas mounted on structures, such as buildings and towers, supported by radio and power equipment. The receivers and transmitters at each of these sites process signals within a limited geographic area known as a "cell."

Mobile subscriber handsets and wireless devices operate by transmitting and receiving low power radio frequency signals to and from these cell sites. Handset signals that reach the cell site are transferred through land lines (or other means of backhaul transport) and routed to their destinations by sophisticated electronic equipment. In order for Verizon Wireless' network to function effectively, there must be adequate overlapping coverage between the "serving cell" and adjoining cells. This not only allows a user to access the network initially, but also allows for the transfer or "hand-off" of calls and data transmissions from one cell to another; and prevents unintended disconnections or "dropped calls."

Verizon Wireless' antennas also must be located high enough above ground level to allow transmission (a.k.a. propagation) of the radio frequency signals above trees, buildings, and other natural or man-made structures that may obstruct or diminish the signals. Areas without adequate radio frequency coverage have substandard service, characterized by dropped and blocked calls, slow data connections, or no wireless service at all, and are commonly referred to as coverage gaps.

The size of the area potentially served by each cell site depends on several factors including the number of antennas used, the height at which the antennas are deployed, the topography of the surrounding land, vegetative cover, and natural or man-made obstructions in the area. The actual service area at any given time also depends on the number of customers who are on the network in range of that cell site. As customers move throughout the service area, the transmission from the phone or other device is automatically transferred to the Verizon Wireless facility with the best reception, without interruption in service, provided that there is overlapping coverage between the cells.

Each cell site must be primarily designed to strike a balance between the overall geographic coverage area it will serve, and the site's capacity to support the usage within the coverage footprint. In rural areas, cell sites are generally designed to have broader coverage footprints because the potential traffic is sparser and distributed over a larger area. In more densely populated suburban and urban environments, the capacity to handle calls and data transmissions is of increasing concern, and cell sites must limit their coverage footprint to an area where the offered network traffic can be supported by the radio equipment and resources. Due to the aggressive historical and projected growth of mobile usage, particularly for mobile data (more than tripled from 2016-2021 for mobile wireless data traffic in the U.S.[1]), instances arise where the usage demand can no longer be supported by the site(s) serving an area, and new facilities must be integrated to provide capacity relief to the overloaded sites.

We have concluded that by installing the proposed wireless communication facility at 180 Tolend Road at an antenna centerline height of 100' AGL (above ground level), Verizon Wireless will be able to provide improved coverage and additional capacity to residents, businesses, and traffic corridors within western Dover that are currently located within a gap in service of Verizon Wireless' network.

[1] "2022 Annual Survey Highlights", September 13, 2022, CTIA. https://www.ctia.org/news/2022-annual-survey-highlights

3. The Proposed Facility

Verizon Wireless' plan for this proposed facility consists principally of the following elements:

1) A 104' ± monopole inside the 60' x 60' fenced compound within Verizon's 75' x 75' lease area.
2) Telecommunications equipment cabinets with utility connections, installed on a concrete pad with ice canopy within the fenced compound;
3) Up to twelve (12) panel antennas (4 sectors, 3 per sector) mounted on the proposed monopole at a centerline elevation of 100' AGL;
4) Remote Radio Heads (RRHs) with accessory junction boxes and surge suppressors, mounted alongside the antennas;
5) A 30kW diesel generator mounted on a concrete pad within the proposed compound;
6) Underground utilities and telco/fiber to the proposed equipment compound;
7) An ice bridge from the proposed equipment cabinets to the proposed monopole to protect cabling between Verizon Wireless' equipment and the proposed monopole.

4. Coverage and Capacity Objectives

As mentioned above, Verizon Wireless is in the process of advancing its 4G LTE high-speed wireless broadband system in the 700 MHz, Cellular, PCS, AWS and CBRS frequency bands, in accordance with its applicable licenses from the FCC. Verizon is also deploying a 5G NR system in its licensed cellular, C-Band, and 28 GHz frequency bands. In order to expand and enhance their wireless services throughout New England, Verizon Wireless must fill in existing coverage gaps and address capacity, interference, and high-speed broadband issues. As part of this effort, Verizon Wireless has determined that significant gaps in service exist in and around sections of Dover, as described further below.

Verizon Wireless currently operates wireless facilities similar to the proposed facility within Dover and the surrounding cities/towns. Due in large part to the distances between the surrounding sites, the intervening topography, and volume of user traffic in the area, these facilities do not provide sufficient coverage to portions of the City. Specifically, Verizon Wireless determined that much of Dover is without reliable service in the following areas and town roads[2], including but not limited to:

- Route 9 (Franklin Pierce Highway);
    - Serves ~ 11,800 vehicles per day, as measured east of Industrial Park Drive (2022);
- Tolend Road;
    - Serves ~ 4,300 vehicles per day, as measured east of Dean Drive (2022);
- 6th Street;
    - Serves ~ 8,950 vehicles per day, as measured west of Glenwood Ave. (2022);
- The surrounding businesses, roads and neighborhoods in the proximity of the proposed site and the above-mentioned roads.

The proposed site at 180 Tolend Road ("Dover W") is needed to fill in these targeted gaps in service, in order to improve network quality and reliability for Verizon Wireless subscribers traveling along these roads, as well as to the residents, businesses, and visitors in this area.

[2] Traffic counts are sourced from the New Hampshire Department of Transportation, Transportation Data Management System. https://nhdot.public.ms2soft.com/tcds/tsearch.asp?loc=nhdot

5. Site Search and Selection Process

To find a site that provides acceptable coverage, adequate capacity, and fills the gaps in service, computer modeling software is used to define a search area. The search ring identifies the area within which a site could be located (assuming sufficient height is considered) that would have a high probability of addressing the significant coverage gap and/or meeting the capacity objectives established by the Verizon Wireless RF (Radio Frequency) engineers.

Once a search ring is determined, Verizon Wireless' real estate specialists search within the proximity of the defined area for existing buildings, towers, and other structures of sufficient height that would meet the defined objectives. If none are found, then the focus shifts to "raw land" sites. A suitable site must satisfy the technical requirements identified by the RF engineers, must be available for lease, and must have access to a road and be otherwise suitable for constructing a cell site of the required size and height. Every effort is made to use existing structures before pursuing a "raw land" build to minimize the number of new towers throughout the cities and towns being served.

Since no suitable existing structures in the area have been identified, Verizon Wireless concluded that the proposed monopole at 180 Tolend Road is necessary to address its targeted coverage and capacity objectives.

6. Pertinent Site Data

Table 1 below details the site-specific information for the existing (on-air) and proposed Verizon Wireless sites used to perform the coverage analysis and generate the coverage plots provided herein.

Site Name	Address	City/Town	Location		Structure Type	Antenna Height (ft AGL)	Status
			Latitude	Longitude			
Dover NW	304 Long Hill Road	Dover	43.2287	-70.9252	Self-Support	163	On-Air
Rochester 3	133 Black Water Road	Rochester	43.2601	-70.9515	Monopole	145	On-Air
Barrington E	264 Route 125	Barrington	43.2275	-70.9923	Self-Support	137	On-Air
Barrington N Riv	2 Jacobs Way	Barrington	43.2089	-71.0903	Monopole	110	On-Air
Dover 2	271 Mast Road	Dover	43.1697	-70.8978	Monopole	146	On-Air
Dover DT	100 Main Street	Dover	43.1959	-70.8724	Smokestack	115	On-Air
Dover Point	2 Spur Rd Extension	Dover	43.1668	-70.8585	Monopole	140	On-Air
Durham	33 Beech Hill Road	Durham	43.1566	-70.9396	Monopole	295	On-Air
Durham UNH 2	15 Strafford Avenue	Durham	43.1390	-70.9303	Rooftop	119.5	On-Air
Eliot	66 Dow Highway (Route 236)	Eliot	43.1367	-70.7769	Monopole	138	On-Air
Lee 5 Corners	Rt. 4 / 11 Concord road	Lee	43.1515	-71.0138	Monopole	170	On-Air
Madbury E	3 Jenkins Road	Madbury	43.1433	-70.8778	Monopole	125	On-Air
Nottingham E	19 Turnpike Road	Barrington	43.1560	-71.0595	Monopole	150	On-Air
Nottingham N	185 Old Turnpike Rd.	Nottingham	43.1830	-71.1067	Self-Support	180.05	On-Air
Rollinsford E	40 Jessie Doe Road	Rollinsford	43.2356	-70.8295	Monopole	140	On-Air
Rollinsford W	17 Highland Ave	Rollinsford	43.2097	-70.8692	Monopole	88	On-Air
S Berwick ME	78 York Woods Road	South Berwick, ME	43.2030	-70.7853	Self-Support	170	On-Air
Somersworth 2	157 Route 108	Somersworth	43.2364	-70.8931	Guyed	115	On-Air
Dover W	**180 Tolend Road**	**Dover**	**43.1993**	**-70.9144**	**Monopole**	**100**	**Proposed**

Table 1: Verizon Wireless Site Information Used in Coverage Analysis [3]

[3] Some sites listed in this table are outside the plot view but are included for completeness of information.

7. Coverage Analysis and Propagation Plots

The signal propagation plots provided in this report were produced using deciBel Planner™, a Windows-based RF propagation computer modeling program and network planning tool. The software considers the topographical features of an area, land cover, antenna models, antenna heights, RF transmitting power and receiver thresholds to model coverage and other related RF parameters used in site design and network expansion.

The coverage plots included as attachments show coverage based on RSRP signal strengths of -95 dBm and above. All other areas (depicted in white) fall within coverage areas characterized by poor service quality, low data throughput, and the substantial likelihood of unreliable service.

Attachments A - E are discussed below:

Attachment A titled *"Dover W NH – Existing 700 MHz LTE Coverage"* shows the coverage provided to areas of Dover from the "On-Air" sites listed in Table 1. The green areas represent the minimum desired level of coverage for this area. The deficient areas of coverage are defined by the unshaded or "white" areas. As shown in this plot and described in the Coverage and Capacity Objectives section of this report, much of Dover is in an area of deficient coverage.

Attachment B titled *"Dover W NH - 700 MHz LTE Coverage with Proposed Site""* shows the composite coverage with the proposed "Dover W" facility. As shown by the additional areas of coverage, the proposed facility will provide coverage to:

- ~ 0.7 mi along Route 9;
- ~ 1.3 mi along 6th Street;
- ~ 1.4 mi along Tolend Road;
- ~ 1.3 mi along 6th Street;
- ~ 0.4 mi along Route 16 (Spaulding Turnpike);
- ~ 2,000 additional residents[4];
- ~ 3,100 additional employees[5];
- The surrounding roads and neighborhoods in the proximity of the proposed site.

[4] Residential population counts referenced here and elsewhere within this report are based upon the 2020 U.S. Census data.

[5] Employee population counts referenced here and elsewhere within this report are based upon the 2019 U.S. Census Bureau LEHD database.

Attachment C titled *"Dover W NH – Existing 700 MHz LTE Sector Footprints"* depicts the areas primarily served by the sectors (a.k.a. signal "footprints") of the surrounding Verizon Wireless macro sites in the area, which are shown by the unique color for each particular sector of interest. For clarity, all other sectors of less interest with respect to the proposed site are shown in grey. As demand for wireless voice and data services continues to grow, Verizon Wireless manages the footprint of each sector so that it can support the demand within the area it is primarily serving. In addition to improving coverage to the area, the proposed site will also serve existing and anticipated demand in the vicinity and thereby offload some of the burden experienced by the surrounding sites. In that way, those sites will be able to more adequately serve the demand for service in the areas nearer to those surrounding sites. Please note that the outer parts of each sector footprint may include areas that presently have signal strength below the targeted value required for reliable service to Verizon Wireless' customers. The fact that low-level signal may reach these areas does not mean that these areas experience adequate coverage. These unreliable areas of low signal level can impose a significant capacity burden on the sites primarily serving the area.

Attachment D titled *"Dover W NH - 700 MHz LTE Sector Footprints with Proposed Site""* shows the composite coverage with the overall footprint of the proposed facility in dark green. As shown in this map, the proposed "Dover W" facility is an effective solution to provide capacity relief to the area, particularly to the "Durham" alpha sector (red) and the "Dover DT" gamma sector (orange). The proposed facility is located near the targeted area of deficient coverage making it particularly suited to provide a dominant server to this gap in service. Table 2 below details the capacity relief based on the sector footprints shown in Attachments C and D.

Sector	Current			With "Dover W"			Offload Summary		
	Area (mi^2)	Employee Pops	Residental Pops	Area (mi^2)	Employee Pops	Residental Pops	Total Area Offloaded (mi^2)	Total Employee Pops Offloaded	Total Residential Pops Offloaded
Durham Alpha	5.1	1799	1055	3.92	217	589	1.18 (23.1%)	1582 (87.9%)	466 (44.2%)
Dover DT Gamma	1.6	3679	5755	1.1	2113	5177	0.5 (31.3%)	1566 (42.6%)	578 (10%)

Table 2: Capacity Offload Summary

Attachment E titled *"Dover W NH – Area Topography Map"* details the topographical features around the proposed "Dover W" site. These terrain features play a key role in dictating both the unique coverage areas served from a given location, and the coverage gaps within the network. This map is included to provide a visual representation of the terrain variations that must be considered when determining the appropriate location and design of a proposed wireless facility. The blue and green shades correspond to lower elevations, whereas the orange, red, and grey shades indicate higher elevations.

8. Certification of Non-Interference

Verizon Wireless certifies that the proposed facility will not cause interference to any lawfully operating emergency communication system, television, telephone or radio, in the surrounding area. The FCC has licensed Verizon Wireless to transmit and receive in specific frequency blocks of the 700 MHz band, the Cellular band, the PCS band, the AWS band, the CBRS band, the C-band, and 28 GHz band of the RF spectrum. As a condition of the FCC licenses, Verizon Wireless is prohibited from interfering with other licensed devices that are being operated in a lawful manner. Furthermore, no emergency communication system, television, telephone, or radio is licensed to operate on these frequencies, and therefore interference is highly unlikely.

9. Summary

In undertaking its build-out of 4G LTE and 5G NR service in Strafford County, Verizon Wireless has determined that an additional facility is needed to provide reliable service and additional capacity throughout areas of western Dover, NH. Verizon Wireless determined that the proposed monopole at 180 Tolend Road in Dover at an antenna centerline height of 100 feet (AGL) will provide additional coverage and capacity needed in the targeted coverage areas including key roadways such as Route 9 (Franklin Pierce Highway), 6th Street, Tolend Road, and the surrounding roads and neighborhoods in the proximity of the proposed site. Without the installation of the proposed site, Verizon Wireless will be unable to improve and expand its wireless communication services in this area of Dover; therefore, Verizon Wireless respectfully requests that the City of Dover act favorably upon the proposed facility.

10. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.

