CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

REVISED

Meeting Type: Regular Meeting
Meeting Location: Council Chambers, City Hall, 288 Central Avenue, Dover, NH 03820
Meeting Date: **Tuesday, July 22, 2025**
Meeting Time: **7:00 pm**

1. **CITIZENS' FORUM**
2. **APPROVAL OF THE PRIOR MINUTES**
   - June 24, 2025 Regular Meeting Minutes
3. **OLD BUSINESS**
4. **NEW BUSINESS**

A. Consideration and acceptance of a Transfer of Development Rights for 25 Dover Point, LLC, Assessor's Map K, Lot 35, zoned R-12, located at 25 Dover Point Road. (Proposal is to purchase six (6) units through TDR, for a total of sixteen (16) units.) *(TRAN-2025-0001)

B. Consideration and acceptance of a Lot Line Adjustment for Stephen P. & Deborah H. Gitschier & Kathleen H. Gitschier, Assessor's Map 15, Lots 15 & 15-1, zoned G, located at 104 & 108 Rutland Street. *(LOTA-2025-0007)

C. Consideration and acceptance of a Lot Line Adjustment for Timothy & Cheryl Lindsay Trust & The Lucille E. Richard Revocable Trust of 2000, zoned R-40, located at 4 & 10 Bay View Road. *(LOTA-2025-0008)

D. ~~Consideration and acceptance of a Lot Line Adjustment for Nickerson Family Revocable Trust & Scott Gower, Dena Tremblay, Michael Taylor, Thomas Taylor, Jamie Gower, Douglas Gower, Assessor's Map 33, Lot 72 & 71-A, zoned R-12, located at 371 Washington Street & 3 Myra Avenue. *(LOTA-2025-0009)~~ *The applicant requested to withdraw the application.*

E. Consideration and acceptance of a Conditional Use Permit for John Stephen Craig Revocable Trust & Judith Lapkin Craig Revocable Trust, Assessor's Map N, Lot 8-1-3, zoned R-40, located at 44 Saddle Trail Drive. (Proposal is to allow impacts totaling 566± s.f. within the Conservation District to allow for the construction of a 3.5' high retaining wall with stairs and a boardwalk.) *(COND-2025-0011)

F. ~~Consideration and acceptance of a Conditional Use Permit for James Welch, Assessor's Map 15, Lot 16, zoned G, located at 112 Rutland Street. (Proposal is to allow a garage to be built 50' from the front build-to-line.) *(COND-2025-0012)~~ *Following discussion with applicant, staff requests continuance to the August 26, 2025 meeting.*

G. Consideration and acceptance of a Conditional Use Permit for True North Development, LLC, Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Road. (Proposal is for site grading and drainage improvements and to install underground utilities to support the development of two (2) new single-family homes, resulting in ±6,000 s.f. of impact within the Conservation District.) *(COND-2025-0002)

H. Consideration and acceptance of a Conditional Use Permit for Eric Latour, Assessor's Map B, Lot 18-43, zoned R-40, located at 28 Cornerstone Drive. (Proposal is to construct a garage with mudroom that will result in ±2,435 s.f. of impacts to the wetland buffers.) *(COND-2025-0008)

I. Consideration and acceptance of a Conditional Use Permit for Summit Land Development, LLC, Assessor's Map G, Lot 2, zoned CM, located at Littleworth Road. (Proposal is for the construction of an access way and site grading for the installation of a bioretention pond that will result in wetland buffer impacts of 16,679± s.f.) *(COND-2025-0013)

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J. Consideration and acceptance of a Site Plan for Summit Land Development, LLC Assessor's Map G, Lot 2, zoned CM, located at Littleworth Road. (Proposal is for the construction of a 26,880± s.f. light industrial building.) *(SITE-2025-0007)

K. Consideration and possible posting of the proposed Amendments regarding Chapter 170 (Zoning Ordinance). The full text of the amendments is available in the Planning Department and at www.dover.nh.gov located under meeting materials and on the Planning Department page*.

5. STAFF COMMENT

6. MEMBER COMMENTS

7. ADJOURNMENT

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

DOVER PLANNING BOARD – MINUTES

CITY OF DOVER

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers, City Hall, 288 Central Ave, Dover, NH.
Meeting Date:	**Tuesday, June 24, 2025**
Meeting Time:	**7:00 pm**

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

G. Cruikshank (Chair) called the meeting to order at 7:00p.m and noted Eric Salovitch would sit in for Melina Gambino.

1. CITIZENS' FORUM

Citizens Forum Open

John Wyeth, 7 Roosevelt Ave, spoke about the TDR process and how it is unfolding is not in line with the community. He expressed frustration with the abutter role including when and how to find information and how to view it and understand it. TDR process is being misused from protecting large tracts of land into a money transfer to squeeze development onto small, urban lots. He addressed the loss of character for neighborhoods.

Richard Hamor, 13 Roosevelt Ave, is concerned about density within the R-12 zone turning into an R-8 zone with the approval of proposed development.

Citizens Forum Closed

F. Cullen disclosed that he has a professional relationship with CivilWorks NE and McEneaney Survey Associates, and he is a client of these companies. He does not have any financial, personal, or professional interest that would create a conflict of interest in relation to this application. His evaluation of this application is unbiased and impartial. If any member of the Planning Board objects to his participation with this application, he asked them to say so. (No one spoke)

2. APPROVAL OF THE PRIOR MINUTES

- June 10, 2025 Regular Meeting Minutes

Motion: G. DeBoer moved to approve the regular meeting minutes of June 10, 2025. Seconded by: E. Salovitch. Vote: U/A

3. OLD BUSINESS

4. NEW BUSINESS

A. Consideration and acceptance of a Transfer of Development Rights for Drowned Valley Holdings, LLC, Assessor's Map 37, Lot 43, zoned R-12, located at 11 Roosevelt Avenue. (Proposal is to request one (1) unit through TDR, for a total of two (2) residential units.) *(TRAN-2025-0005) *(This item was continued from the June 10, 2025 Planning Board Meeting.)*

D. Benton explained that the Applicant is proposing two single-family homes on the subject parcel which currently has one single-family home and a detached garage. The TDR yield calculation was applied to determine a base density of one unit by right on the property and therefore one additional unit is being proposed through purchase with TDR.

The site is also within the Secondary Groundwater Protection District, which limits impervious coverage to 20%. The applicant is proposing about 28% coverage and would need a Conditional Use Permit for the

approximately 1,312 square feet over the limit. Staff has reviewed the proposal and provided a TDR memo to the applicant.
D. Benton clarified the request is specifically for a second single-family home. The existing rights allow the applicant to obtain a building permit and either raze the existing home or convert the existing home into a duplex without Planning Board approval.
If the Board approves the second home, the next steps are for the applicant to go to TRC for review, Conservation Commission if necessary for CUP, and then Planning Board again which abutters will be notified of.

Steve Haight, CivilWorks NE, represented the application and explained the proposal.

He highlighted: Environmental CUP will be required for lot coverage, setback restrictions will be met, driveways will avoid the street trees, abutter concerns about construction will be dealt with at TRC. The request tonight is for the TDR for the additional unit. A duplex is allowable by right, but the second unit is in keeping with the neighborhood.