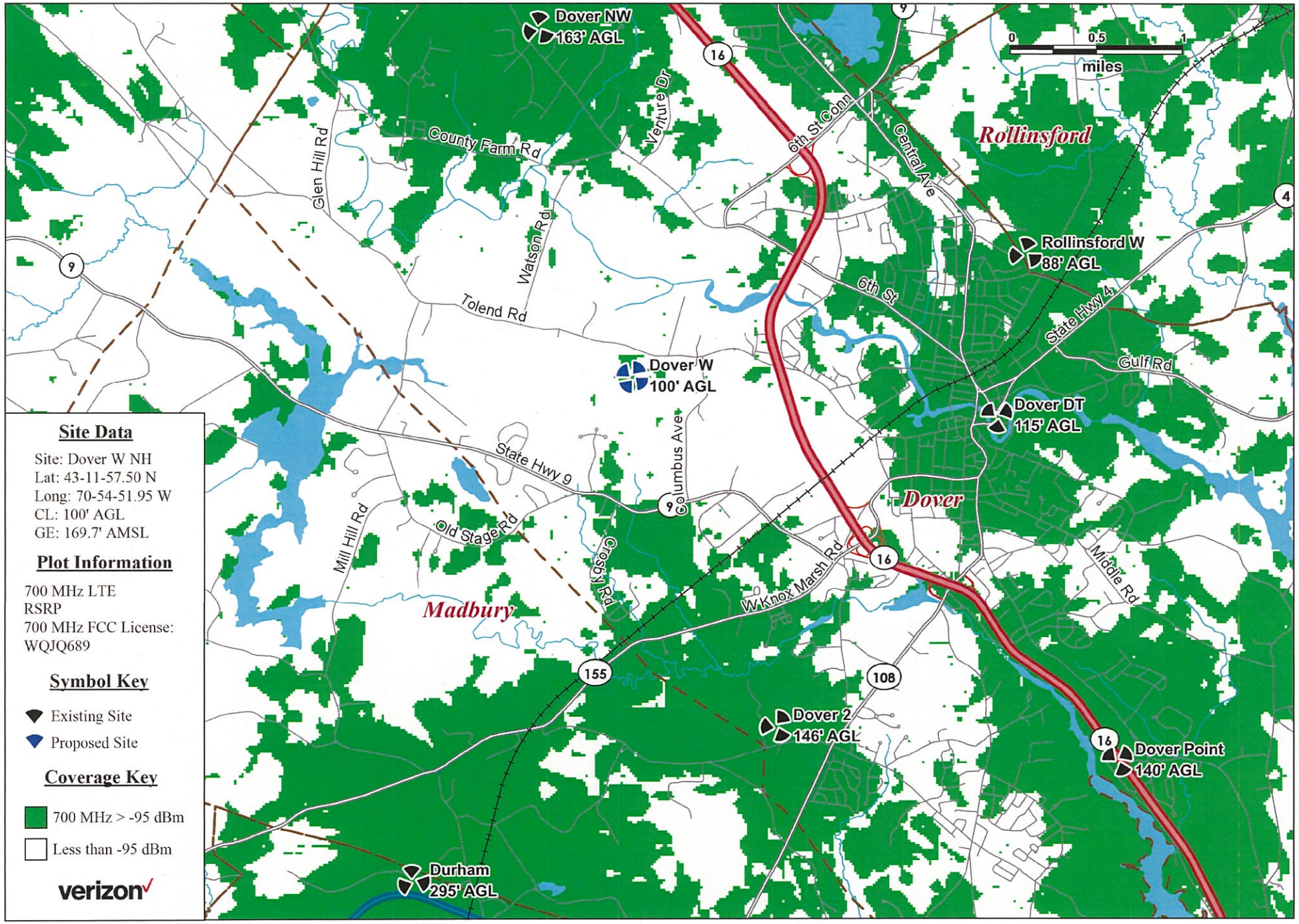
Keith Vellante

Keith Vellante
RF Engineer
C Squared Systems, LLC

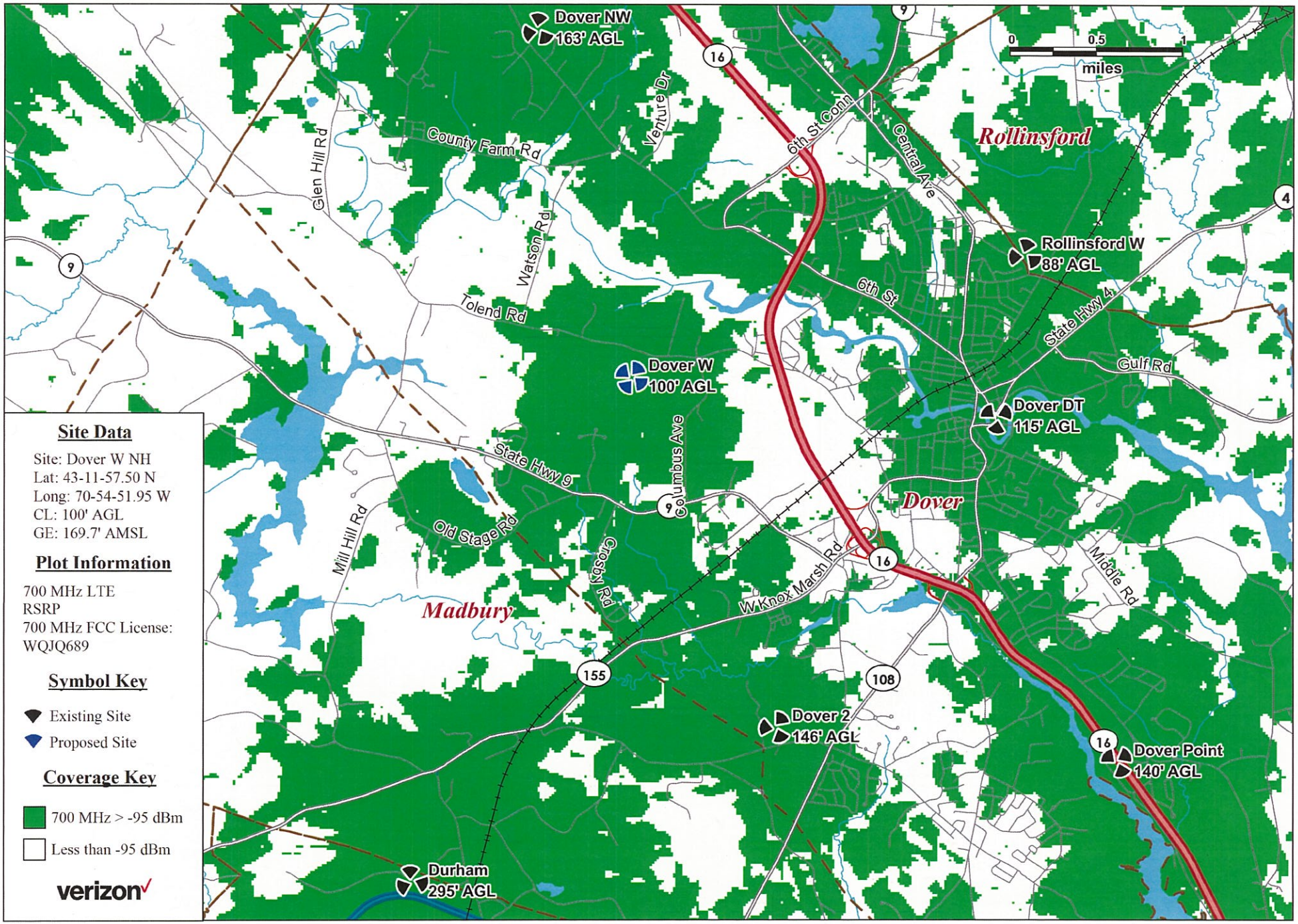
June 13, 2023
Date

11. Attachments

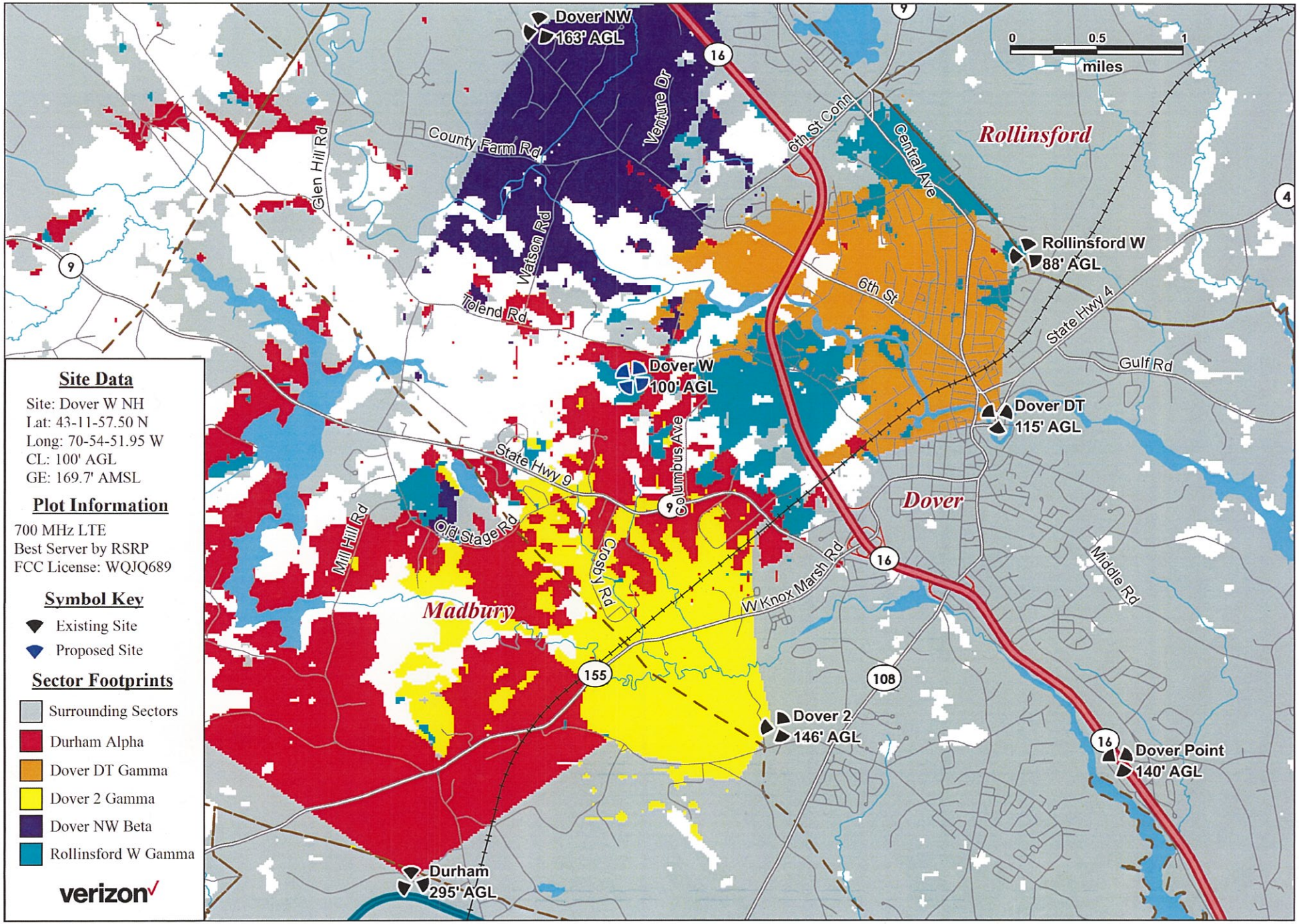
Attachment A:
Dover W NH - Existing 700 MHz LTE Coverage



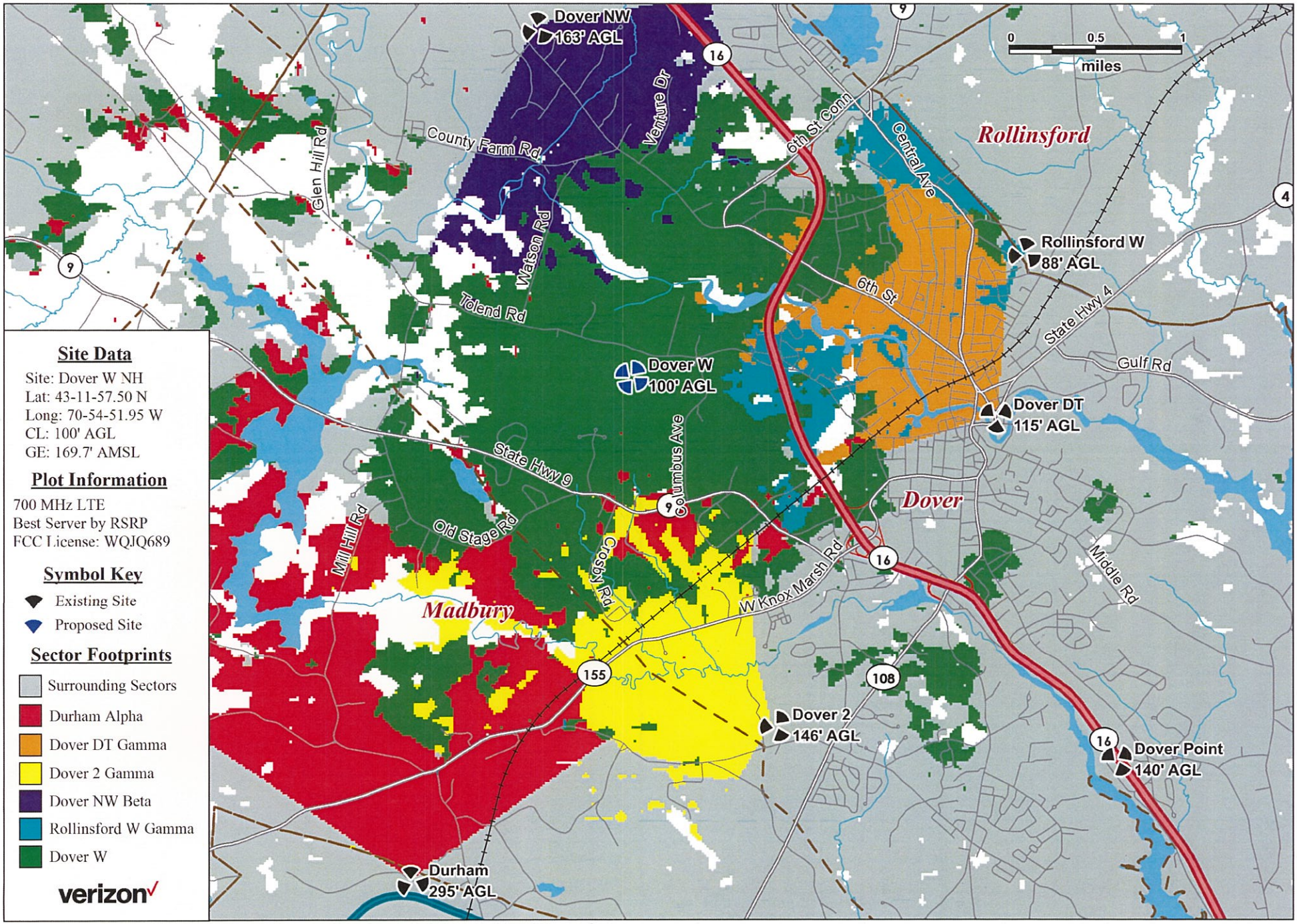
Attachment B:
Dover W NH - 700 MHz LTE Coverage with Proposed Site



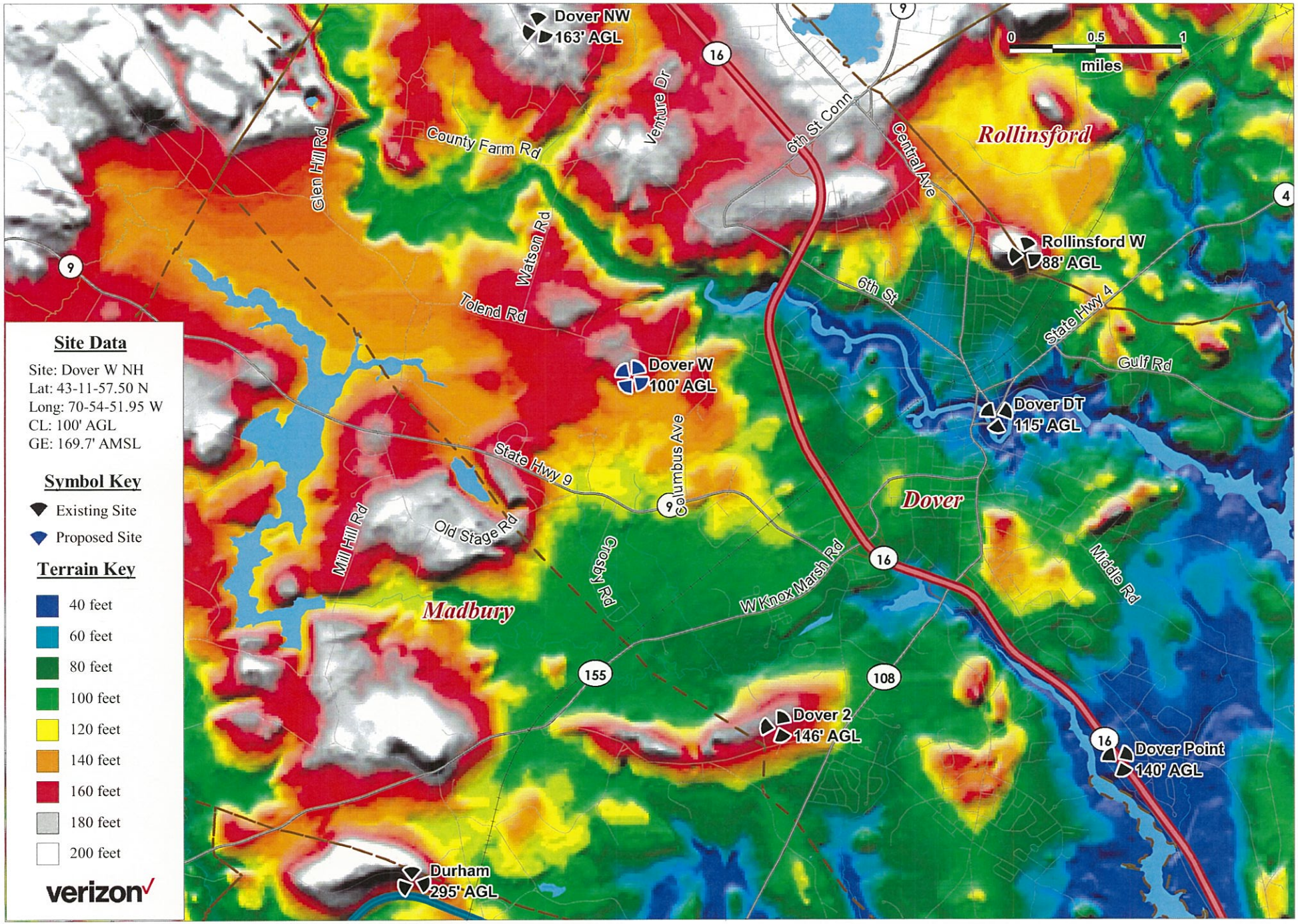
Attachment C:
Dover W NH - Existing 700 MHz LTE Sector Footprints



Attachment D:
Dover W NH - 700 MHz LTE Sector Footprints with Proposed Site



Attachment E:
Dover W NH - Area Topography Map



OWNERS OF RECORD ARE:
N/F LIONEL R. JR. & KRISTINA L. PARADIS
180 TOLEND ROAD
DOVER, NH 03820

AUTHORIZED SIGNATURE

DRAWING INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	3
C-1	ABUTTERS PLAN	A
C-2	EXISTING CONDITIONS	A
A-1	OVERALL SITE PLAN	3
A-2	COMPOUND PLAN & ELEVATION	3
P-1	DRIVEWAY PLAN & PROFILE	3
M-1	DRIVEWAY ACCESS PLAN	3
D-1 TO D-3	DETAILS	3
EC-1 TO EC-2	EROSION CONTROL PLAN & DETAILS	3