Mr. Haight addressed questions and comments from the board explaining the reasoning the extra coverage is not due to the TDR request and addressed why the request is for two single-family homes rather than a duplex option.

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

Public hearing opened.
John Wyeth, 7 Roosevelt Ave, expressed the issues he has with the proposal including: character of the neighborhood, size of the homes, lot size and density incompatibility of the proposal, historic homes and demolition review requirements, public and pedestrian safety regarding added traffic, zoning buffer regulation, environmental impact of old trees in the area, watershed and stormwater, geotechnical concerns for the structure of his home. He submitted a petition in opposition.

Brad Jewell, 12 Roosevelt Ave, agreed with the previous speaker. He is concerned about driveway elevations and permits, drainage and protection of trees.

Doug Knight, 19 Roosevelt Ave, noted this will really change the character of the neighborhood. He read an article relating to tree coverage and noted concern for cutting down mature trees. He commented about the watershed and impervious surfaces and runoff.

Tom Barnes, 20 Roosevelt Ave, doesn't understand the process, but it appears the only one benefiting from this is the developer to make money.

Jane Hamor, 13 Roosevelt Ave, is concerned about a serious drainage issue in that neighborhood and the increased water in their basements after the development of Hannaford's, the troubles that will result if the mature trees are damaged, the ruination of the parcel and affect it will have on the surrounding properties which are all old structures with old foundations.

Richard Hamor, 13 Roosevelt Ave, also commented on the trees and the exposed roots, and drainage.

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Emails were received to the office and summarized below:
Jane and Richard Hamor, 13 Roosevelt Ave., oppose the proposed project at 11 Roosevelt Ave., citing concerns about runoff, drainage, and the potential need for blasting due to ledge on site. They argue that adding two homes would disrupt the neighborhood's character, threaten mature trees, and have concerns about surrounding property values. While they do not oppose replacing the existing home, they believe a new home should be built in the same footprint and that this would be more compatible with the neighborhood.

John Wyeth, 7 Roosevelt Ave., opposes the proposed development at 11 Roosevelt Ave., citing concerns about neighborhood character, environmental impacts, stormwater management, and the appropriateness of using TDR on a small residential lot. The letter argues that the project is incompatible with the historic and architectural context of the street, would potentially result in the removal of mature trees, and could worsen drainage and flooding issues due to high water tables and ledge. He also discusses that the site lies within the Berry Brook watershed, raising further concerns about runoff and pollutant discharge. He questions the use of TDR on a constrained lot and urges the Planning Board to deny the proposal or require revisions to reduce impacts.

John Mitchell, 5 Lowell Ave., opposes the proposed development at 11 Roosevelt Ave., discussing environmental and climate concerns, particularly the negative impact of removing mature trees. He cites areas of the city's Master Plan on the importance of urban tree cover and climate resilience and argues that the project contradicts established goals. He also raises concerns about potential water cycle disruptions and increased basement flooding, referencing issues on Lowell Avenue, and requests that the Planning Board deny the proposal.

Ken Costello, 4 Page Ave., does not object to the addition of a new dwelling unit at 11 Roosevelt Ave. but raises concerns about potential impacts to mature street trees. He asks the Planning Board to encourage alternative driveway layouts, require tree protection during construction, and mandate significant replacement planting if any public trees are removed or damaged.

Cheryl and Clayton Currier, 4 Lowell Ave., oppose the proposed project at 11 Roosevelt Ave., citing concerns about the removal of mature trees in the area, stormwater management, historic preservation, and incompatibility with the neighborhood. They urge the Planning Board to deny the proposal.

Mary Beth Gripshover, Milk St., objects to the proposal at 11 Roosevelt Ave., citing concerns about the demolition of the existing home and removal of mature trees that contribute to the street's character and community value. She cautions against unforeseen development impacts and urges the Planning Board to consider long-term environmental and cultural costs, ultimately asking that the proposal be denied.

Mr. Haight addressed public comment:

- Trees depicted are on site. Rest of the trees are along frontage in the ROW and won't be cut
- Drainage for this parcel will be handled on site and reviewed at TRC
- Two units allowed by right. Duplex would be large in the middle of the lot. Proposal is for two separate homes to keep with the character of the neighborhood
- Setbacks will be met
- Tree roots will be looked at by LLA
- 30% coverage includes buildings and driveway. If it can be reduced, it will
- Proposed house size 2000 sf, but house plans will be provided at site plan approval

D. Benton addressed public comment:

- 30-foot buffer is not required in this case
- TDR ordinance is under review by the TDR subcommittee
- Heritage Commission can be asked to review during site plan process / before demolition

Chair Cruikshank addressed public comment:

- Historical buildings are not the purview of this board. Property owners have rights
- Most comments made will be addressed at either/ both TRC or Planning Board site plan review

K. Mavrogeorge addressed public comment:

- The City has a drainage issue which is under review
- Drainage on this site will be addressed at TRC

Chair Cruikshank addressed citizens' forum comments:

- 'Money transfer', 'pay to play' comments are inaccurate. The TDR was not started to allow developers and property owners to get more homes on a lot. The purpose was to bring smaller, more affordable homes to the City of Dover.
    - The process hasn't gone completely as expected which is why there is a TDR subcommittee looking into the process and what changes should be made.
    - The City does not get money to spend how they like through the TDR program
        - The funds go into the conservation fund to purchase land for the City to conserve.
- She understands the plans are overwhelming. She remembers experiencing that when she first started serving on the board.
    - There is no transparency issue or attempt to hide what is proposed
        - There is limited staff and many projects in the works at all times.
        - It's impossible for staff to reach out to individual abutters
        - When residents contact the staff with questions they are more than willing to explain things, make copies etc. to assist

K. Pimental commented that he's always happy to have input and feedback from the public and he understands the rights of the abutters were addressed tonight, but the rights of the property owner are equal to the abutters regarding developing their land. The TDR notification process to abutters is no different than any other application that comes before the board. Dover does a tremendous job of being transparent with these projects by comparison to other cities and towns in the state.

E. Salovitch commented that he is comfortable with the units proposed, but is uncomfortable if this is approved, that each unit could also put in an ADU allowing 4 units here.
The board and staff addressed options for potential conditions on this matter.

G. DeBoer doesn't see what is gained by having two separate units rather than a duplex, which is allowed.
Mr. Haight addressed the intent to have these units match the neighborhood.

F. Cullen asked about the existing garage and if it's encroaching on the abutter's lot.
Mr. Haight confirmed it is all on the property and it will be removed and any new structures will comply with setback regulations.

K. Pimental asked for the non-conformities of the neighborhood listed in the packet could be addressed.
Zack Leavitt, applicant noted due to setbacks, frontage and lot size, only 7 of the 31 lots are conforming leaving 77% non-conforming.

T. Clark confirmed with the applicant that the applicant is the owner of the property.

F. Cullen noted in this instance, the board is acting on a TDR request with no fully developed site plan, though in other instances the board has acted on both simultaneously. There's no judgement, but the subcommittee may want to look at that and develop some consistency.