GENERAL NOTES

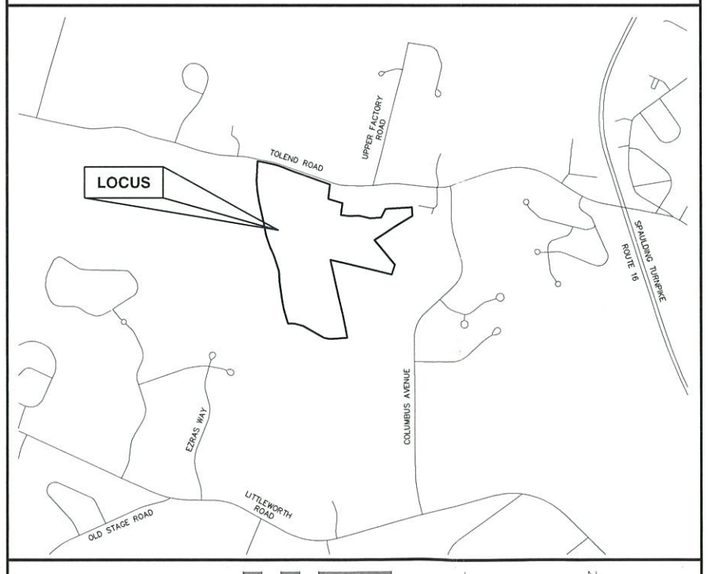
1. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER & VERIZON WIRELESS REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
2. PLANS FOR PERMITTING PURPOSES ONLY. NOT FOR CONSTRUCTION.
3. THIS PLAN SET WAS ORIGINALLY PRINTED TO ANSI D (22"x34") WITH 1" MARGINS. PRINTING TO ANSI B (11"x17") WILL RESULT IN A HALF-SCALE (1:2) SHEET SET WITH 1/2" MARGINS. CONFIRM ALL SCALED DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN.
4. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH VERIZON WIRELESS CONSTRUCTION GUIDELINES.
5. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL DIG-SAFE (888) 344-7233 72-HOURS PRIOR TO ANY EXCAVATION.
6. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   BUILDING CODE: NEW HAMPSHIRE STATE BUILDING CODE BCR 300 (2018 IBC BASED) WITH AMENDMENTS
   ELECTRICAL CODE: NEC 2020 WITH NEW HAMPSHIRE AMENDMENTS
7. AS-BUILT PLANS OF THE SUBDIVISION 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 IF A STREET IS PROPOSED FOR CITY ACCEPTANCE. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
8. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION "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.
9. 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.
10. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY AND SUNDAY 9 AM-4 PM. 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.
11. THE SITE HAS BEEN DESIGNED TO DISTURB NO MORE THAN 20,000 SF AND NO MORE THAN 4,000 SF ADDITIONAL IMPERVIOUS SURFACE.
12. MAINTENANCE OF DRIVEWAY, INCLUDING SNOW REMOVAL AND STORAGE, WILL BE MAINTAINED FOR YEAR ROUND ACCESS.

verizon

SITE NAME: DOVER_W_NH
SITE LOCATION CODE (PSLC): 721391
FUZE ID: 16917794

ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820
RAW LAND MONOPOLE

VICINITY MAP



SCOPE OF WORK

PROPOSED 104' TALL MONOPOLE (110' HIGHEST APPURTENANCE) TO BE INSTALLED WITHIN A PROPOSED 75'x75' LEASE AREA AND 48'x60' FENCED COMPOUND. ASSOCIATED GRADING, DRAINAGE, AND PLANTINGS TO BE INSTALLED AROUND THE COMPOUND AND ALONG THE PROPOSED ACCESS DRIVEWAY FROM THE EXISTING DRIVEWAY AS SHOWN IN THESE PLANS. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

VERIZON GROUND LEVEL EQUIPMENT TO INCLUDE EQUIPMENT CABINETS, WEATHER CANOPY AND GENERATOR WITH ON A CONCRETE PAD TO BE INSTALLED WITHIN THE PROPOSED FENCED COMPOUND. CABLING TO BE RUN FROM THE VERIZON EQUIPMENT AREA ALONG AN ICE BRIDGE AND WITHIN THE PROPOSED MONOPOLE TO THE ANTENNA LEVEL.

PROPOSED VERIZON TOWER TOP RF EQUIPMENT TO BE INSTALLED ON THE ON PROPOSED MONOPOLE TO INCLUDE:

- (1) 12'-6" 4-SECTOR EQUIPMENT PLATFORM WITH HANDRAIL KIT AND 2.5"ø PIPE NOMINAL DIA. ANTENNA PIPES
- (8) 6' TALL PANEL ANTENNAS MOUNTED ON DUAL MOUNTING BRACKETS
- (3) L-SUB6 PANEL ANTENNAS
- (8) RRH's MOUNTED BEHIND THE ANTENNA MOUNTING PIPES
- (1) 12-OVP LARGE JUNCTION BOX WITH SURGE
- (2) 6x12 HYBRID CABLES
- INSTALL RF SIGNAGE PER VERIZON GUIDELINES
- MAINTAIN CLEARANCES TO FALL ARREST CABLE. ADD BRACKETS AS REQUIRED.

PROJECT INFORMATION

SITE TYPE:	RAW LAND MONOPOLE
SCOPE OF WORK:	PROPOSED FENCED COMPOUND AND 104 TALL STEEL MONOPOLE WITH RF EQUIPMENT WITHIN 75'x75' LEASE AREA.
SITE NAME:	DOVER_W_NH
SITE LOCATION CODE:	721391
SITE ADDRESS:	180 TOLEND ROAD DOVER, NH 03820
ASSESSOR'S TAX ID#:	F-2-0-0
ZONING DISTRICT(S):	INNOVATIVE TECHNOLOGY (IT)
LATITUDE:	43° 11' 57.50"± N (43.1993064°± N) (SURVEY 1A)
LONGITUDE:	70° 54' 51.95"± W (70.9144305°± W) (SURVEY 1A)
(P) ELEVATION:	169.7'±
DATUM:	NAD83/NAVD88
PROPERTY OWNER:	N/F LIONEL R. JR. & KRISTINA L. PARADIS 180 TOLEND ROAD DOVER, NH 03820
APPLICANT:	CELLCO PARTNERSHIP dba VERIZON WIRELESS 900 CHELMSFORD STREET TOWER 2 FLOOR 5 LOWELL, MA 01851
SITE ENGINEER:	PROTERRA DESIGN GROUP, LLC 4 BAY ROAD BUILDING A; SUITE 200 HADLEY, MA 01035 (413) 320-4918
SURVEYOR:	NORTHEAST SURVEY CONSULTANTS 3 FERRY STREET STUDIO 1 EASTHAMPTON, MA 01027

PERMITTING REVISED

ProTerra DESIGN GROUP, LLC
4 Bay Road
Building A; Suite 200
Hadley, MA 01035
(413) 320-4918

CLIENT:

NO.	DATE	REVISIONS
A	06/13/23	ISSUED FOR REVIEW
B	09/25/23	ISSUED FOR REVIEW
0	09/29/23	ISSUED FOR PERMITTING
1	12/21/23	PERMITTING REVISED
2	03/12/24	PERMITTING REVISED
3	04/11/24	TRC COMMENTS

TITLE:
SITE NAME: DOVER_W_NH
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
verizon

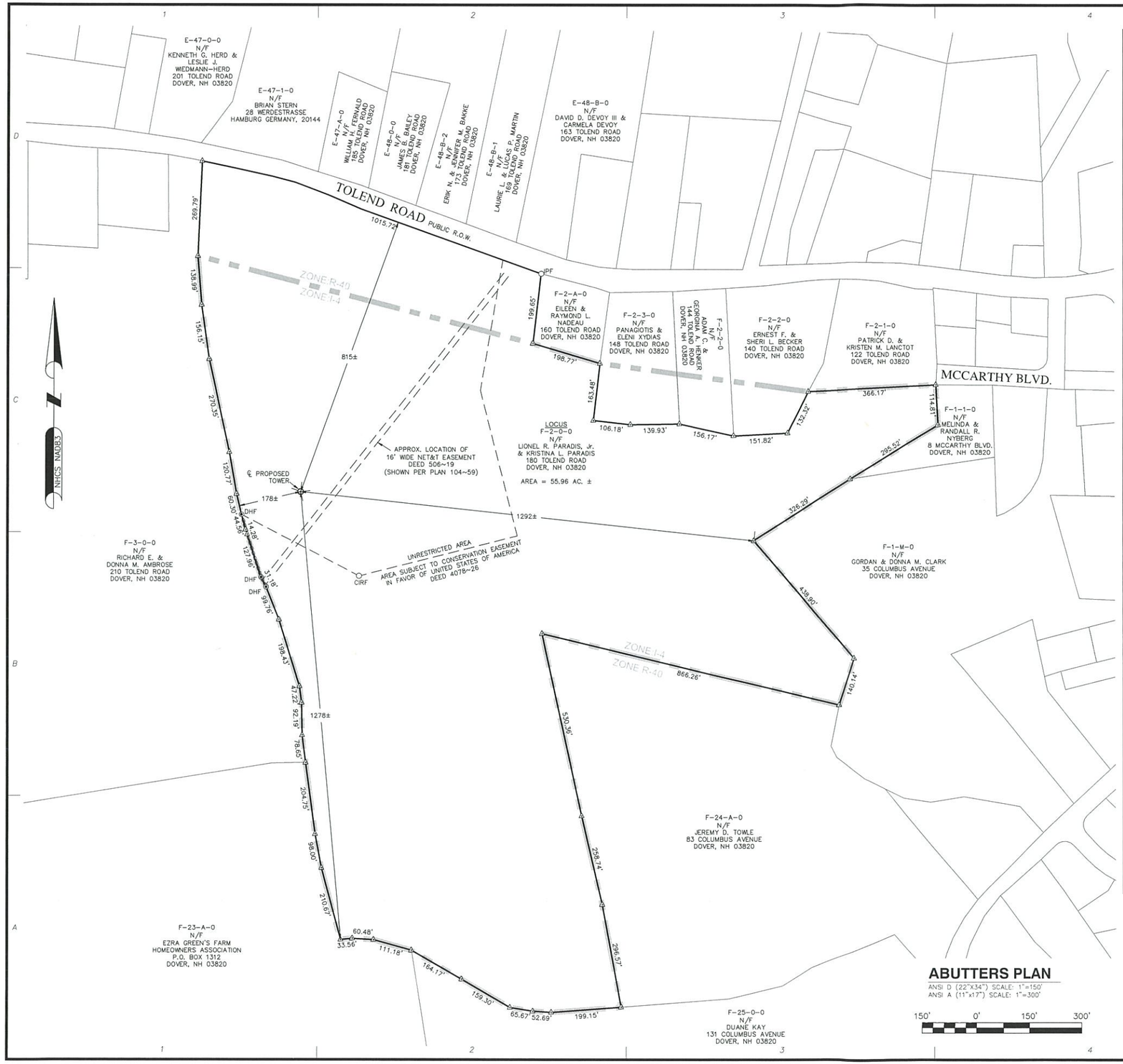
STAMP:

DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
TITLE SHEET

T-1

DOVER FILE: SITE-2023-0012



ABUTTERS PLAN

ANSI D (22"X34") SCALE: 1"=150'
ANSI A (11"x17") SCALE: 1"=300'

150' 0' 150' 300'

FAA 1-A CERTIFICATION

I HEREBY CERTIFY THAT THE LATITUDE, LONGITUDE, AND ELEVATION PRESENTED HEREON MEET THE REQUIREMENTS OF THE FAA WITH THE FOLLOWING ACCURACIES:

THREE (3) FEET VERTICALLY
TWENTY (20') FEET HORIZONTALLY

JAMES M. LAVELLE NH LLS # 489 — 12/21/2023 DATE

SURVEY NOTES

1. SITE DETAIL SHOWN ON THIS SURVEY IS BASED ON FIELD DATA COLLECTED ON AUGUST 21, 2018. BOUNDARY INFORMATION IS COMPILED FROM RECORD DOCUMENTS AND IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD BOUNDARY SURVEY, AND IS SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
2. THE PURPOSE OF THIS SURVEY IS TO SUPPORT THE DESIGN AND CONSTRUCTION OF A TELECOMMUNICATION FACILITY. USE OF THIS SURVEY BY ANYONE OTHER THAN VWI TOWERS, LLC, AND USE OF THIS SURVEY FOR ANY PURPOSE NOT RELATED TO THE DESIGN OF THE INTENDED FACILITY IS STRICTLY PROHIBITED.
3. PROPERTY LINES AND BOUNDARY DIMENSIONS SHOWN ON THIS SURVEY ARE BASED ON A COMPILATION OF RECORDED DEEDS AND ARE NOT INTENDED TO REPRESENT DEFINITIVE BOUNDARY LINES OR BE USED FOR THE PURPOSES OF CONVEYANCE. PROPERTY RELATED INFORMATION HAS NOT BEEN CONFIRMED BY FIELD SURVEY OBSERVATIONS AND NO ASSESSMENT OF LAND OCCUPATION HAS BEEN CONDUCTED IN THE PREPARATION OF THIS SURVEY. A PROPERTY LINE RETRACEMENT SURVEY HAS NOT BEEN CONDUCTED.
4. THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP'S, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.
5. PRIMARY GEODETIC SURVEY CONTROL WAS ESTABLISHED FROM AN ON THE GROUND SURVEY USING THE GLOBAL POSITIONING SYSTEM (GPS) ON AUGUST 21, 2018. THE HORIZONTAL REFERENCED DATUM IS THE NAD 83 BASED ON THE GRS 80 REFERENCE ELLIPSOID. THE GRID COORDINATES ARE BASED ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM OF 1983 CORS96. ELEVATIONS SHOWN ARE ASSUMED AND ARE APPROXIMATED TO THE NAVD 88 VERTICAL DATUM. VERTICAL AND HORIZONTAL INFORMATION SHOWN MEETS THE STANDARD CRITERIA FOR AN FAA 1A CERTIFICATION (20'± HORIZONTAL AND 3'± VERTICAL).
6. IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
7. THE LOCUS PARCEL IS IDENTIFIED AS MAP F LOT 2-0-0 IN THE TOWN OF DOVER'S TAX ASSESSOR'S DATABASE.
8. THE PROJECT AREA IS LOCATED IN FLOOD ZONE "X" (NO SHADING) (AREAS OF MINIMAL FLOOD HAZARD) ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 33017 C0310E, DATED SEPTEMBER 30, 2015.
9. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
10. THE SUBJECT PROPERTY IS LOCATED IN THE TOWN OF DOVER COMMERCIAL I-4 & R-40 ZONING DISTRICT.
11. WETLANDS WERE INVESTIGATED BY THOMAS E. LIDDY, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER #243, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, ON AUGUST 9, 2018, AND FOUND NO JURISDICTIONAL WETLANDS LOCATED WITHIN APPROXIMATELY 100 FEET OF THE PROPOSED WORK.

STATE OF NEW HAMPSHIRE — THOMAS E. LIDDY — No. 243 — CERTIFIED WETLAND SCIENTIST

PROPERTY OWNER:	LIONEL R. PARADIS, Jr. & KRISTINA L. PARADIS 180 TOLEND ROAD DOVER, NH 03820
LOCUS DEED REFERENCE:	BOOK 1868 PAGE 382
PLAN REFERENCES:	PLAN 104~59

LEGEND

N/F	– NOW OR FORMERLY
△	– CALCULATED POINT
○	– CAPPED IRON ROD FOUND
⌖	– PK NAIL FOUND
———	– LOCUS PROPERTY LINE
———	– ABUTTERS PROPERTY LINE
— — —	– EXISTING EASEMENT LINE
———	– ZONING LINE
○○○○○	– STONE WALL

ProTerra DESIGN GROUP, LLC
4 Bay Road, Bldg A, Suite 200
Hadley, MA 01035
Ph: (413)320-4918

CONSULTANTS:
NORTHEAST SURVEY CONSULTANTS
3 Ferry Street
Studio 1 East
Easthampton, MA 01027
(413) 203-5144
northeastsurvey.com

NO.	DATE	REVISIONS
A	12/21/23	ISSUED FOR REVIEW

TITLE:
SITE NAME: DOVER WEST NH
SITE NUMBER: 722391
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:
verizon
118 FLANDERS ROAD
THIRD FLOOR
WESTBOROUGH, MA 01581

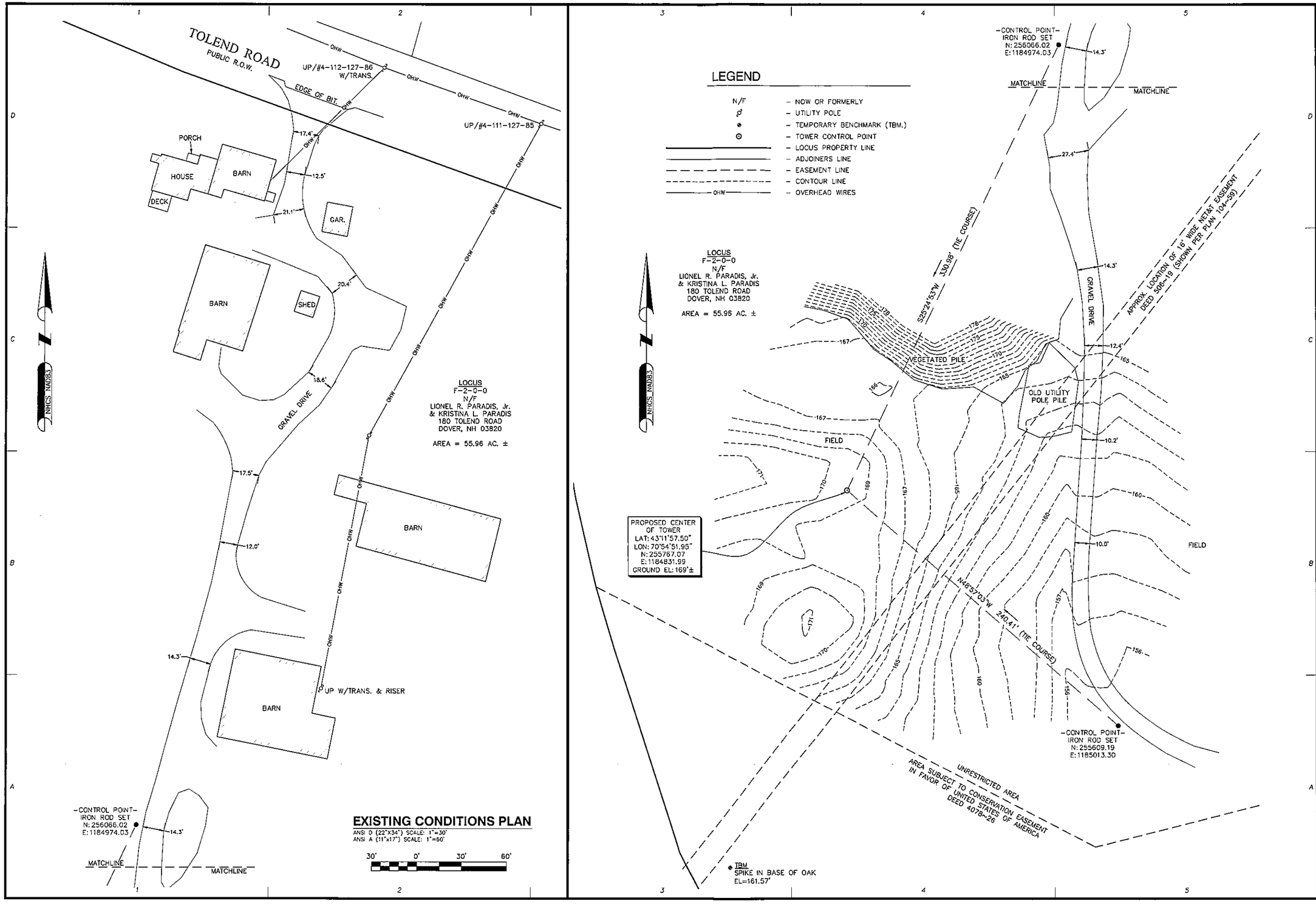
STATE OF NEW HAMPSHIRE — No. 489 — JAMES M. LAVELLE — LICENSED LAND SURVEYOR

DATE: 12/21/2023
DRAWN: JDG
CHECK: BCF
SCALE: 1"=150'
JOB NO.: 18-225.1

SHEET TITLE:
ABUTTERS PLAN

C-1

DOVER FILE: SITE-2023-0012



EXISTING CONDITIONS PLAN

ANSI D (22"X34") SCALE: 1"=30'
ANSI A (11"x17") SCALE: 1"=60'

30' 0' 30' 60'

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3 Ferry Street
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Easthampton, MA 01027
(413) 203-5144
northeastsurvey.com

NO.	DATE	REVISION'S
A	12/21/23	ISSUED FOR REVIEW

TITLE:
SITE NAME: DOVER WEST NH
SITE NUMBER: 721991
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:
verizon
118 FLANDERS ROAD
THIRD FLOOR
WESTBOROUGH, MA 01581

STATE OF NEW HAMPSHIRE
No. 489
JAMES M. LAVELLE
LICENSED LAND SURVEYOR

DATE:	12/21/2023
DRAWN:	JDG
CHECK:	BCF
SCALE:	1"=30'
JOB NO.:	18-225.1

SHEET TITLE:
EXISTING CONDITIONS PLAN

C-2

DOVER FILE: SITE-2023-0012

OVERALL SITE PLAN

SCALE: 1"=150' (22x34)
1"=300' (11x17)

1 / A-1

150 75 0 150 300

REFERENCES

PROPERTY LINE, TOPOGRAPHY, AND EXISTING FEATURES – SEE SHEETS C-1 TO C-2 PREPARED BY NORTHEAST SURVEY CONSULTANTS.

ZONING MAP – AVAILABLE THROUGH DOVER.NH.GOV WEBSITE. MAP ENTITLED "CITY OF DOVER, NEW HAMPSHIRE ZONING MAP" ADOPTED SEPTEMBER 11, 2019, AND CITY OF DOVER NH ONLINE GIS "HTTPS://DOVERNH.MAPGEO.IO/" ZONING THEME, LAST VIEWED 01/20/2023.

THE FOLLOWING DATALAYERS PREPARED BY NH GRANIT AT GRANIT.UNH.EDU GIS PORTAL.
- STATEWIDE AERIAL PHOTOGRAPHY (2010/2011)
- NATIONAL WETLANDS INVENTORY (LAST UPDATED SEPTEMBER 30, 2022)

FEMA NATIONAL FLOOD HAZARD LAYER
PROJECT AREA IS WITHIN ZONE X: "AREA OF MINIMAL FLOOD HAZARD. (NO SHADING)" VERIFIED BY FEMA FLOOD INSURANCE RATE MAP FOR THE CITY OF DOVER, NEW HAMPSHIRE, STRAFFORD COUNTY, COMMUNITY PANEL NUMBER 33017C0310E DATED SEPTEMBER 30, 2015.

GENERAL NOTES

1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND POSITIONS OF ALL PROJECT OWNER'S EQUIPMENT ARE SHOWN IN ILLUSTRATIVE FASHION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.
2. THE PROJECT OWNER'S PCS FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. THE DESIGN OF THE TOWER, FOUNDATION AND ANTENNA MOUNTING HARDWARE WILL MEET THE ANSI/EIA/TIA-222-H STANDARDS FOR STRUCTURAL STEEL ANTENNA SUPPORTING STRUCTURES AND STATE BUILDING CODE REQUIREMENTS. DETAILED CONSTRUCTION DRAWINGS AND STRUCTURAL CALCULATIONS WILL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH A BUILDING PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE LOCAL BUILDING CODE ENFORCEMENT OFFICIAL.
4. ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY TOWER OWNER'S AND CARRIER'S TECHNICIANS WILL BE PERFORMED. THE ESTIMATED VEHICULAR TRAFFIC GENERATED BY THESE VISITS IS PREDICTED TO BE LESS THAN THE TYPICAL TRAFFIC GENERATED BY A SINGLE-FAMILY DWELLING.

ZONING SUMMARY

ZONING DISTRICT(S): INNOVATIVE TECHNOLOGY (IT) DISTRICT

ASSESSORS ID(S): F-2-0-0

(P) USE: WIRELESS COMMUNICATIONS FACILITY [1]

DIMENSION	PROVIDED	CONSTRAINT
LOT – AREA	55.96± ACRES	2 ACRES
LOT – FRONTAGE	1,015'±	200' MIN.
LOT – COVERAGE	<2%	33% MAX.
(P) COMPOUND – FRONT YARD	777'±	50' MIN.
(P) COMPOUND – REAR YARD	1,235'±	50' MIN. (PRINCIPAL USE) 10' MIN. (ACCESSORY USE)
(P) COMPOUND – SIDE YARD	135'±	50' MIN. (PRINCIPAL USE) 10' MIN. (ACCESSORY USE)
(P) COMPOUND – BUILDING HEIGHT	15'±	55' MAX. (PRINCIPAL USE) 55' MAX. (ACCESSORY USE)
(P) TOWER – HEIGHT (HIGHEST APPURTENANCE)	104'± (110'±)	180' MAX.
(P) TOWER (PROPERTY LINE/BUILDING SETBACK)	175'± (EDGE OF TOWER)	100% HEIGHT =110' MIN.

SPECIAL CONSIDERATIONS MAY BE REQUIRED FOR THE FOLLOWING:

1 – CITY OF DOVER, NH ZONING BYLAW § 170-22.C(1) LOCATION: THE LOCUS PARCEL IS NOT LISTED AS A PERMITTED SITE FOR TELECOMMUNICATIONS FACILITY.

PER ZONING VARIANCE CASE NO. 2023-0035, THE CITY OF DOVER ZONING BOARD OF ADJUSTMENT, ON JULY 20, 2023, APPROVED THE REQUEST FOR VARIANCE OF SECTION § 170-22.C(1) OF THE ZONING ORDINANCE WITH CONDITION THE APPLICANT SHALL GO BEFORE THE PLANNING BOARD FOR SITE PLAN REVIEW. (SEE NOTICE OF DECISION DATED JULY 25, 2023)

VERIZON WIRELESS, THROUGH THEIR COUNCIL NIXON PEABODY, HAS INFORMED PROTERRA DESIGN GROUP LLC THAT THEY ARE UNAWARE OF ANY FEDERAL PERMITS REQUIRED OTHER THAN FCC AND NEPA SCREENING.

ProTerra DESIGN GROUP, LLC
4 Bay Road
Building A; Suite 200
Hadley, MA 01035
(413) 320-4918

CLIENT:

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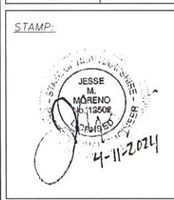
2	03/12/24	PERMITTING REVISED
3	04/11/24	TRC COMMENTS

TITLE:
SITE NAME: DOVER_W_NH
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

STAMP:

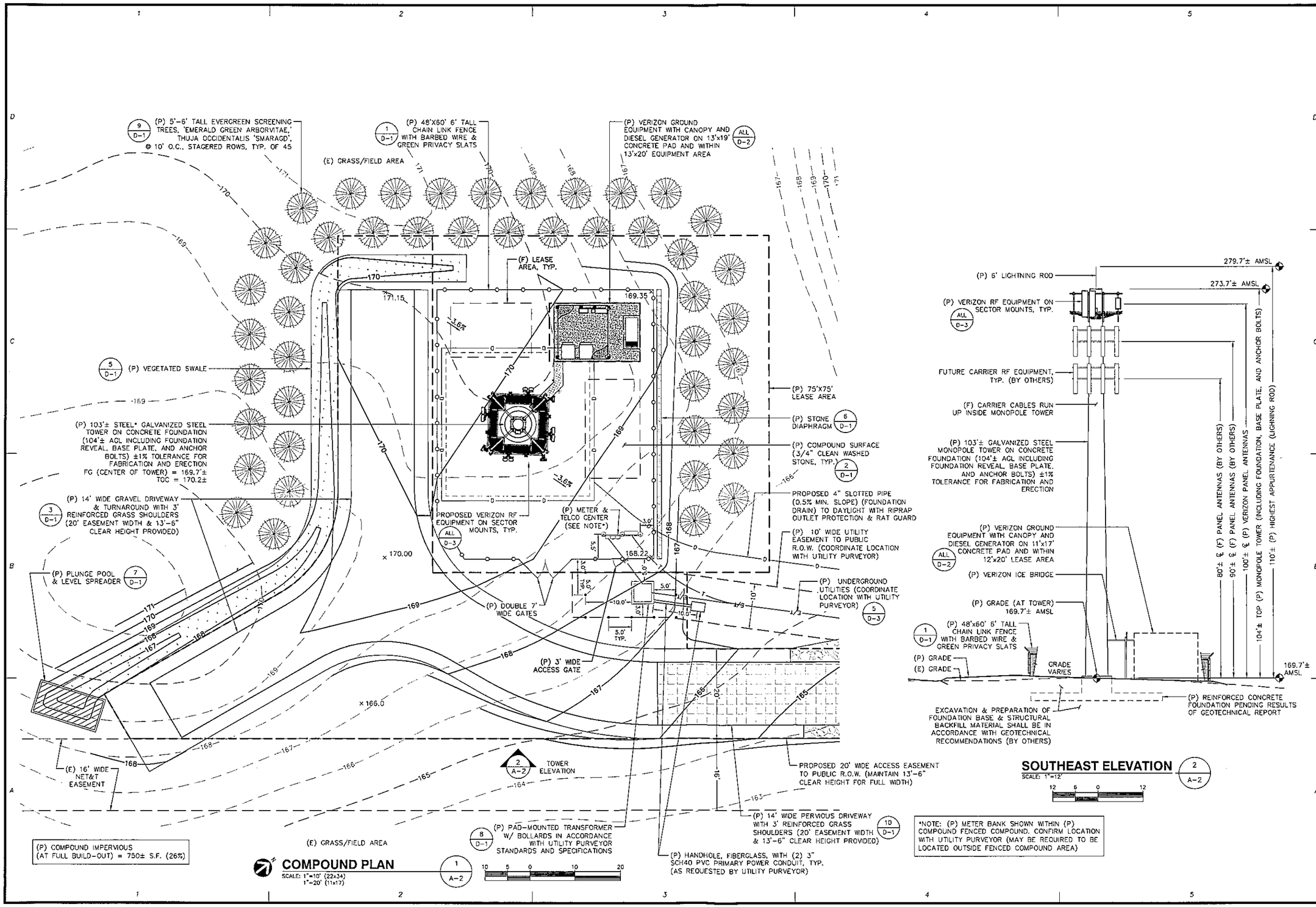


DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
OVERALL SITE PLAN

A-1

DOVER FILE: SITE-2023-0012



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APPLICANT:
CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

verizon

STAMP:

JESSE M. MORENO 012506 REGISTERED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4-11-2024

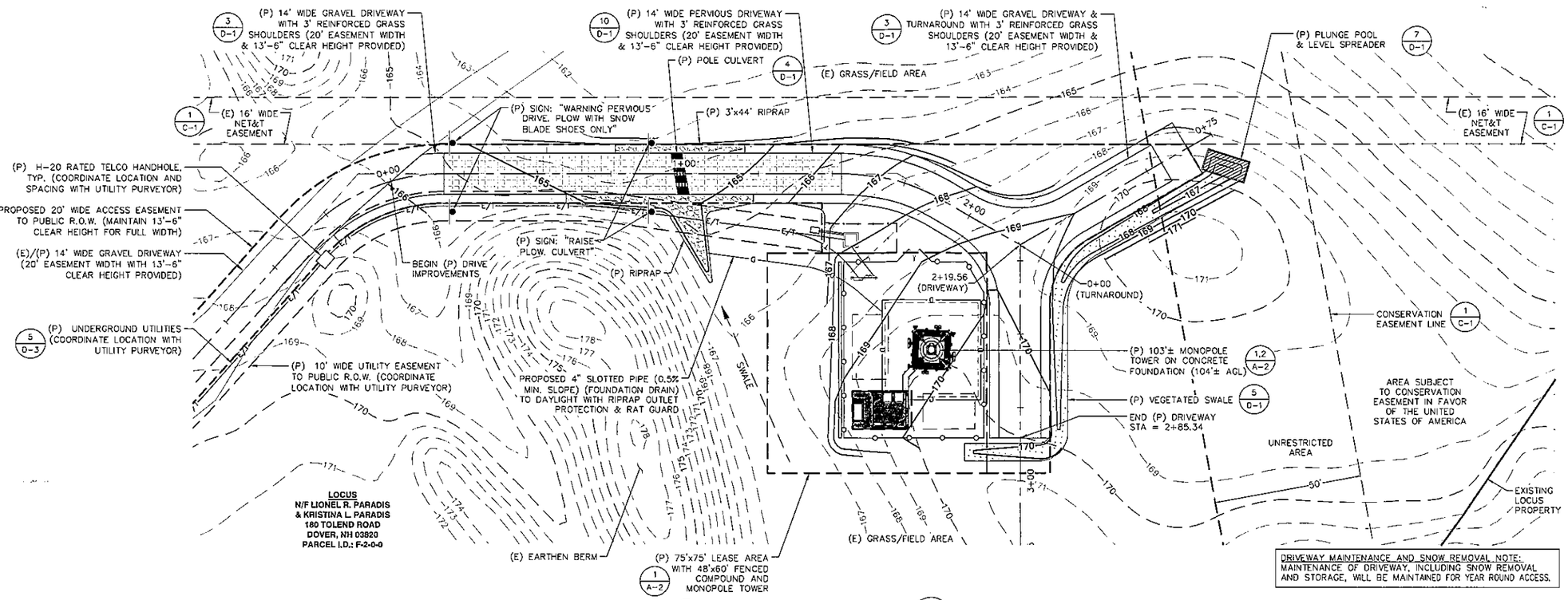
DATE:	04/11/2024
DRAWN:	STZ/JEB
CHECK:	JMM/TEJ
SCALE:	SEE PLAN
JOB NO.:	13-030

SHEET TITLE:

COMPOUND SITE PLAN

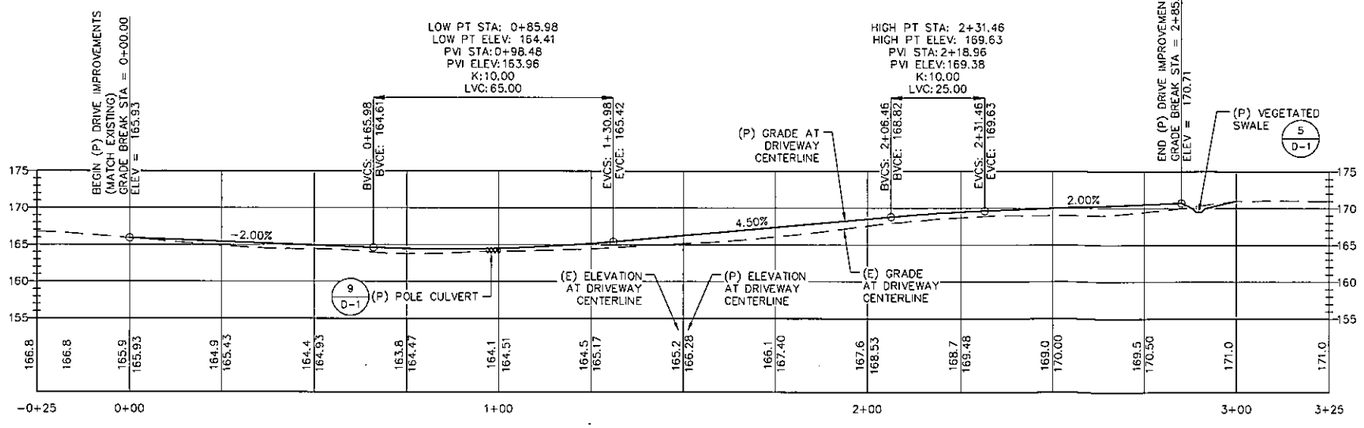
A-2

DOVER FILE: SITE-2023-0012



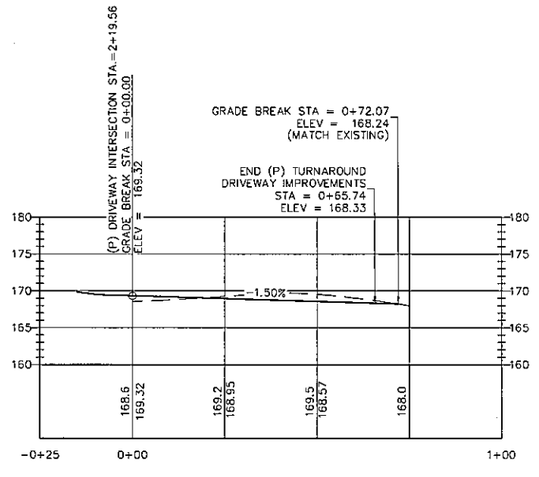
DRIVEWAY PLAN

SCALE: 1"=20' (22x34)
1"=40' (11x17)