K. Pimental addressed the trees noting the street is beautiful and the applicant needs to do everything in their power to prevent the trees from being disturbed in the near future and the long term.
E. Salovitch agreed and noted he is concerned about adding a driveway in there without impacting the health of the trees.

Chair Cruikshank addressed the potential addition of ADUs which she is not comfortable with.
K. Pimental agreed and they wondered how they can restrict that if there is state law that all single-family homes are allowed an ADU by right.
K. Pimental asked the applicant if they are willing to volunteer to deed restrict the units so ADUs are not an option.
The applicant agreed to the restriction noting there is no intention of having ADUs. He is willing to agree to the added condition.
Public hearing closed.

STAFF RECOMMENDATION – Transfer of Development Rights
§170-29 provides for additional density to be purchased through Transfer of Development Rights, provided that four criteria are met: The proposal is consistent with the Master Plan; is compatible with the land uses on neighboring lots; is created on property served by public water and sanitary sewer; and not seeking permitted relief caused by additional density.

This lot is on public water and sewer, and the applicant has shown consistency with the Master Plan, specifically, a Land Use goal of encouraging density in developed areas to preserve more rural areas. Staff agrees the proposed two single-family homes are in line with the neighborhood, both in density and housing type. Staff also notes that the subject property could meet the necessary criteria within the R-12 Zoning District, that the existing single-family home could potentially be converted to two-units by right. The proposed layout also meets setbacks for the R-12 District.

The site is in the Secondary Groundwater Protection District, which limits impervious coverage to 20%. The applicant is proposing 28%, which would require a Conditional Use Permit. This coverage issue exists even without the use of TDR, as the allowed lot coverage within the R-12 District is 30%. Staff still recommends reducing impervious coverage in the final design.

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 Granting TDR:
1. A Site Plan application is required to be submitted for review and approval;
   1.1. Per §170-33D(5), the proposed development plan must incorporate a stormwater drainage plan that provides for the retention and percolation within the secondary groundwater protection zone of all development-generated stormwater runoff from a ten-year storm.
2. If applicable, a Conditional Use Permit application for relevant impacts is required to be to be submitted for review and approval;
3. Payment of TDR fees;
4. Revise plan to include the following notes:

4.1. "This site plan uses the Transfer of Development Rights ordinance which allows for relief to the setbacks, lot area, frontage, density and intensity of the development. The Board granted TDR relief to purchase up to one unit for a maximum total of two units on the subject lot."
4.2. "A hydrogeologic study may be required by the Planning Board to investigate the impacts a proposed development or land use activity will have on an existing or future groundwater supply per §170-33D(7)."
4.3. Driveways and homes are designed to limit the disturbance of mature trees in the right-of-way.
5. Deed restriction put in place to not permit these new buildings to be converted to duplexes nor add ADUs.

Motion: F. Cullen moved to approve the Transfer of Development Rights with the subsequent conditions set by staff. Seconded by K. Mavrogeorge. Vote: 6-3 with Salovitch, Clark, and DeBoer opposed.

The Vice-Chair announced Items B & C would be heard together.

B. Consideration and acceptance of a Conditional Use Permit for Crosby 180, LLC, Assessor's Map G, Lot 1-A, zoned CM, located at 180 Crosby Road. (Proposal is to allow wetland buffer impacts totaling 1352 s.f. associated with site improvements and the construction of a loading dock addition to the existing facility.) *(COND-2025-0010) *(This item was continued from the June 10, 2025 Planning Board Meeting.)*

C. Consideration and acceptance of a Site Plan for Crosby 180, LLC, Assessor's Map G, Lot 1-A, zoned CM, located at 180 Crosby Road. (Proposal is to construct a loading dock addition to an existing manufacturing facility, along with site improvements.) *(SITE-2025-0005) *(This item was continued from the June 10, 2025 Planning Board Meeting.)*

D. Benton explained that the Applicant is proposing a 1,620-square-foot loading dock addition at 180 Crosby Road, along with related site improvements. The improvements include expanded pavement for truck access, removal of some paved areas, and replacing a culvert at the site entrance.

The applicant is also requesting a Conditional Use Permit as the project includes approximately 1,352 square feet of wetland buffer impacts, mostly in already paved areas, due to the loading dock construction and culvert replacement. As part of the proposal, around 966 square feet of impervious surface in the buffer will be restored to green space.

The applicant has requested two waivers: one from providing a signed landscape plan and another from submitting a colored streetscape rendering.

The Technical Review Committee reviewed the project on May 15 and the Conservation Commission endorsed the CUP proposal at a special meeting on June 16.

Steve Haight, CivilWorks NE, represented the application and explained the existing property is a manufacturing facility and the proposal is to put on a loading dock. It will be constructed and installed on an existing paved area. He described areas of added pavement and decreased paved area to off-set. This project has gone to TRC and Conservation Commission. As part of the project a culvert will be added, and dumpsters will be relocated from the front to the back of the property. The CUP is for pavement impacts. He explained the reasons for the waivers are: landscape plan not needed because the work is in the back of the building and no streetscape rendering needed because nothing is changing out front.

Mr. Haight addressed board comments relating to truck maneuvers.

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

Public hearing opened.
Bill McQuade, 187 Crosby Rd expressed concerns about the storm water drainage for the site. He elaborated on his beliefs about this. This industrial park has had drainage issues for years. He handed out photos of the issues which he explained in detail. He suggested a site walk.

An email was received to the office and summarized:
Bill McQuade, owner of neighboring properties within the industrial park, raises concerns about the proposed project at 180 Crosby Road. He suggests that the stormwater management analysis is flawed and does not adequately address potential flooding impacts on surrounding properties, streets, or the existing drainage system. He also challenges the accuracy of the soil classification and notes that the high-water table has not been properly considered.
Public hearing closed.

Mr. Haight addressed public comment:
- Proposed drainage

Mr. Haight addressed board comments and questions
- Drainage/ storage tanks
- Recessed loading dock vs lifts or ramps
- Impervious areas
    - K. Mavrogeorge added input and information to drainage, impervious surfaces and City research and planning for drainage fixes in that area and applicant improvements that will help
- Reasoning for change to pipe material
    - K. Mavrogeorge gave additional information on culvert materials and drainage

STAFF RECOMMENDATION: Wetland Protection District Conditional Use Permit
The Wetlands Protection District ordinance §170.28F provides for Conditional Use Permits to allow impacts to the Wetlands Protection District if standards related to demonstration that no practicable alternative is available, impact avoidance was considered, impacts were minimized, mitigation has been sought, and approval of the wetlands impact from NHDES Wetlands Bureau has been granted.

The project avoids direct wetland impacts, with approximately 1,352 square feet of buffer impacts limited to existing pavement, green space conversion, and culvert reconstruction. Only about 20 square feet of the proposed loading dock falls within the 50-foot wetland buffer. In total, 2,669 square feet of impervious area, including 966 square feet in the buffer, will be converted to green space. Since there are no direct wetland impacts, mitigation and NHDES approval are not required. The Conservation Commission endorsed the proposal on June 9, 2025.

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

1. Approval of (SITE-2025-0005).

Motion: E. Salovitch moved to approve the Conditional Use Permit with the subsequent conditions set by staff. Seconded by G. DeBoer 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 rationale for the waiver meets criterion (1) and waiving such standards and requirements will properly carry out the spirit and intent of the regulations.

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

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

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waivers:
   §153-13.A (12) Landscape plan signed by LLA
   §153-13.A(17), Colored streetscape rendering

Motion: F. Cullen moved to grant the waiver requests with the subsequent condition set by staff as it meets criteria for relief. Seconded by: E. Salovitch. Vote: U/A

STAFF RECOMMENDATION- Site Plan:

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

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Approval of (COND-2025-0010);
2. Revise plans to include updated Fire Department Connection as determined by the Building Official;
3. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   3.1. Owner's signatures;
   3.2. Professional stamps and signatures;

Subsequent Conditions to Be Met Prior to Construction:

4. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;
5. Wetland buffer placards are installed;

Subsequent Condition to Be Met Prior to Building Permit:

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

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Subsequent Conditions to Be Met Prior to Occupancy:

7. Issuance of Certificate of Occupancy;
8. Surety or other form of security acceptable to the City is provided for any unfinished work;
9. Wetland buffer placards are still in place or replaced per the plan;
10. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

Motion: E. Salovitch moved to approve the Site Plan with the subsequent conditions set by staff. Seconded by K. Pimental. Vote: U/A

D. Consideration and acceptance of a Minor Subdivision for 200 Sixth Street, LLC, Assessor's Map E, Lot 70-A, located at 200 Sixth Street, zoned IT. (Proposal is to create one (1) additional lot). *(SUBM-2025-0004)

D. Benton explained that the Applicant is proposing a minor subdivision at 200 Sixth Street to create a new 1.33-acre lot. While the IT District requires a minimum lot size of 2 acres, a variance was granted due to the intended use- a telecommunications switching facility. This type of facility is small, quiet, and unoccupied except for routine maintenance, making the typical lot size requirements less applicable. Because this was a minor subdivision, Technical Review Committee review was not required.

Steve Haight, CivilWorks NE, represented the application and explained the proposal of a subdivision to create a lot for an unmanned communications facility. They received ZBA approval for the reduced lot size. Once approved for the subdivision, they will be back before the board with a site plan.

Mr. Haight addressed comments and questions from the board relating to intended use of the remainder lot and access to it, and necessary DES approvals regardless of use.

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

Public hearing opened.
No one spoke
Public hearing closed.

STAFF RECOMMENDATION- Minor Subdivision
The plan is consistent with §157-15 of the City of Dover's Land Subdivision Regulations, which provides for subdivision of existing lots.

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 Country Registry of Deeds, which additionally shall include:
   1.1. The owner's signatures;
   1.2. Include the Planning File #SUBM-2025-0004;
   1.3. The stamp and signature of the LLS on the final plans;
   1.4. Confirm lot numbering with City Assessor and confirm on plan set;
   1.5. State permit numbers are added to the cover sheet

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2. Any change in use differing from a telecommunication switching facility shall require Planning Board Approval prior to the commencement of any such use.

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

E. Consideration and acceptance of a Lot Line Adjustment for Waterside Land Holdings, LLC and Heath J. Todd Revocable Trust, Assessor's Map M, Lots 91-E & 104, zoned R-40, located off Middle Road. (Proposal is to adjust the land amounts from M-91-E to M-104.) *(LOTA-2025-0006)

D. Benton explained that the Applicant is proposing a lot line adjustment to revise the lot lines between two abutting vacant properties both located on Middle Road, with the intent of adding approximately 69,954 square feet from Lot 91-E to Lot 104, with frontage values for both lots remaining the same as pre-adjustment. The item did not require TRC review.

Steve Haight, CivilWorks NE, and Chad Kageleiry, owner, represented the application and explained the two very large lots are requested to have the lot lines adjusted to give wider access to one of the lots. Both lots far exceed the lot size requirements and there is no construction proposed on the conservation lot.

Mr. Haight and Mr. Kageleiry addressed comments and questions related to the timeline of the creation of the lots and reason for being back at Planning Board.

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

Public hearing opened.
No one spoke
Public hearing closed.

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-2025-0006
    b. The owner's signatures

Mr. Kageleiry addressed questions from the board about access to a portion of the conservation area open to the public.

Motion: F. Cullen moved to approve the Lot Line Adjustment with the subsequent conditions. Seconded by G. DeBoer. Vote: U/A

F. Consideration and acceptance of a Site Plan for Hoyle, Tanner and Associates, Inc., (Owner: Del Sol Dover, LLC), Assessor's Map G, Lot 2-1B, zoned CM, located off Crosby Road. (Proposal is to construct a ground-mounted solar facility with a gravel access drive.) *(SITE-2025-0004)

D. Benton explained that the Applicant is proposing a ground-mounted solar facility on Crosby Road, which will include a gravel access drive and turnaround. Also, about 1.72 acres of the property will be deed-restricted for wildlife conservation in coordination with NH Fish and Game. The project utilizes a Development Agreement and industrial TDR to allow relief from certain wetland buffer requirements. Four waivers are being requested for architectural plans, streetscape renderings, a traffic impact assessment, and underground utilities. The Technical Review Committee reviewed the proposal on May 8, 2025.

Josh Howard, Hoyle, Tanner and Assoc represented the application and explained the proposal for the solar facility of ground-mounted, fixed-tilt panels, security fencing, two storm water ponds and a gravel access road. He explained the storm water treatment on site. The applicant went to TRC and will obtain approvals from NHDES.

Chad Kageleiry, owner addressed questions from the board relating to status of inter-connection with Eversource, energy distribution from the solar power, changes to the proposal related to the Alteration of Terrain permit application, visibility of the structure and screening, maintenance of the landscaping and board suggestions of mowing at times of year to avoid ground-bird nesting and avoid mowing at dusk, and utility location overhead.

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

Public hearing opened.
Lisa Nugent, 69 Littleworth Rd asked some questions about height of the panels, permitted use or not, ownership, utilities above or below ground and relation to the project that was heard on June 10th.
Public hearing closed.

Mr. Kageleiry addressed public comment:

- Utilities will be underground where the panels are, then a pole will be added to bring the power up and connect it to the grid and existing poles
- Ownership is the same, just different company names

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

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

Planning Staff believes the applicant's rationale for the waiver meets criterion (1) and waiving such standards and requirements will properly carry out the spirit and intent of the regulations.

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

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

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waivers:
   §153-13A(15), Color architecturals
   §153-13A(17), Streetscape Rendering
   §153-13A(19), Traffic impact assessment
   §157-44, Underground utilities

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

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

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   1.1. Owner's signatures;
   1.2. Professional stamps and signatures;
   1.3. Permit numbers as they are received;
2. Coordinate with the Building Official to obtain an assigned address for the property;
3. Provide confirmation of an interconnection agreement with Eversource;

Subsequent Condition to Be Met Prior to Construction:

4. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;

Subsequent Condition to Be Met Prior to Building Permit:

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

Subsequent Conditions to Be Met Prior to Occupancy:

6. Issuance of Certificate of Occupancy or Certificate of Completion;
7. Surety or other form of security acceptable to the City is provided for any unfinished work;
8. Wetland buffer placards are still in place or replaced per the plan;
9. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

The board discussed with the applicant a decommissioning plan and timeframe.