DRIVEWAY PROFILE

SCALE (22x34): 1"=20' HORIZONTAL, 1"=10' VERTICAL
SCALE (11x17): 1"=40' HORIZONTAL, 1"=20' VERTICAL



TURNAROUND DRIVEWAY PROFILE

SCALE (22x34): 1"=20' HORIZONTAL, 1"=10' VERTICAL
SCALE (11x17): 1"=40' HORIZONTAL, 1"=20' VERTICAL

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CLIENT:

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TOWER 2 FLOOR 6
LOWELL, MA 01851

verizon

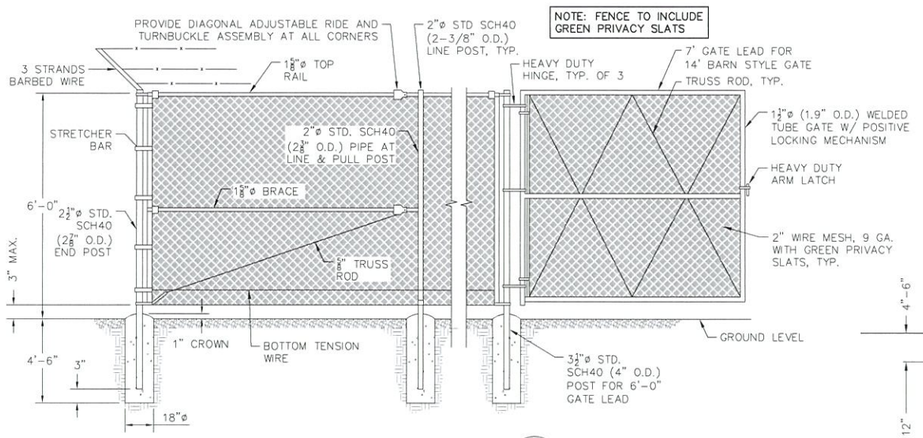
STAMP:
JESSE M. MORENO 16,113 REGISTERED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4-11-2024

DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
DRIVEWAY PLAN & PROFILE

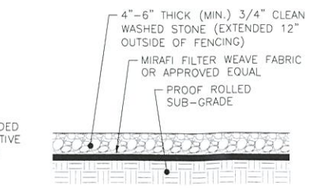
P-1

DOVER FILE: SITE-2023-0012



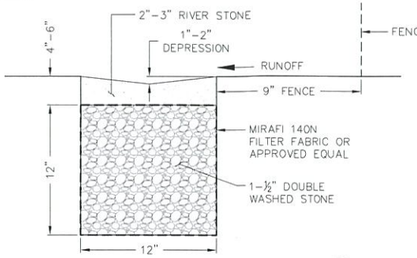
CHAIN LINK FENCE

SCALE: NONE — 1 / D-1



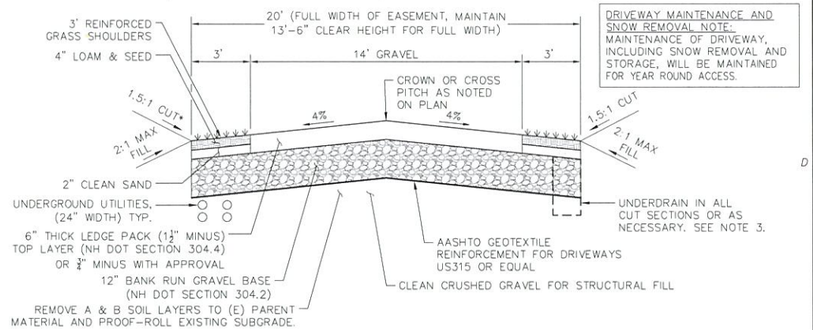
COMPOUND SURFACE

SCALE: NONE — 2 / D-1



STONE DIAPHRAGM

SCALE: NONE — 6 / D-1

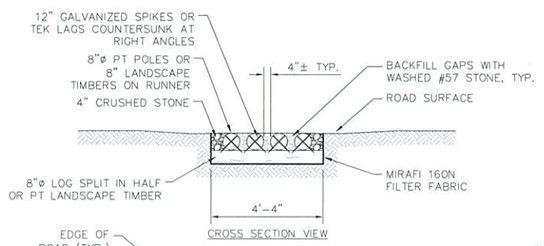


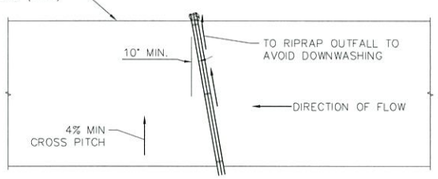
DRIVEWAY MAINTENANCE AND SNOW REMOVAL NOTE:
MAINTENANCE OF DRIVEWAY, INCLUDING SNOW REMOVAL AND STORAGE, WILL BE MAINTAINED FOR YEAR ROUND ACCESS.

NOTES:
1. ALL GRANULAR MATERIALS SHALL BE COMPACTED TO 95±% MAXIMUM DRY DENSITY BY STD. PROCTOR METHOD
2. ALL CUT AND FILL SLOPES TO BE COVERED WITH JUTE MESH EROSION CONTROL BLANKETS AND/OR HYDROSEEDED WITH NEW ENGLAND ROADSIDE MATRIX MIX AT 35LBS PER ACRE OR EQUAL.
3. THE REQUIREMENT FOR INSTALLATION OF SUBDRAINS SHALL BE AT ALL CUT SECTIONS OR AS DETERMINED BY THE ENGINEER-OF-RECORD BASED ON FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. SUBDRAINS SHALL BE OUTLETTED TO DAYLIGHT AS APPROVED BY THE ENGINEER-OF-RECORD.
4. ALL MATERIALS TO CONFORM TO STATE AND/OR MUNICIPAL STANDARD AS REQUIRED.

(P) STANDARD GRAVEL DRIVEWAY

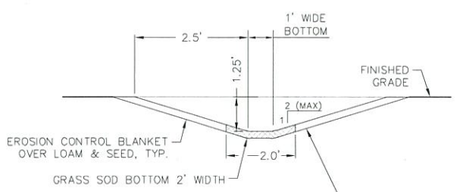
SCALE: NONE — 3 / D-1





POLE CULVERT

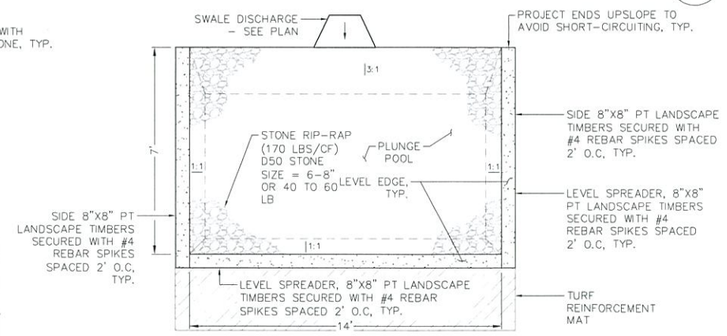
SCALE: NONE — 4 / D-1



EROSION CONTROL BLANKET TO BE USED ON 2:1 SLOPES IN VEGETATED SWALES.

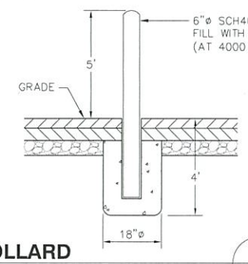
VEGETATED SWALE

SCALE: NONE — 5 / D-1



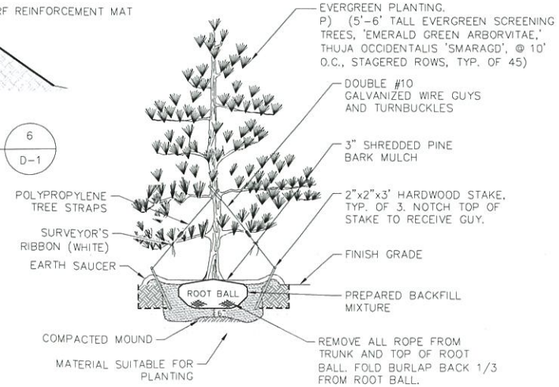
PLUNGE POOL WITH LEVEL SPREADER

SCALE: NONE — 6 / D-1



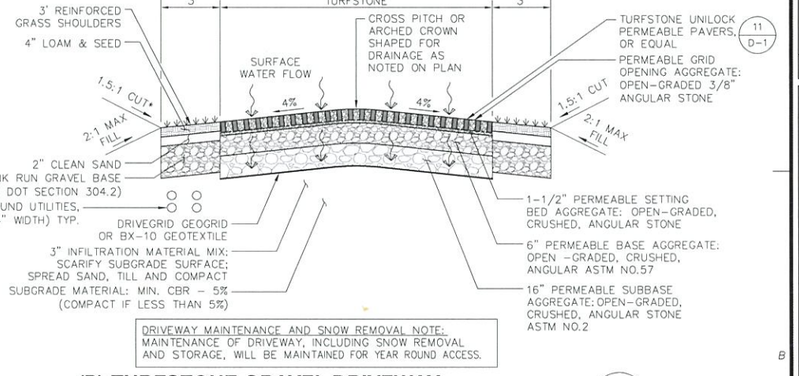
BOLLARD

SCALE: NONE — 8 / D-1



PLANTING DETAIL

SCALE: NONE — 9 / D-1



DRIVEWAY MAINTENANCE AND SNOW REMOVAL NOTE:
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(P) TURFSTONE GRAVEL DRIVEWAY

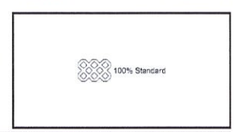
SCALE: NONE — 10 / D-1

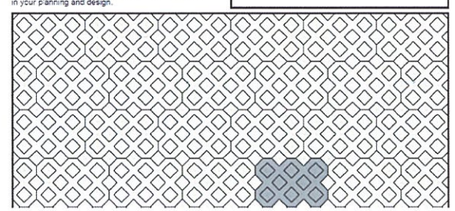
UNILOCK
Architectural Products
www.unilock.com 1-800-UNILOCK

Notes:
AutoCAD® hatch pattern files can be downloaded from www.unilock.com for use in architectural drawings.

Some patterns may not necessarily reflect the percentages of stone sizes within a particular bundle configuration. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Turfstone™ Pattern A





(P) TURFSTONE PATTERN 'A'

SCALE: NONE — 11 / D-1

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(413) 320-4918

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DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
verizon

STAMP:

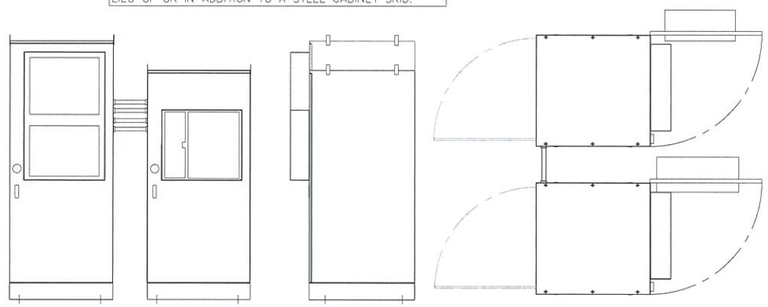
DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
DETAILS

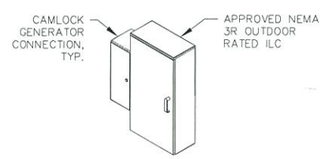
D-1

DOVER FILE: SITE-2023-0012

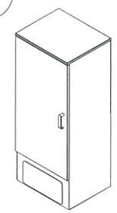
VERIFY WITH CONSTRUCTION MANAGER PRIOR TO INSTALLATION OF CABINETS IF OPTIONAL CABINET PLINTH BASES AND TOPHATS HAVE BEEN ORDERED FOR USE IN LIEU OF OR IN ADDITION TO A STEEL CABINET SKID.



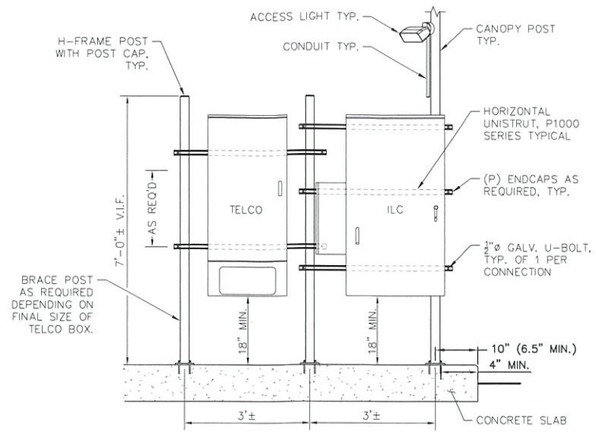
EQUIPMENT & BATTERY CABINET DETAIL (1 / D-2)
SCALE: NONE



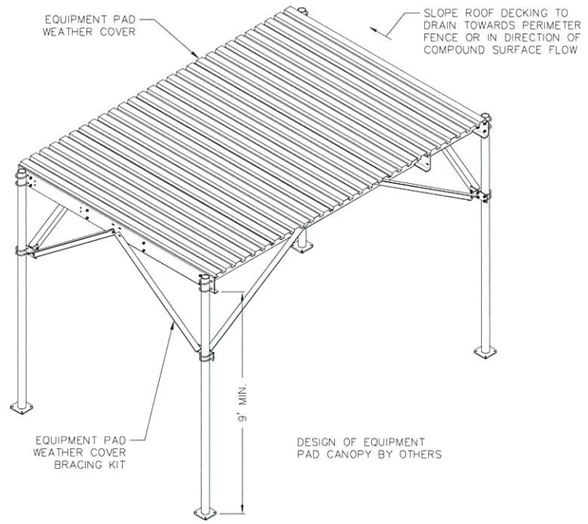
INTEGRATED LOAD CENTER (ILC) CABINET (2 / D-2)
SCALE: NONE



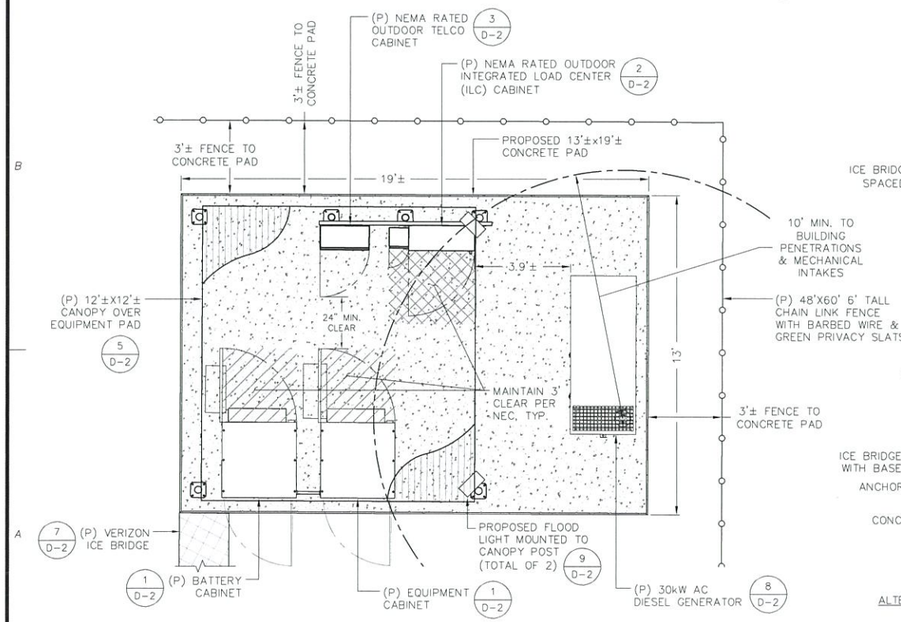
TELCO CABINET (3 / D-2)
SCALE: NONE



UTILITY CABINET MOUNTING DETAIL (4 / D-2)
SCALE: NONE

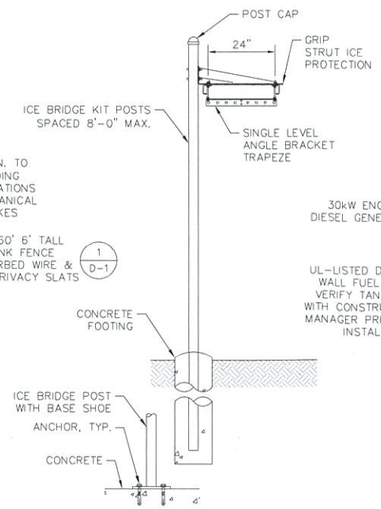


EQUIPMENT PAD WEATHER COVER DETAIL (5 / D-2)
SCALE: NONE

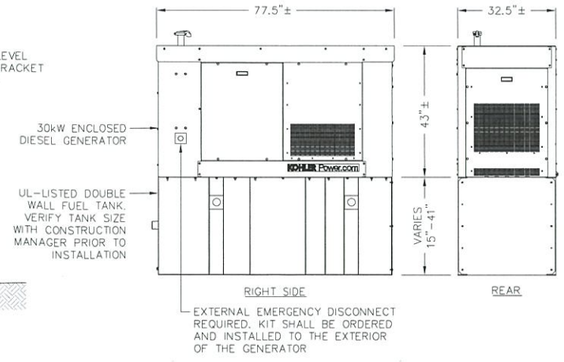


EQUIPMENT PAD PLAN (6 / D-2)
SCALE: 1"=3' (22x34)
1"=6' (11x17)

3 1.5 0 3 6



ICE BRIDGE (7 / D-2)
SCALE: NONE



30kW AC GENERATOR WITH DIESEL BASE TANK (8 / D-2)
SCALE: NONE

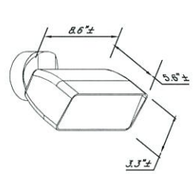
EXTERIOR LIGHTING IS INTENDED FOR TECHNICIAN WORKING AT NIGHT OR IN LOW LIGHT CONDITIONS, OPERATED BY TIMER SWITCH, TYP.