Motion: T. Clark moved to approve the Site Plan with the subsequent conditions set by staff. Seconded by G. DeBoer. Vote: U/A

G. Consideration and acceptance of a Site Plan Amendment for Saint Thomas Aquinas High School & Roman Catholic Bishop of Manchester, Assessor's Map L, Lot 15, zoned R-20, located at 197 Dover Point Road. (Proposal is for the construction of a 6,306 s.f. chapel addition.) *(WAIV-2025-0007)

D. Benton explained that the Applicant is proposing a 6,300-square-foot chapel addition to St. Thomas Aquinas High School. It will be located on the west side of the building, in an area currently used for walkways and a lawn area, and won't be visible from Dover Point Road. There are no proposed changes to

roads or parking. One waiver is being requested for a traffic impact assessment, as there's no expected change in traffic. The Technical Review Committee reviewed the application on June 5, 2025.

Paul Miller, Oak Point Assoc. represented the application and explained the proposal noting it's an addition to the back of the school and not very visible. There will be no change to driveways, parking areas, school occupancy, or utilities. He addressed storm water.

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

Public hearing opened.
Robert Gosse, 10 Royer Ln, asked if there will be any ledge removal or blasting and if so that the abutters are notified and there is a meeting ahead of time. He requested no construction traffic on Royer Ln. The City just repaved that road. Will the chapel be used for any purposes outside of school such as wedding ceremonies? He requested screening of an 8' fence to block the parking lot from his home. There is not enough screening and the lights are bleeding through more with added fields and evening activities.

Abe McGuire, 44 Ayers Ln, abutter requested the construction hours to exclude weekends, he is concerned about the proposed bell tower and is unsure how it might affect the neighborhood and without knowing the schedule it will be used. He also prefers restricting use of construction vehicles to exclude Royer rd.

Skip Kneirim, 45 Ayers Ln, agreed with the previous speaker. There has been increased noise levels, light spillover, track runners up and down the street. He is concerned about knowing the bell noise type and schedule. He works from home and if the noise is more of a drone of background noise that's one thing, but if it is a loud, repetitive noise throughout the day and weekends that would be very obtrusive. He also is concerned about the light spill.
Public hearing closed.

Mr. Miller and Brian LaRoche, architect with Oak Point Assoc. addressed public comment:

- There will be no ledge removal or blasting
- Bell tower usage
    - Acoustic consultant
    - 70 decibels at ground level
        - Should match the level of traffic on Dover Point rd
    - Bell rings 2-3 times a day
        - Beginning and end of school day (8am and 2:45pm) and weekly mass (10am)M-F
- Construction hours
    - D. Benton reviewed Dover's policies and suggested an edit to the condition to include M-F and no Saturdays, Sundays or Federal Holidays. This does not include hammering etc. It is for large construction vehicles.
- Construction vehicle access
    - Staff agreed they will also require no access off Royer rd since it was just paved
- Chapel use is for the school primarily. He can't speak to the future
- Fencing has not yet been discussed

Board members asked clarifying questions about and discussed:

- what the current bell system decibels are (unknown, but was part of the research)
- fence for additional light screening

Extensive discussion occurred about the screening options.

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

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

Planning Staff believes the applicant's rationale for the waiver meets criterion (1) and waiving such standards and requirements will properly carry out the spirit and intent of the regulations.

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

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

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waiver:
   §153-13A(19), Traffic impact assessment

Discussion occurred related to possible future change of use of the chapel for operations and events on weekends and impacts to traffic. Use of Royer Ln clarifications- always fenced unless loading robotics. Due to the waiver request to not do a traffic study, discussion occurred related to possible future use changes and what recourse is available to the City if traffic patterns change.

Motion: F. Cullen moved to grant the waiver requests with the subsequent condition set by staff as it meets criteria for relief. Seconded by: G. DeBoer. Vote: U/A

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

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Revise plans to include Planning File # WAIV-2025-0007;
2. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   2.1. Owner's signatures;
   2.2. Professional stamps and signatures;
   2.3. Revise note 14 to include no Saturday/Sunday/Federal Holiday site construction hours
   2.4. Add note to keep construction vehicles off Royer Ln
   2.5. Add a 6' wood or white vinyl privacy fence placed between the trees and Royer Ln
3. Confirm turning template with Dover Fire Department.
4. Submit acoustic study comparing baseline levels of sound and ___ compared to new bell tower to confirm the new bell tower is similar to existing school sounds ie cheering crowds, sirens, route 16 traffic etc.

Subsequent Condition to Be Met Prior to Construction:

5. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;

Subsequent Condition to Be Met Prior to Building Permit:

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

Subsequent Conditions to Be Met Prior to Occupancy:

7. Issuance of Certificate of Occupancy;
8. Surety or other form of security acceptable to the City is provided for any unfinished work;
9. Wetland buffer placards are still in place or replaced per the plan;
10. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

Extensive discussion occurred about the sound and selection of the bell and the acoustic study which has not been provided.

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

5. STAFF COMMENT

- Summer schedule
- TRC items since last meeting:
    - June 12th: Site Plan, proposal is for the construction of a light industrial building off of Littleworth Road.
    - June 12th: Site Plan, proposal is for the conversion of the Liberty Mutual office building at 150 Liberty Way to a mixed-use building with commercial, office, and residential units.
- Upcoming TRC items:
    - June 26th: Site Plan Amendment, proposal to amend Building 2 of the previously approved McIntosh Drive development. Proposal includes 20 additional residential units in Building 2.
    - June 26th: Site Plan Amendment, proposal to amend Building F, as part of the waterfront development. Proposal includes architectural changes, 20 additional parking spaces, and an increased building footprint.
- City of Dover sends abutter notices. The signs that are put up are an additional notification, but are not required by state statute. There are meeting preview videos and all available information is on the website. TDR funds go to both fund the conservation planner position and the purchase of land to conserve.

6. MEMBER COMMENTS

- D. Glennon
    - If the public ever wants to see the full-sized plans, they can contact the Planning Department and staff will assist them.

7. ADJOURNMENT

Motion: D. Glennon to adjourn at 10:00 p.m. Seconded by K. Mavrogeorge. Vote: U/A

DRAFT

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #TRAN-2025-0001

Application Type:	Transfer of Development Rights
Applicant(s):	25 Dover Point, LLC
Owner(s):	25 Dover Point, LLC
Location:	25 Dover Point Rd. (Assessor's Map K, Lot 35)
Meeting Date:	July 22, 2025

INTENT: To request the purchase of six (6) units through the Transfer of Development Rights (TDR) for a proposed total of sixteen (16) units, where ten (10) two-family units are allowed by right through the TDR formula. *(This item was tabled at the June 10, 2025 Planning Board Meeting)*

AGENDA ITEM #: 4-A

APPLICANT/OWNER: 25 Dover Point, LLC

LOCATION: 25 Dover Point Rd. (Assessor's Map K, Lot 35)

LOT/UNITS PROPOSED: 16 total (6 units via TDR)

ACREAGE: ±2.58 ac.

ZONING DISTRICT: R-12

EXISTING USE: Residential

PROPOSED USE: Residential

SURROUNDING USE: Residential, Commercial

ZBA ACTION: N/A

PERMITS: N/A

WAIVERS REQUESTED: None proposed as part of this TDR application.

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

TRC: N/A

ATTACHMENTS: TDR Site Plan, TDR Application, Narrative

Summary of Request and Background

The applicant is proposing a residential project consisting of 16 units total, 6 of which are proposed to be purchased via TDR. The units are proposed as eight two-family structures on the ±2.58 ac. parcel.

The existing lot, Assessor's Map K, Lot 35, currently contains one single-family dwelling. All existing structures on the property are proposed to be removed. This is a revised proposal from the previously considered version at the June 10, 2025 Planning Board meeting which proposed 21 condominium units total, 14 of which were proposed to be purchased via TDR.

The current Zoning Ordinance permits the use of the Transfer of Development Rights ordinance (TDR) in the R-12 zone and specifies that the applicant must apply the yield calculation method for determining the site's base density (unit count) capacity. The applicant has applied two-family density to sufficiently prove that the lot's base density for two-family structures is 10 units. By using two-family density, any TDR-purchased unit must be a duplex.

Staff has reviewed the revised proposal and supplied a new TDR memo to the applicant.

Consistency with Land Use Regulations - TDR

§170-29 provides for additional density to be purchased through Transfer of Development Rights, provided that four criteria are met: The proposal is consistent with the Master Plan; is compatible with the land uses on neighboring lots; is created on property served by public water and sanitary sewer; and not seeking permitted relief caused by additional density.

The applicant has continued to identify consistency with Master Plan Land Use Goal LU 2.1, which encourages increased density on vacant or underdeveloped parcels in already well-developed areas, in order to support the broader goal of preserving the community's more rural lands.

Staff appreciates the continued inclusion of a 30-foot perimeter buffer but with the placement of the emergency vehicle turnaround and perimeter units, staff would expect to see additional screening in the final design. Staff also appreciates the absence of any disturbance to the Wetland Protection and Conservation Districts.

Staff notes that the current version of the plan reflects a revision to the building layout, the change to two-family structures, and the reduced unit count. Staff appreciates these adjustments and continued refinement to further align the project with the character of the neighborhood. As provided previously for reference, within the neighboring Village Drive Open Space Subdivision, the closest structure is a single-family home which is approx. 145 feet from the front boundary line, and has a total of 12 units on a similarly sized lot which incorporates green landscaped space in place of extensive impervious surfaces.

Staff acknowledges that the subject parcel is served by municipal water and that a draft Sewer Line and Maintenance Easement has been submitted for the City's

review, which would allow for municipal sewer access from Assessor's Map K, Lot 34 for the benefit of Assessor's Map K, Lot 35.

With respect to density, staff appreciates the applicant's efforts in meeting staff recommendations but still has reservations on the number of units and still asserts that 12-14 units maximum is more fitting.

Staff recognizes that this area serves as a transitional area between established single-family neighborhoods and more dense or commercial development. With that in mind, staff believes a balanced approach, one that falls between the densities of the two abutting developments, would offer a more appropriate fit and support a smooth transition between the R-12 district and the R-20 district across the street.

An average of the adjacent development ratios equates to approximately one unit per approximately 8,626 square feet of developable land. The revised proposal includes an approximate ratio of 1 unit per ±7,893 square feet of developable land (sixteen units). Applying the average ratio to the subject parcel suggests a maximum of about 14 units. This represents 200% of the site's base density, (7 units), which staff views as a more appropriate increase than what was requested, and that still maintains neighborhood compatibility. For these reasons, staff would be more supportive of a proposal in the range of 12-14 units, with a layout and design approach similar to Village Drive.

STAFF RECOMMENDATION - TDR:
The Planning Department recommends that the Planning Board accept the application as complete, as all required materials have been submitted and reviewed for completeness. Staff further recommends that the Board open the public hearing, make findings, and vote to allow up to 14 units on site by removing one of the existing duplex structures to provide for more open space and flexibility for the design/engineering and more compatibility with the neighborhood context.

Should the Board feel comfortable with the proposed 16 total units, staff recommends the Board add the following subsequent conditions:

Subsequent Conditions prior to Granting TDR:

1) The Planning Board may decrease the number of TDR units granted after seeing a fully engineered/designed site plan.
2) A site plan is reviewed and endorsed by the Technical Review Committee and reviewed and conditionally approved by the Planning Board.
3) Payment of TDR fees.
4) A note added to the site plan that existing structures will be razed or existing single-family house may be converted in lieu of a proposed duplex structure.
5) A note be added to final site plan including the TDR relief granted.
6) Sewer easement/connection is acceptable to the City Engineer related to flow capacity and legal ability according to the City's legal counsel.

To: Civilworks NE
From: Donna Benton, AICP
Cc: 25 Dover Point, LLC, Applicant
Date: July 17, 2025
Re: TDR 25 Dover Point Rd.

ISSUE:
In February 2020, the Board recommended amendments to the Transfer of Development Rights (TDR) Ordinance. In June 2020, the Planning Board approved the amendments and on July 22, 2020, the City Council ratified them. One element is the requirement for staff to draft a review statement on the need for a sketch plan. Since then the criteria for TDR has also been amended.

INTENT:
This memo will serve as part of the staff report.

GOALS:
Provide background on balancing development vs. conservation needs and current housing shortage, and describe the TDR applications in Dover.

Background
On behalf of your client, you submitted a revised TDR plan for a project consisting of sixteen two-family units, six of which are proposed to be purchased via TDR. All existing structures on the property are proposed to be removed. This is revised from a previous version that proposed 21 condominium units total, 14 of which were proposed to be purchased via TDR.

The subject parcel, Assessor's Map K, Lot 35, is within the Medium Density Residential (R-12) District whose current development consists of one single-family home and two outbuildings. The current Zoning Ordinance permits TDR in the R-12, but specifies that the applicant must either use single-family density, or, if using two-family density, any TDR-purchased unit must be a duplex.

All two-family dwellings are being proposed and the TDR yield calculation has been revised to account for this. The base density value, utilizing the two-family density calculation, was determined as ten units by right on the property. This, therefore, means that the remaining six sought units (three two-family structures) are being proposed through purchase with TDR.

Staff performed this review based upon the information below, and is now providing the required staff report (Chapter 170-29 E.(4)a).

Project Information

Project:	25 Dover Point Rd., TDR
Where:	25 Dover Point Rd. (Assessor's Map K, Lot 35)
What:	Sixteen (16) units total. Six (6) of which are requested to be purchased through TDR. The density calculation per R-12 specific zoning regulations, as stated above, was used to determine a base density calculation of ten (10) units, requiring the purchase of six (6) proposed units.
Acres:	±2.58 ac. (or 112,384 square feet)
Zone:	R-12
Public Water:	Lot is served by municipal water.
Public Sewer:	A draft has been supplied for review by the city for a Sewer Line and Maintenance Easement that would provide utility access from Assessor's Map K, Lot 34 for the benefit of Assessor's Map K, Lot 35. Staff asserts that the capacity and flow report would be further reviewed by the Technical Review Committee.
Units:	Sixteen (16) total units are proposed, staff considers ten (10) of the units to be the base density requiring the applicant to purchase six (6) TDR units, (these units are required to be within two-family structures).