INTERMATIC FF2H

TIME CYCLE: 2 HOURS
SWITCH: SPST
HOLD: NO

OR APPROVED EQUIVALENT
20 AMP, 125 VAC

TIMER SWITCH DETAIL



RAB LIGHTING – FFLED18N
18W
BRONZE

MOUNT PER MANUFACTURER'S SPECIFICATION
125 VAC

LED FLOOD LIGHT DETAIL

FLOOD LIGHT & SWITCH DETAIL (9 / D-2)
SCALE: NONE

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DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
verizon

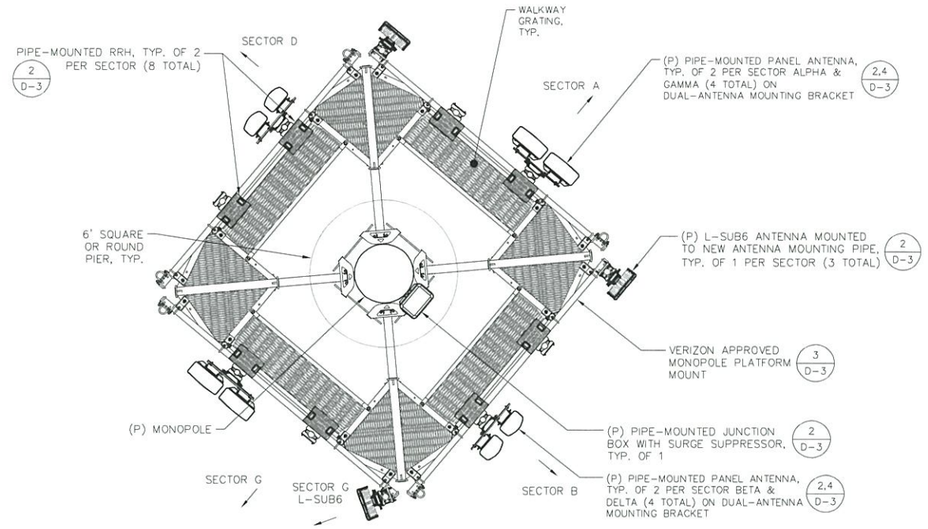
STAMP:

DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
DETAILS

D-2

DOVER FILE: SITE-2023-0012

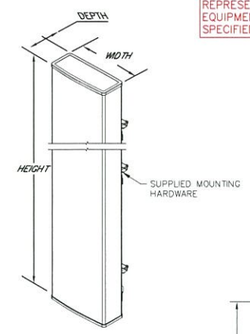


FINAL CONFIGURATION TO CONFORM TO LATEST RFDS

ANTENNA PLAN
SCALE: NONE

1 D-3

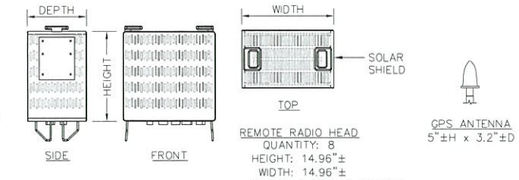
NOTE: ALL EQUIPMENT SIZE IS APPROXIMATE & REPRESENTATIVE OF PROPOSED VERIZON EQUIPMENT. FINAL EQUIPMENT TO BE AS SPECIFIED BY VERIZON WIRELESS RF ENGINEERS



PANEL ANTENNA (ALPHA & GAMMA)
QUANTITY: 4
HEIGHT: 72.0"±
WIDTH: 18.0"±
DEPTH: 7.0"±

PANEL ANTENNA (BETA & DELTA)
QUANTITY: 4
HEIGHT: 72.0"±
WIDTH: 11.9"±
DEPTH: 7.1"±

L-SUB6
QUANTITY: 3
HEIGHT: 28.9"±
WIDTH: 15.8"±
DEPTH: 5.6"±



REMOTE RADIO HEAD
QUANTITY: 8
HEIGHT: 14.96"±
WIDTH: 14.96"±
DEPTH: 9.05"± & 10.04"±

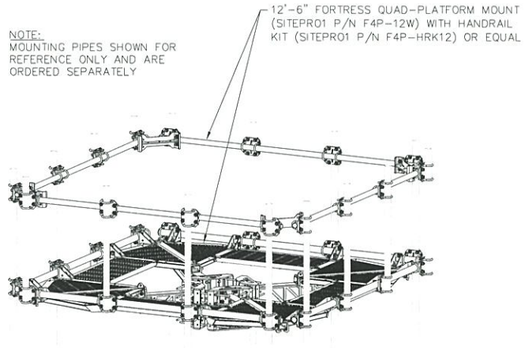
GPS ANTENNA
5"±H x 3.2"±D

JUNCTION BOX WITH SURGE SUPPRESSOR
QUANTITY: 1
HEIGHT: 20"±
WIDTH: 16"±
DEPTH: 12"±

RF EQUIPMENT
SCALE: NONE

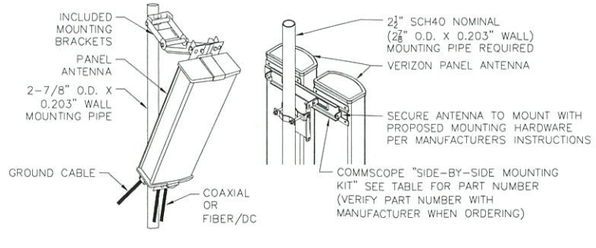
2 D-3

NOTE:
MOUNTING PIPES SHOWN FOR REFERENCE ONLY AND ARE ORDERED SEPARATELY



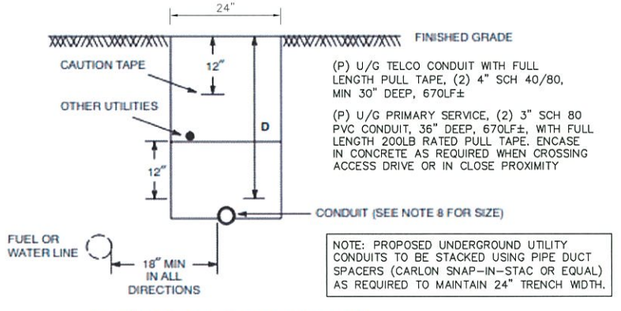
PLATFORM MOUNT DETAIL
SCALE: NONE

3 D-3



TYPICAL PANEL ANTENNA DETAIL
SCALE: NONE

4 D-3



(P) U/G TELCO CONDUIT WITH FULL LENGTH PULL TAPE, (2) 4" SCH 40/80, MIN 30" DEEP, 670LF±

(P) U/G PRIMARY SERVICE, (2) 3" SCH 80 PVC CONDUIT, 36" DEEP, 670LF±, WITH FULL LENGTH 200LB RATED PULL TAPE. ENCASE IN CONCRETE AS REQUIRED WHEN CROSSING ACCESS DRIVE OR IN CLOSE PROXIMITY

NOTE: PROPOSED UNDERGROUND UTILITY CONDUITS TO BE STACKED USING PIPE DUCT SPACERS (CARLON SNAP-IN-STAC OR EQUAL) AS REQUIRED TO MAINTAIN 24" TRENCH WIDTH.

D = 36 inches for primary voltage cable
30 inches for secondary cables

PRIMARY/SECONDARY CABLE INSTALLATION DETAIL FROM NORTHEAST UTILITIES (EVERSOURCE) CONSTRUCTION STANDARD, DTR 50.102. REFER TO NOTES 1-9 ON ORIGINAL DETAIL.

PRIMARY/ SECONDARY CABLE INSTALLATION
SCALE: NONE

5 D-3

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DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

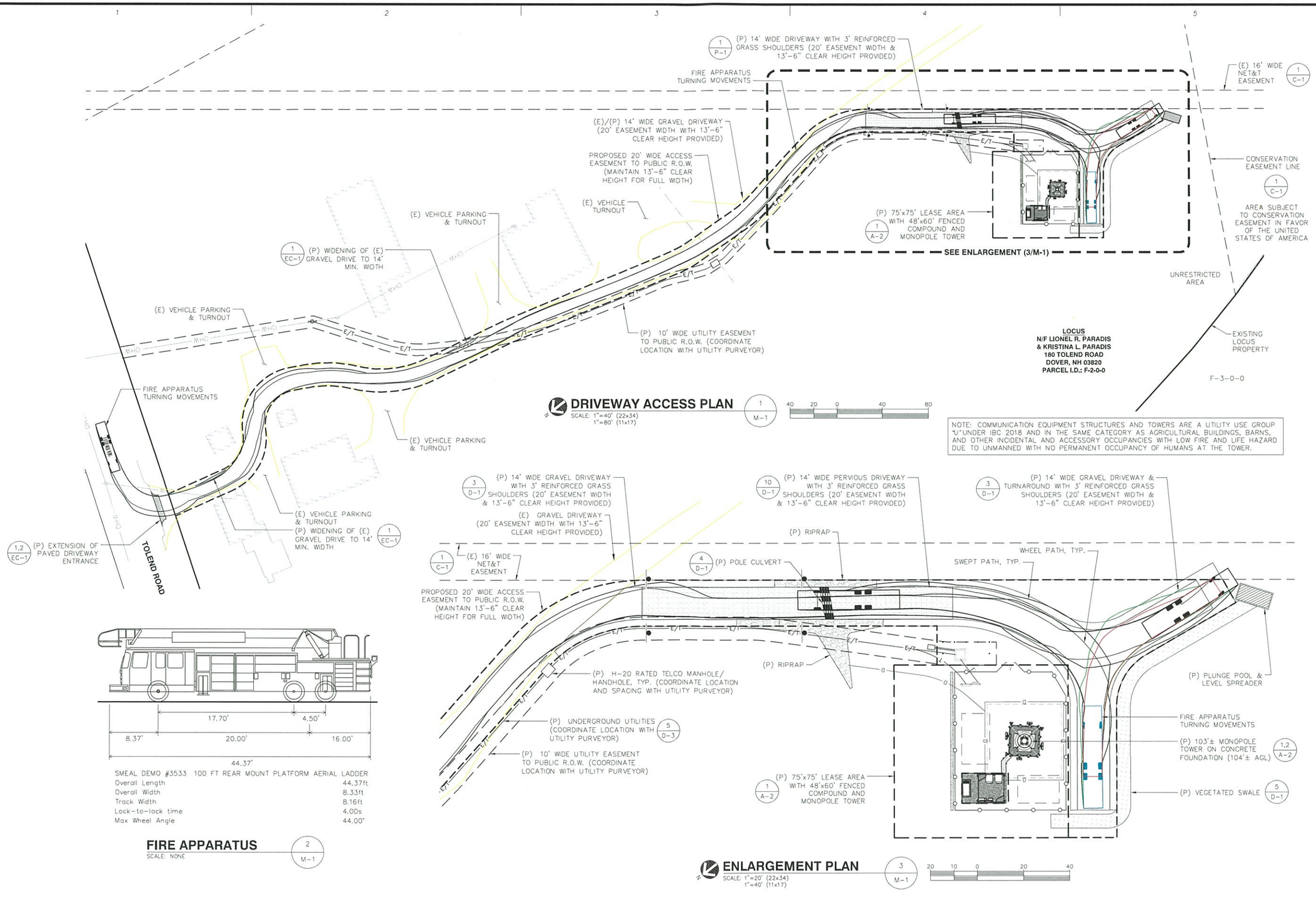
STAMP:

DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
DETAILS

D-3

DOVER FILE: SITE-2023-0012



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verizon
CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

STAMP:
STATE OF NEW HAMPSHIRE
JESSE M. MORENO
NO. 12508
LICENSED ENGINEER
4-11-2024

DATE: 04/11/2024
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030

SHEET TITLE:
DRIVEWAY ACCESS PLAN

M-1

DOVER FILE: SITE-2023-0012

SITE DISTURBANCE SUMMARY

ITEM	AREA (SF)
(P) ACCESS & COMPOUND	7,760±
(P) RIPRAP (DRAINAGE)	790±
(P) VEGETATED SWALE (DRAINAGE)	915±
(P) WIDENING (E) DRIVE	225±
(P) EXTENSION OF (E) PAVED DRIVE APRON	210±
LOAM & SEED	8,175±
TOTAL EARTH DISTURBANCE (SITE)	18,075±

UTILITY DISTURBANCE SUMMARY

ITEM	AREA (SF)
LOAM & SEED (2' WIDE TRENCH)	1,065±
TOTAL EARTH DISTURBANCE (UTILITIES)	1,065±
TOTAL DISTURBANCE (SITE & UTILITIES)	19,140±

(P) IMPERVIOUS SUMMARY

ITEM	AREA (SF)
(P) GRAVEL DRIVEWAY SECTIONS (STANDARD GRAVEL DRIVEWAY)	2,960±
(P) COMPOUND IMPERVIOUS (AT FULL BUILD-OUT)	750±
(P) WIDENING OF (E) GRAVEL DRIVE (IMPERVIOUS)	70±
(P) EXTENSION OF (E) PAVED DRIVE APRON (IMPERVIOUS)	122±
MAXIMUM COMBINED TOTAL OF (P) IMPERVIOUS	3,902± SF

AREA SUBJECT TO CONSERVATION EASEMENT IN FAVOR OF THE UNITED STATES OF AMERICA

UNRESTRICTED AREA

CONSERVATION EASEMENT LINE (1 / C-1)

(P) CONSTRUCTION ENTRANCE/TRACKING PAD (1 / EC-2)

LIMITS OF EARTH DISTURBANCE: SITE (SHOWN IN RED) = 17,640± S.F.

(P) 14' WIDE DRIVEWAY WITH 3' REINFORCED SHOULDERS (20' EASEMENT WIDTH & 13'-6" CLEAR HEIGHT PROVIDED)

(P) ARMORED FENCE/SILT SOCK EROSION CONTROL DOUBLE SPACED (2 ROWS) AT LIMIT OF WORK (4 / EC-2)

(P) SILT FENCE EROSION CONTROL AT LIMIT OF WORK (5 / EC-2)

(P) H-20 RATED TELCO HANDHOLE, TYP. (COORDINATE LOCATION AND SPACING WITH UTILITY PURVEYOR)

(E) 16' WIDE NET&T EASEMENT

(E) GRASS/FIELD AREA

(P) SOIL & GRAVEL STOCKPILE AREA

(P) CONCRETE WASHOUT AREA (3 / EC-2)

(P) DEWATERING BASIN, AS REQUIRED (2 / EC-2)

(P) SILT FENCE EROSION CONTROL AT LIMIT OF WORK (5 / EC-2)

(P) CONSTRUCTION LAYDOWN AREA

(P) COMPOUND SURFACE (3/4" CLEAN WASHED STONE, TYP.)

(P) 103'± MONOPOLE TOWER ON CONCRETE FOUNDATION (104'± AGL)

(P) 75'x75' LEASE AREA WITH 48'x60' FENCED COMPOUND AND MONOPOLE TOWER

LIMITS OF EARTH DISTURBANCE (SHOWN IN RED): (E) DRIVE WIDENING TO 14' = 120± S.F.

(P) WIDENING OF (E) GRAVEL DRIVE TO 14' MIN. WIDTH (40± SF IMPERVIOUS). SEE DRIVEWAY WIDENING SPECIFICATION NOTE BELOW

(P) SILT FENCE EROSION CONTROL AT LIMIT OF WORK (5 / EC-2)

(P) H-20 RATED MANHOLE/HANDHOLE, TYP. (COORDINATE LOCATION AND SPACING WITH UTILITY PURVEYOR)

(E)/(P) 14' WIDE GRAVEL DRIVEWAY (20' EASEMENT WIDTH WITH 13'-6" CLEAR HEIGHT PROVIDED)

EXISTING UTILITY POLE PSNH 4/111A TO BE RELOCATED

LIMITS OF EARTH DISTURBANCE (SHOWN IN RED): (E) DRIVE WIDENING TO 14' = 105± S.F.

(P) RELOCATED UTILITY POLE PSNH 4/111A W/ (P) DROP

(P) 10' WIDE UTILITY EASEMENT TO PUBLIC R.O.W. (COORDINATE LOCATION WITH UTILITY PURVEYOR)

PROPOSED 20' WIDE ACCESS EASEMENT TO PUBLIC R.O.W. (MAINTAIN 13'-6" CLEAR HEIGHT FOR FULL WIDTH)

(P) UNDERGROUND UTILITIES (COORDINATE LOCATION WITH UTILITY PURVEYOR)

LIMITS OF EARTH DISTURBANCE: UTILITIES (2' WIDE, SHOWN IN RED) = 1,065± S.F.