Staff Comment
When reviewing projects, review the context, discuss options with the applicant, and advise on the feasibility of requesting the purchase or exchange before or after designing a fully laid out plan.

In reviewing this project, we note:

- Traffic
    - Dover Point Road is a high-traffic thoroughfare connecting downtown Dover to the Spaulding Turnpike, provides access to commercial and residential areas like Pointe Place, and has few alternate routes, making it a key corridor for local and regional travel.

- Layout/topography
  - The lot currently holds one single-family home with two outbuildings. These structures are proposed to be demolished. To the north of the property, there are single-family homes and duplexes on varying lot sizes, to include the Village Drive Open Space Subdivision, to the south lies the Sheffield Drive mixed-use development, with the Spaulding Turnpike to the rear (southwest) of the lot.
  - The applicant is proposing a ratio of 1 unit per ±7,893 square feet of developable land (sixteen units).
  - The cumulative lot coverage of the proposed structures is approximately 9% (though building size would need to be confirmed). As a reference, the maximum lot coverage requirement for the underlying R-12 District is 30%.

- Environmental
  - Currently, the entire property is moderately wooded. Per the applicant's submitted plan, the majority of the lot's interior will be clear cut, with trees remaining along the northern, southern, and western property boundaries, due to the inclusion of a 30' no-cut, no-disturb buffer. There is a small area of the proposed emergency vehicle turnaround that would extend into this buffer area but would not require relief because the applicant has not proposed new property boundaries.
  - The structures depicted nearest to the front property boundary are set back approximately 50' from Dover Point Road.
  - The rear property boundary also includes ≥20% slopes, as well as delineated wetland and associated 50' buffer, though this project will not impact any and is therefore not subject to a Conditional Use Permit based off this plan.
  - The R-12 District is characterized by its medium density, requiring a minimum lot size of 12,000 square feet, 100 feet of frontage, and a maximum underlying density of 2 units per lot, with varying lot size requirements for 2-family structures, depending on whether they're newly constructed, or converted from an existing single-family home.

Staff Recommendation

Staff appreciates the decrease in residential units and impervious surface coverage from prior iterations of this proposal. The updated design, which includes a decrease in total units and two-family structures, reflects a stronger alignment with surrounding development patterns, including neighboring projects like the Village Drive Open Space Subdivision.

The continued inclusion of a 30-foot perimeter buffer is appreciated but with the placement of the emergency vehicle turnaround and perimeter units, staff would expect to see additional screening in the final design. Staff also requests confirmation on the structure footprints, and clarification on any potential restrictions related to unit size and rental rates.

Finally, staff appreciates the submission of the draft Sewer Line and Maintenance Easement for City review. The legal ability to connect and the flow calculations still need to be determined as acceptable by other City staff which can occur during the TRC process.

Staff continues to assert that 12-14 units is more compatible with that neighborhood and would provide a better design on the lot.

TRAN-2025-0001 25 DOVER POINT

Property Information

Location	25 DOVER POINT RD
Owner	25 DOVER POINT LLC
Land Use	101R
Zoning Code	R-12
Property Id	K0035-000000

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 TRAN-2025-0001
FOR CITY OF DOVER, N.H.

Plan Type:	Transfer	**Project:**		**App Date:**	03/17/2025
Work Class:	Transfer of Development Rights	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Proposed 21 Unit Residential TDR Development with Municipal Water & Sewer

Parcel:	K0035-000000 Main	**Address:**	25 Dover Point Rd Main Dover, NH	**Zone:**	R-12(Residential - Medium Density)

Owner
Zachery Leavitt
Mobile: (603) 501-9107

Applicant
McEneaney Survey Associates
P.O. Box 1166
DOVER, NH 03821
Business: (603) 742-0911

Plan Custom Fields

Parcel Map/Lot	K/35	Parcel Zoning Overlay		Parcel Zoning	R-12
trandevdetail	To allow a total of 25 units where 8 units are permitted by right per single family calculations. Units will be attached, three buildings with 6 units and two buildings with 4 and 3 units, respectively, served by municipal water and sewer. No impacts to wetlands or wetland buffers are proposed.	Deed Book	2080	Deed Page	1
Property Address	25 Dover Point Road	Deed Date		Owner Name	25 Dover Point, LLC
Existing Parcel Size (Ac)	2.92	Owner Address	99 Columbus Avenue Dover, NH 03820	Owner Phone	603-501-9107
Existing Parcel Size (sqft)	127195	Owner EMail	leavittzachery@gmail.com	Parcel Feedback	
Reference Plan ID Number:		Request Type	Purchase	trandevpermits	N/A
Project Zone	Residential	Quantity of Non-Restricted Units	17	Relief Sought	Unit increase

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Kevin_McEneaney_3/17/2025.jpg	03/17/2025 17:40	McEneaney, Kevin		Uploaded via CSS
2024.04.22_PlanningBoard.Agenda.Revised.pdf	04/10/2025 16:41	Blonigen, Rachel		PB Agenda
25 Dover Point TDR Memo.pdf	04/17/2025 17:05	Blonigen, Rachel		TDR Memo
PB4-22-2025 TRAN-2025-0001.pdf	04/17/2025 17:05	Blonigen, Rachel		Staff Memo
Continuance 04.22.2025 meeting.pdf	04/21/2025 15:57	Blonigen, Rachel		Request for Continuance
2024.05.27_PlanningBoard.Agenda_Final.0.pdf	05/15/2025 15:40	Blonigen, Rachel		PB Agenda
2025.04.22 PlanningBoard.Minutes.pdf	05/16/2025 15:03	Blonigen, Rachel		Final PB Minutes
Continuance.pdf	05/16/2025 15:33	Blonigen, Rachel		Continuance Request

PLAN SNAPSHOT REPORT (TRAN-2025-0001)

Invoice No.	Fee		Fee Amount	Amount Paid
INV-2025011662	Planning Transfer of Dev Rights Application Fee		$200.00	$200.00
		Total for Invoice INV-2025011662	**$200.00**	**$200.00**
INV-2025011967	Planning Certified Mailing to Abutters		$170.00	$170.00
	Planning Public Notice in Newspaper		$120.00	$120.00
	Planning Creation / Printing of Abutter Labels		$20.00	$20.00
		Total for Invoice INV-2025011967	**$310.00**	**$310.00**
NOT INVOICED	Transfer of Dev Rights Fee - Non-Restricted		$255,000.00	$0.00
		Total for Invoice NOT INVOICED	**$255,000.00**	**$0.00**
		Grand Total for Plan	**$255,510.00**	**$510.00**

Activity Type	Activity Number	Name	Workflow Action Name	User	Created On
Recommendation to Planning Board	RCMND-000028-2025		Planner Creates Staff Recommendations v.1.00	Rachel Blonigen	04/10/2025