(P) WIDENING OF (E) GRAVEL DRIVE TO 14' MIN. WIDTH (30± SF IMPERVIOUS). SEE DRIVEWAY WIDENING SPECIFICATION NOTE BELOW

(P) SILT FENCE EROSION CONTROL AT LIMIT OF WORK (5 / EC-2)

(P) EXTENSION OF PAVED DRIVEWAY ENTRANCE (122± SF IMPERVIOUS) (2 / EC-1)

LIMITS OF EARTH DISTURBANCE: (P) PAVED APRON EXTENSION (SHOWN IN RED) = 210± S.F.

TOLEND ROAD

(E) DRIVEWAY APRON

LOCUS
N/F LIONEL R. PARADIS
& KRISTINA L. PARADIS
180 TOLEND ROAD
DOVER, NH 03820
PARCEL I.D.: F-2-0-0

EXISTING LOCUS PROPERTY

F-3-0-0

EDGE (E) GRAVEL DRIVEWAY, TYP.

LOAM & SEED TO STABILIZE AS REQUIRED, TYP.

(E) 15.5'±

31.9'

5.0'

22.0'

R5'

(P) EXTENSION OF PAVED DRIVEWAY ENTRANCE (122± SF IMPERVIOUS) MATCH (E) GRADES

LOAM & SEED TO STABILIZE AS REQUIRED, TYP.

EDGE (E) GRAVEL DRIVEWAY, TYP.

(E) DRIVEWAY APRON

DRIVEWAY APRON ENLARGEMENT (2 / EC-1)

SCALE: 1"=12' (22x34) 1"=24' (11x17)

12 6 0 12 24

EROSION CONTROL PLAN (1 / EC-1)

SCALE: 1"=40' (22x34) 1"=80' (11x17)

40 20 0 40 80

5'

EXISTING DRIVEWAY APRON PAVEMENT

EXISTING GRAVEL DRIVE

4-1/2" NHDOT ITEM 403.12 HOT BITUMINOUS PAVEMENT (HAND METHOD, PLACED IN 2 COURSES)

12" NHDOT ITEM 304.35 CRUSHED GRAVEL FOR DRIVES

PAVED APRON SECTION

DRIVEWAY WIDENING USDA CONSERVATION PRACTICE STANDARD (CODE 560):

- SURFACE COURSE: 6" MINIMUM DEPTH NHDOT 304.4 CRUSHED STONE FINE.
- BASE COURSE: COMPACTED 24" BASE DEPTH NHDOT 304.3 CRUSHED GRAVEL (OR 304.6 CRUSHED STONE – VERY COURSE) TO MATCH EXISTING.

NOTE: BASE COURSE MAY BE SUBSTITUTED WITH RECLAIMED CONCRETE AGGREGATE IN ACCORDANCE WITH AASHTO M-319 AND USDA CONSERVATION PRACTICE STANDARD ACCESS ROAD TO MATCH EXISTING DRIVE.

ALL DISTURBED AREAS OUTSIDE GRAVEL AREAS, OTHER THAN SWALES, SHALL BE SEEDED WITH NORTHEAST TOLERANT GRASS MIXTURE CONSISTING OF TALL FESCUE, KENTUCKY BLUEGRASS, AND PERENNIAL RYE GRASS, TYP. OTHERWISE VEGETATED SWALES AND STORMWATER DEVICES SHALL BE SEEDED WITH NEW ENGLAND ROADSIDE MATRIX MIX UPLAND SEED APPLIED AT 35 LBS/ACRE BY NEW ENGLAND WETLAND PLANTS, INC. OR APPROVED EQUAL.

EROSION CONTROL BARRIER LEGEND

SF — SILT FENCE

DAF — ARMORED FENCE / SILT SOCK DOUBLE SPACED (2 ROWS)

DOUBLE SPACED EROSION CONTROL BARRIERS SHALL BE LOCATED AT OUTFALLS AND CRITICAL POINTS.

ProTerra DESIGN GROUP, LLC
4 Bay Road
Building A; Suite 200
Hadley, MA 01035
(413) 320-4918

CLIENT:

NO.	DATE	REVISIONS
A	06/13/23	ISSUED FOR REVIEW
B	09/25/23	ISSUED FOR REVIEW
C	09/29/23	ISSUED FOR PERMITTING
1	12/21/23	PERMITTING REVISED
2	03/12/24	PERMITTING REVISED
3	04/11/24	TRC COMMENTS

TITLE:

SITE NAME: DOVER_W_NH
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:

CELLCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

verizon

STAMP:

JESSE M. MORENO NO. 13509 ENGINEER STATE OF NEW HAMPSHIRE

4-11-2024

DATE:	04/11/2024
DRAWN:	STZ/JEB
CHECK:	JMM/TEJ
SCALE:	SEE PLAN
JOB NO.:	13-030

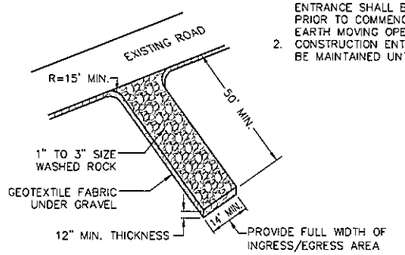
SHEET TITLE:

EROSION CONTROL PLAN & DETAILS

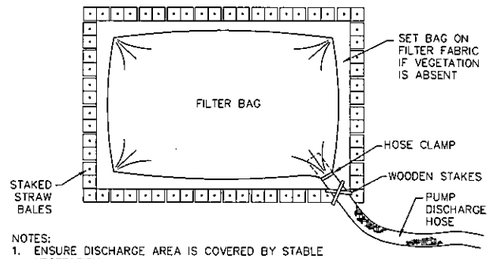
EC-1

DOVER FILE: SITE-2023-0012

CONSTRUCTION ENTRANCE NOTES:
1. AGGREGATE CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF EARTH MOVING OPERATIONS.
2. CONSTRUCTION ENTRANCE TO BE MAINTAINED UNTIL REMOVED.

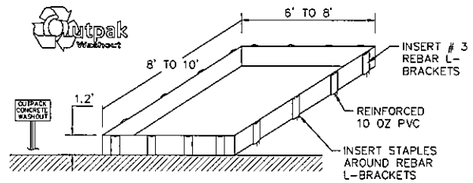


CONSTRUCTION ENTRANCE (1 / EC-2)
SCALE: NONE



NOTES:
1. ENSURE DISCHARGE AREA IS COVERED BY STABLE VEGETATION.
2. USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.
3. TO BE PLACED AT AN UPLAND LOCATION THAT WILL ALLOW WATER TO DRAIN TO THE GROUND.
4. SIZE OF STRAW BALE ENCLOSURE TO BE 10'x10' ADJUSTED TO WATER VOLUME.
5. ADDITIONAL STRAW BALES MAY BE USED TO INCREASE RETENTION & FILTERING.

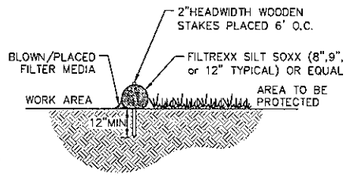
DEWATERING BASIN (2 / EC-2)
SCALE: NONE



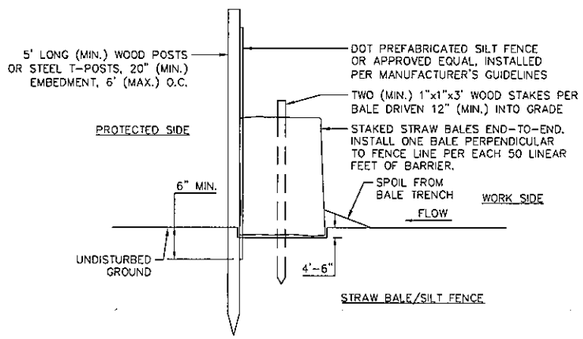
NOTES:
1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT.
2. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
3. THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
4. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
5. DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE.
6. DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
7. AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
8. LOCATE WASHOUT AREA AT LEAST 50' (15 METERS) FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES.
9. WASH OUT WASTES INTO THE OUTPACK WASHOUT AS SHOWN WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.

CONCRETE WASHOUT AREA (3 / EC-2)
SCALE: NONE

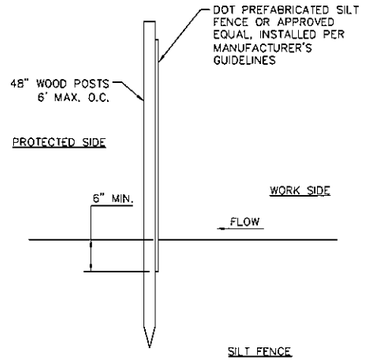
NOTES:
1. USE SILT SOXX WHERE CONDITIONS DO NOT ALLOW STAKES TO BE DRIVEN.
2. SILT SOXX FILL TO MEET FILTREXX SPECIFICATIONS AND APPLICATION REQUIREMENTS.
3. SILT SOXX COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. FILTER MEDIA/STRAW BALES TO BE INERT AND FREE FROM INVASIVE WEEDS AND NON-NATIVE SPECIES.
5. MAY STAKE BEHIND SOCK AT SLIGHT ANGLE (6' O.C.).



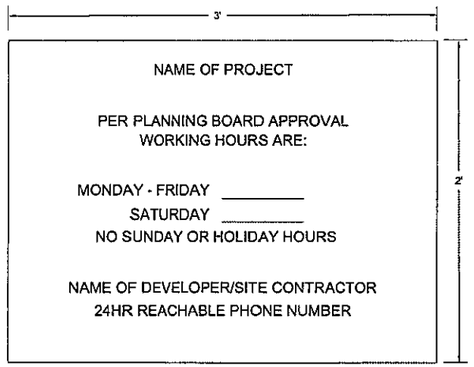
SILT SOXX / COMPOST MEDIA SOCK



EROSION CONTROL BARRIER (4 / EC-2)
SCALE: NONE



SILT FENCE (5 / EC-2)
SCALE: NONE



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND

CITY OF DOVER - CONSTRUCTION SIGN (6 / EC-2)
SCALE: NONE

EROSION CONTROL NOTES

1. APPLICANT PROPOSES TO CONSTRUCT A CELLULAR TELECOMMUNICATIONS FACILITY CONSISTING OF A FENCED COMPOUND, DRIVEWAY AND UTILITY WORK WITHIN A LEASE AREA AND EASEMENTS.
2. ALL WORK SHALL CONFORM TO THE NEW HAMPSHIRE STORMWATER MANUAL – VOLUME 3 "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" BY NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DATED DECEMBER 2008 OR AS SUBSEQUENTLY REVISED.
3. TEMPORARY SILT FENCE EROSION CONTROL BARRIER SHALL BE MAINTAINED THROUGHOUT SITE CONSTRUCTION. STOCK PILE ON SITE 100 FT. OF SILT FENCE FOR EMERGENCY USE. TEMPORARY EROSION BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED.
4. THE CONTRACTOR SHALL CHIP ALL BRUSH AND SLASH CUTTINGS ON SITE AND STOCKPILE THE CHIPS TO BE USED ON ALL UNSTABLE, DISTURBED AREAS DURING CONSTRUCTION AS TEMPORARY STABILIZATION MULCH. NO BURNING WILL BE ALLOWED ON SITE.
5. TEMPORARY STABILIZATION MUST BE PROVIDED TO ANY DISTURBED EARTH THAT IS OPENED UP IN ANY ONE LOCATION FOR MORE THAN 14 DAYS. CHIPS FROM LAND CLEARING, EROSION CONTROL BLANKETS, OR FAST GROWING RYE GRASSES MAY BE USED FOR TEMPORARY STABILIZATION AS REQUIRED.
6. STRIPPED TOPSOIL SHALL BE STOCKPILED AND PROTECTED WITH STRAW MULCH. ALL STOCKPILES SHALL HAVE AN APPROVED SILTATION BARRIER TOTALLY SURROUNDING THE PILE. THE PILE SHALL BE IN AN APPROVED UPLAND AREA A MINIMUM OF TWENTY-FIVE FEET FROM ALL RESOURCE AREAS.
7. THE PHASING AND SEQUENCING OF THE WORK FOR THE SITE PREPARATION FOR THE TELECOMMUNICATIONS EQUIPMENT INSTALLATION CONSISTS OF INSTALLING TEMPORARY EROSION AND SEDIMENTATION CONTROL BARRIERS; CLEARING AND ROUGH GRADING OF COMPOUND; FOUNDATION WORK; BACK FILL FOUNDATIONS; FENCED COMPOUND CONSTRUCTION; INSTALLATION OF TOWER AND GROUND EQUIPMENT; INSTALLATION OF UTILITIES; GROUNDING AND LIGHTNING PROTECTION; EQUIPMENT TESTING; FINAL GRADING AND STABILIZATION OF DISTURBED AREAS; LOAM AND SEED DISTURBED AREAS OUTSIDE COMPOUND; FINAL CLEANUP. THE ESTIMATED TIME FOR COMPLETION OF THE WORK IS APPROXIMATELY SIXTEEN (16) WEEKS.
8. THE COMPOUND ENCLOSURE IS SURFACED WITH CRUSHED STONE UNDERLAIN BY A WEED-BLOCK SYNTHETIC FILTER FABRIC. DRAINAGE PATTERNS, RUNOFF VOLUMES AND PEAK FLOW RATES WILL NOT BE ALTERED BY THE PROPOSED CONSTRUCTION.
9. IF REQUIRED, TEMPORARY DEWATERING OF THE TRENCH EXCAVATIONS SHALL BE DIVERTED INTO A TEMPORARY STILLING BASIN. INFILTRATION IN THE STILLING BASIN AND FLOW THROUGH THE CRUSHED STONE CONTAINMENT BERM WILL RESULT IN DIFFUSE, NON-POINT SOURCE RUNOFF OVER VEGETATED AREAS.
10. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF THE FENCED COMPOUND AND ROADWAY SHALL BE PERMANENTLY ESTABLISHED WITH A NATIVE VEGETATIVE GROUND COVER AT THE CONCLUSION OF CONSTRUCTION. GRADED AREAS SHALL BE PROTECTED WITH STRAW MULCH UNTIL A GOOD VEGETATIVE COVER IS ESTABLISHED.
11. THE TOTAL IMPACT AREA OF THE DISTURBED TOWER & COMPOUND CONSTRUCTION SITE IS BOUNDED BY THE "LIMIT OF WORK" AS SHOWN HEREON. THE MAXIMUM AREA OF DISTURBANCE WITHIN THE LIMIT OF WORK IS APPROXIMATELY **19,140 SQUARE FEET.** THE PROJECT IMPACT AREA IS BELOW THE EXEMPTION THRESHOLD OF 43,560 SQUARE FEET IN 40 CFR PARTS 9, 122-124 AND THEREFORE IS NOT SUBJECT TO REGULATION UNDER THE EPA NPDES GENERAL CONSTRUCTION PERMIT PROGRAM.
12. THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL SITE DEVELOPMENT WORK IN A MANNER THAT DOES NOT EXCEED THE LIMITS OF WORK SHOWN ON THE PLANS. ADDITIONALLY, THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT RESULT IN STORM WATER DISCHARGES WITH AN ADVERSE IMPACT ON ANY RESOURCE AREAS OR DOWNSTREAM PROPERTIES.
13. A CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
14. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SILT FROM BEHIND SILTATION BARRIERS AND DISPOSE OF SILT EVENLY IN UPLAND AREAS. REMOVE ALL EROSION CONTROL DEVICES WHEN A GOOD VEGETATIVE COVER IS ESTABLISHED.

ProTerra DESIGN GROUP, LLC
4 Bay Road
Building A; Suite 200
Hadley, MA 01035
(413) 320-4918

CLIENT:

NO.	DATE	REVISIONS
A	06/13/23	ISSUED FOR REVIEW
B	09/25/23	ISSUED FOR REVIEW
0	09/29/23	ISSUED FOR PERMITTING
1	12/21/23	PERMITTING REVISED
2	03/12/24	PERMITTING REVISED
3	04/11/24	TRC COMMENTS

TITLE:
SITE NAME: DOVER_M_NH
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820

APPLICANT:
CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
verizon

STAMP:
JESSE M. MORENO 61250 CHARGE 4-11-2024

DATE:	04/11/2024
DRAWN:	STZ/JEB
CHECK:	JMM/TEJ
SCALE:	SEE PLAN
JOB NO.:	13-030

SHEET TITLE:
EROSION CONTROL PLAN & DETAILS

EC-2

DOVER FILE: SITE-2023-0012

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQJQ689	
Radio Service WU - 700 MHz Upper Band (Block C)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2019	07-15-2020	06-13-2029	

Market Number	Channel Block	Sub-Market Designator
REA001	C	0

Market Name
Northeast

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2013	06-13-2019		

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ689 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

verizon

Dover W NH

180 Tolend Road, Dover, NH 03820

June 13, 2023

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3. RF Exposure Calculation Methods 2
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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of Verizon's antenna arrays to be mounted at 100' AGL on the proposed monopole located at 180 Tolend Road in Dover, NH. The coordinates of the guyed tower are 43° 11' 57.50" N, 70° 54' 51.95" W.

Verizon is proposing the following:

1) Install (16) antennas, three (3) sectors of four (4) antennas per sector to support its 4G LTE and 5G NR network;

This report considers the antenna configuration[1] for Verizon's proposed installation to derive the resulting % Maximum Permissible Exposure (MPE) of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to Verizon's Radio Frequency Design Sheet updated 10/19/2022.

3. RF Exposure Calculation Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{GRF^2 \times \text{EIRP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna

V = Vertical Distance from radiation center of antenna

Off Beam Loss is determined by the selected antenna patterns

GRF = Ground reflection factor of 2.0

These calculations assume that the antennas are operating at full power and 100 percent capacity, and that all antenna channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the calculated power density and corresponding % MPE levels reported below are much higher than the actual signal levels will be from the final installation.

4. Antenna Inventory

Table 1 below outlines Verizon's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachment C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 40°	700	160	16.8	7658	NHH-45B-R2B	48	0	6.0	100
		850	160	17.5	8997		43			
		1900	160	19.9	15636		43			
		2100	160	20.3	17144		41			
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	100
	Beta / 130°	700	160	14.9	7658	NHH-65B-R2B	65	0	6.0	100
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	160	18.4	11069		64			
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	100
	Gamma / 220°/250°	700	160	16.8	7658	NHH-45B-R2B	48	0	6.0	100
		850	160	17.5	8997		43			
		1900	160	19.9	15636		43			
		2100	160	20.3	17144		41			
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	100
	Delta / 310°	700	160	14.9	7658	NHH-65B-R2B	65	0	6.0	100
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	160	18.4	11069		64			
		3700	200	25.5	70963	MT6407-77A	-	0	2.92	100

Table 1: Proposed Antenna Inventory[2] [3]

[2] Antenna heights are in reference to the site plans prepared by ProTerra Design Group, LLC, dated 6/13/2023 (Rev. A).

[3] Transmit power assumes 0 dB of cable loss.

5. Calculated % MPE Results

The calculated % MPE results for the proposed antenna configuration are shown in Figure 1 below. Each frequency band and technology is calculated as well as the resulting cumulative percent of MPE. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

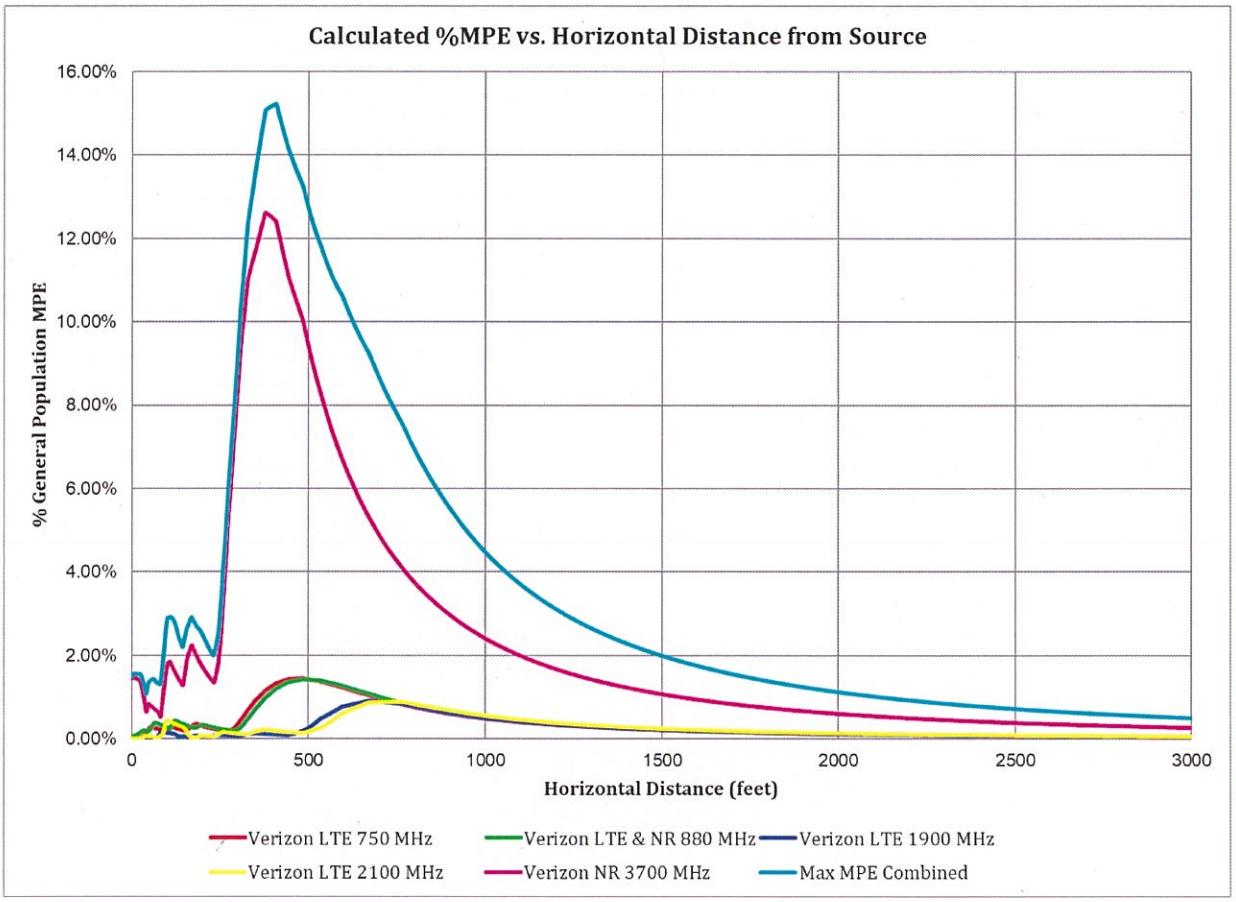


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (**15.22%** of the General Population limit) is calculated to occur at a horizontal distance of 407 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, and that all antenna channels are transmitting simultaneously. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six-foot height offset was considered in this analysis to account for average human height. As a result, the calculated % MPE levels are significantly higher than the actual signal levels will be from the final installation. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
Verizon LTE & NR 880 MHz	1	160.0	100.0	407	0.006768	0.567	1.19%
Verizon LTE 1900 MHz	1	160.0	100.0	407	0.001032	1.000	0.10%
Verizon LTE 2100 MHz	1	160.0	100.0	407	0.001927	1.000	0.19%
Verizon LTE 750 MHz	1	160.0	100.0	407	0.006593	0.500	1.32%
Verizon NR 3700 MHz	1	200.0	100.0	407	0.124113	1.000	12.41%
						Total	**15.22%**

Table 2: Maximum Percent of General Population Exposure Values [4] [5]

[4] Frequencies listed are representative of the operating band and are not the specific operating frequency.

[5] The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

6. Conclusion

The above analysis concludes that RF exposure levels from the proposed site will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **15.22% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 407 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Cory Goulet
Associate RF Engineer
C Squared Systems, LLC

June 6, 2023
Date

Reviewed/Approved By: Keith Vellante
Director – RF Services
C Squared Systems, LLC

June 13, 2023
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Verizon's Radio Frequency Design Sheet updated 10/19/2022

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[6]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[7]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[6] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[7] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

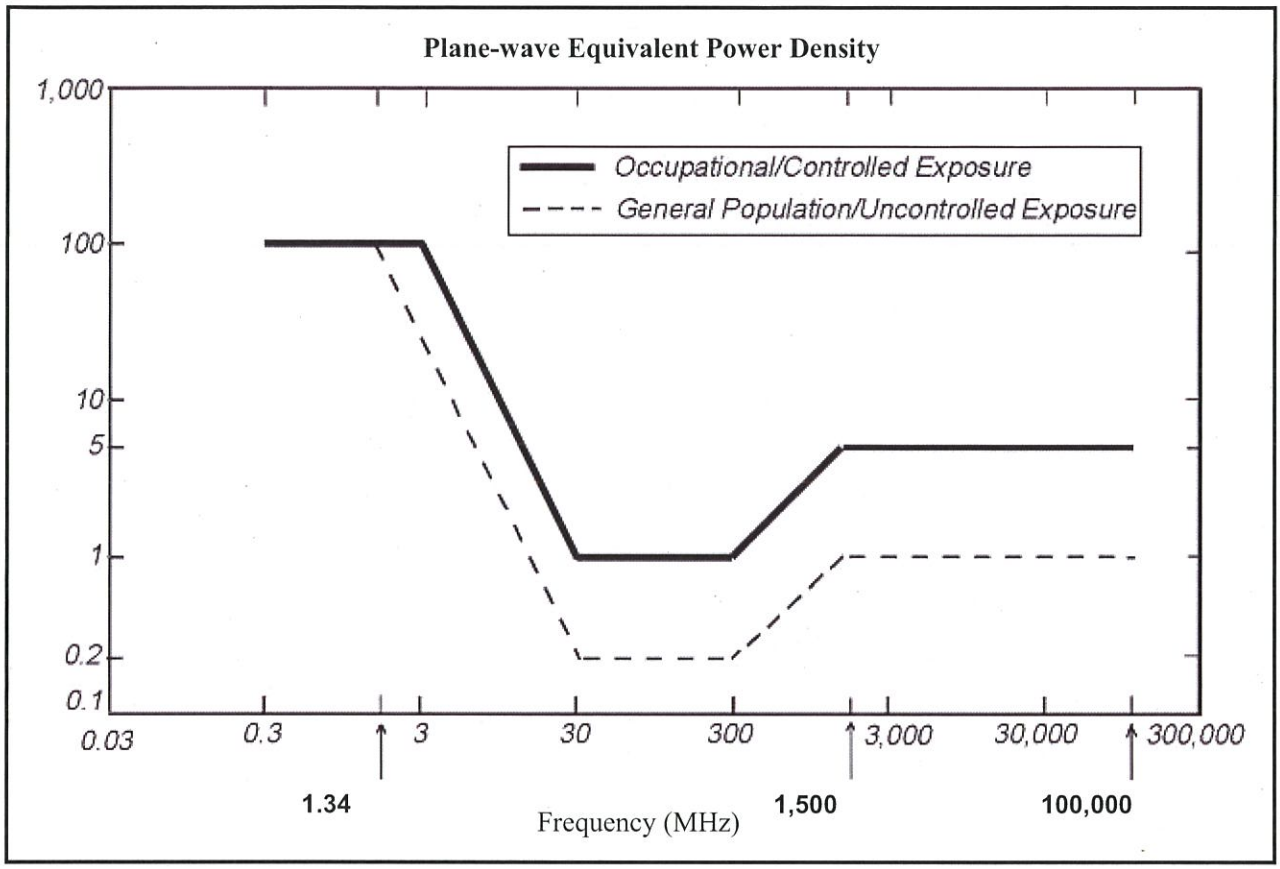
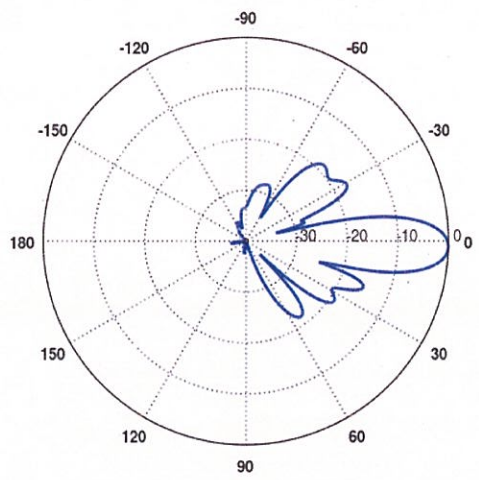


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns

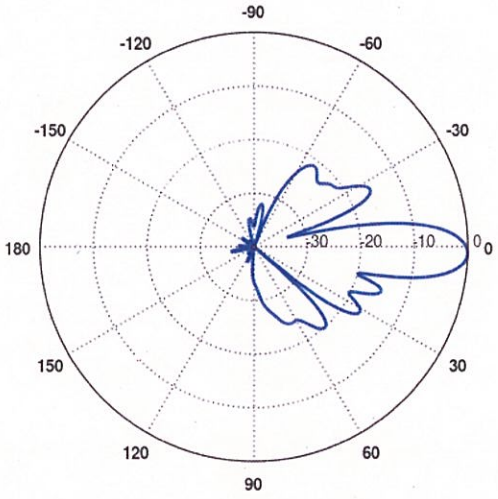
750 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-45B-R2B
Frequency Band:	698-806 MHz
Gain:	16.8 dBi
Vertical Beamwidth:	12.5°
Horizontal Beamwidth:	48°
Polarization:	±45°
Dimensions (L x W x D):	77.6" x 23.9" x 13.6"



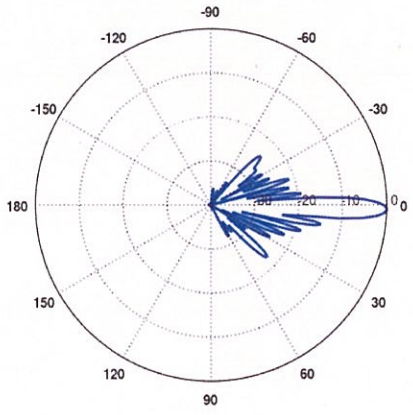
885 MHz

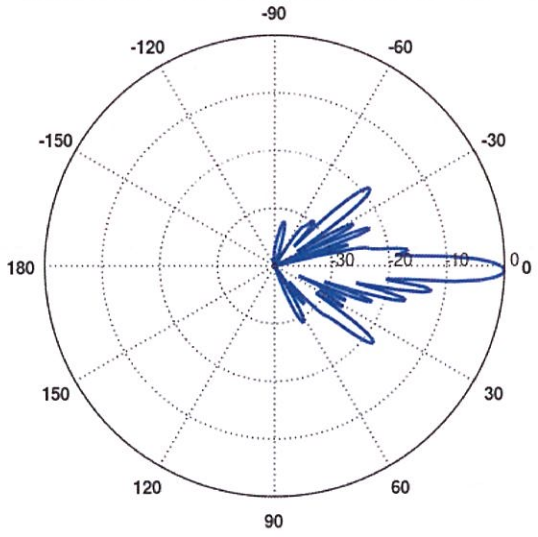
Manufacturer:	COMMSCOPE
Model #:	NHH-45B-R2B
Frequency Band:	806-896 MHz
Gain:	17.5 dBi
Vertical Beamwidth:	11.4°
Horizontal Beamwidth:	43°
Polarization:	±45°
Dimensions (L x W x D):	77.6" x 23.9" x 13.6"



1900 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-45B-R2B
Frequency Band:	1850-1990 MHz
Gain:	19.9 dBi
Vertical Beamwidth:	5.4°
Horizontal Beamwidth:	43°
Polarization:	±45°
Dimensions (L x W x D):	77.6" x 23.9" x 13.6"



2100 MHz Manufacturer: COMMSCOPE Model #: NHH-45B-R2B Frequency Band: 1920-2200 MHz Gain: 20.3 dBi Vertical Beamwidth: 5° Horizontal Beamwidth: 41° Polarization: ±45° Dimensions (L x W x D): 77.6" x 23.9" x 13.6"	
3700 MHz Manufacturer: Samsung Model #: MT6407-77A Frequency Band: 3700~3980 MHz Gain: 25.5 dBi Vertical Beamwidth: ~12° Horizontal Beamwidth: ~100° Polarization: N/A Dimensions (L x W x D): 35" x 16" x 5.5"	N/A

verizon

Network Engineering - UPNY
1275 John Street, Suite 100
West Henrietta, New York 14586

CO-LOCATION POLICY

Verizon Wireless' co-location policy is as follows:

Verizon Wireless encourages and promotes co-location, both by allowing other providers to locate on its towers, and by attempting to locate its facilities on other providers' towers.

Verizon Wireless maintains the following requirements for other wireless telecommunication providers who desire to locate on Verizon Wireless' facilities:

1. The other provider must pay Verizon Wireless appropriate and fair compensation reflecting Verizon Wireless' investment in the engineering, legal, construction, material, and related costs for the site and facility;

2. The co-location must be technologically feasible both in terms of radio frequency transmissions and structural integrity of the tower; and

3. The other provider must have a similar policy of co-location for Verizon Wireless and its affiliated/related companies.

DONNA P. BENTON, AICP
Director of Planning and
Community Development
d.benton@dover.nh.gov

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City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

Zoning Board of Adjustment
NOTICE OF DECISION

July 25, 2023

Jared Lusk
Nixon Peabody, LLP
1300 Clinton Square
Rochester, NY 14604

Re: **ZONE-2023-0035 – 180 Tolend Road (Tax Map F, Lot 2)**

Dear Mr. Lusk:

Please be advised that after a public hearing on July 20, 2023, the Zoning Board of Adjustment ("ZBA") voted 4-0 to **APPROVE** your request pursuant to **Section 170-22.C.(1)., of the Zoning Ordinance**. The ZBA found that the criteria of the Variance were met, which allows for the construction of a new 104' telecommunications tower on the above referenced property, where the construction of new telecommunications towers is otherwise only permitted on 15 specific parcels as detailed in the Zoning Ordinance. The location of the tower on the subject property will add coverage to an area within the City of Dover where presently there is insufficient coverage, as demonstrated during the applicant's testimony at the public hearing. Additionally, the ZBA approved the application with the following subsequent condition:

1. The applicant shall go before the Planning Board for Site Plan review.

Note: The City Council, any party to the action, or any person directly affected has a right to seek rehearing and thereafter appeal the ZBA's determination by timely following the procedural requirements outlined within New Hampshire statutes. *See generally* New Hampshire Revised Statutes Annotated, Chapter 677, *available at*: https://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-LXIV-677.htm

If you have any questions, please do not hesitate to contact me directly at: (603) 516-6008.

Sincerely,

Natasha M. Kypfer

Natasha M. Kypfer
Zoning Administrator, Assistant City Planner

Enclo.: Donna Benton, AICP — Director of Planning and Community Development
James Maxfield — Building Official
Michelle Dube — Inspection Services Office Manager
Donna Langley — City Assessor

CITY OF DOVER

PLANNING BOARD - FILE #TRAN-2024-0003

Application Type:	Transfer of Development Rights
Applicant(s):	210 Tolend Road, LLC
Owner(s):	210 Tolend Road, LLC
Location:	210 Tolend Rd. (Assessor's Map F, Lot 3)
Meeting Date:	May 14, 2024

INTENT: This item will be continued to May 28, 2024.