Activity Custom Fields

Agenda Item	4-D	Application Complete?	Yes	Summary Request & Background	INTENT: To request the purchase of eighteen (18) units through the Transfer of Development Rights (TDR) for a proposed total of twenty-five (25) units, where seven (7) units are allowed by right. AGENDA ITEM #: 4-D APPLICANT/OWNER: 25 Dover Point, LLC LOCATION: 25 Dover Point Rd. (Assessor's Map K, Lot 35) LOT/UNITS PROPOSED: 25 total (18 units via TDR) ACREAGE: ±2.58 ac. ZONING DISTRICT: R-12 EXISTING USE: Residential PROPOSED USE: Residential SURROUNDING USE: Residential, Commercial ZBA ACTION: N/A PERMITS: N/A WAIVERS REQUESTED: None proposed as part of this TDR application. APPLICATION IS COMPLETE: Yes REGIONAL IMPACT: No NOTICES SENT: Abutter notices were sent by certified mail to all abutters. TRC: N/A ATTACHMENTS: TDR Site Plan, TDR Application, Narrative Summary of Request and Background The applicant is proposing

a residential project consisting of 25 condominium units total, 18 of which are proposed to be purchased via TDR. The units are spread across 5 separate buildings on the ±2.58 ac. parcel.
The existing lot, Assessor's Map K, Lot 35, currently contains one single-family dwelling. The current Zoning Ordinance permits the use of the Transfer of Development Rights ordinance (TDR) in the R-12 zone and specifies that the applicant must apply the yield calculation method for determining the site's base density (unit count) capacity. The applicant has sufficiently proven that the lot's base density is 7 units, and as the project seeks a total of 25 units, the applicant is proposing the purchase of 18 unrestricted TDR units.

Staff has reviewed the proposal and supplied a TDR memo to the applicant.

Consistency with Land Use Regulations - TDR §170-29 provides for additional density to be purchased through Transfer of Development Rights, provided that four criteria are met: The proposal is consistent with the Master Plan; is compatible with the land uses on neighboring lots; is created on property served by public water and sanitary sewer; and not seeking permitted relief caused by additional density.

In Staff's opinion, this application is deficient in addressing several of these criteria. First, this proposal distinguishes itself from projects at adjacent parcels in several regards. In reviewing the residential and mixed-use development at Sheffield Drive, staff notes that it is a mixed-use development and not strictly residential. Secondly, the vast majority of all residential units across the 3 parcels comprising the development are set back at least 150 feet from the front property line. This proposal places 15 of the 25 sought units within that same 150 feet in addition to a 9-space parking lot. While the R-12 district does have a build-to-line requirement, the extra density on the Sheffield lot is hidden behind the building along Dover Point Road. Then, on the opposing side at Village Drive, the closest structure is a single-family home which is approx. 145 feet from the front boundary line. That development is setback and consists of duplexes and single-family units, both of which are allowed by right in the R-12 district. That Village Drive lot is of similar size to the subject lot and has a total of 12 units with green landscaped space provided rather than a sea of impervious area.

Regarding the third criteria listed at the end of the TDR ordinance, while the applicant has noted that they have physical ability to access municipal water and sewer, the applicant still has not provided sufficient information on how sewer is available to this site or otherwise demonstrate the legal permissions to access municipal water and sewer as the only possible access hinges on the approval of the neighboring parcel, 50 Sheffield Dr., Map K, Lot 37. If it is through a private agreement with the abutter, an official written correspondence shall be provided to staff and the Planning Board to help ensure this criterion is indeed being satisfied.

PLAN SNAPSHOT REPORT (TRAN-2025-0001)

Recommendation to Planning Board	RCMND-000036-2025	Planner Creates Staff Recommendations v.1.00	Rachel Blonigen	05/15/2025

Hearing Type	Location	Scheduled Date	Status	Subject
Planning Board Hearing v.1	Council Chambers	04/22/2025	Continued	TDR

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		03/24/2025 14:43	03/24/2025 14:43
Confirm application complete v.1	Generic Action		03/24/2025 14:43
~~Technical Review Committee Meeting Agenda v.1~~	Task		03/24/2025 14:43
~~Land Use Plan Technical Review v.1~~	Receive Submittal		03/24/2025 14:43
~~Technical Review Committee Meeting v.1~~	Hold Meeting		03/24/2025 14:43
Planning Board v.1		04/21/2025 15:37	
Planning Board Agenda v.1	Task	04/21/2025 15:37	05/15/2025 15:40
Planning Board Agenda v.1	Task	03/24/2025 14:43	04/10/2025 16:39
Invoice for Notices v.1	Task	04/10/2025 16:39	04/10/2025 16:40
Invoice for Notices v.1	Task	05/15/2025 15:39	05/15/2025 15:40
~~Send Notices v.1~~	Task		05/15/2025 15:39
Send Notices v.1	Task	04/10/2025 16:39	04/10/2025 16:40
Planner Creates Staff Recommendations v.1	Plan Activity	04/10/2025 16:40	04/17/2025 17:17
Planner Creates Staff Recommendations v.1	Plan Activity	05/15/2025 15:40	
Distribute Planning Board Materials v.1	Task		
Distribute Planning Board Materials v.1	Task	04/17/2025 17:17	04/18/2025 13:23
Planning Board Hearing v.1	Hold Hearing	04/17/2025 17:17	04/21/2025 15:34
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
~~Planning Board Decision v.1~~	Plan Activity		04/21/2025 15:35
~~NOD Sent to Applicant v.1~~	Create Report		04/21/2025 15:36
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Stamped and Signed v.1	Generic Action		
Recording v.1	Task		
Document Archival v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Major v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
TRANSFER OF DEVELOPMENT RIGHTS APPLICATION

[Revision Date: September 26, 2024]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: 25 Dover Point, LLC Telephone # 603-501-9107

Address of Applicant: 99 Columbus Avenue Dover, NH 03820

E-Mail Address: leavittzachery@gmail.com

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

Address of Property Owner: same

PROPERTY INFORMATION

Assessor's Map # K Lot(s) # 35

Address of Property: 25 Dover Point Road

Zoning District(s) R-12 Overlay District(s) N/A

Existing Use of Property: Residential - Single Family

New impervious area (in s.f.): _____

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

☐ Residential ☐ Residential (reduced size) ☐ Industrial | ☒ Purchase ☐ Land Preservation

Relief sought (Check All That Apply):

☐ Lot Size ☐ Frontage ☐ Setback ☒ Increase by 6 units

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

A 16-unit TDR development per the duplex family calculations is proposed at 25 Dover Point Road, located in the R-12 Zoning District. This property currently has a single-family home with a detached garage and a barn. The proposed development would include the removal of all existing structures to construct 16 units within eight buildings to be served by municipal water and sewer. No impacts to wetlands or wetland buffers are proposed.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: N/A

Name of Professional That Prepared TDR Plans: STEPHEN HAIGHT PE

Address 181 WATSON RD DOVER Telephone #: 603 749 0443

Professional License #: 7998 E-mail address: shaight@cwilworks.me.com

SIGNATURES

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

Signature of Property Owner: [signature] Date: 7/1/25

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

Signature of Agent: [signature] Date: 7/1/25

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: [signature] Date: 7/1/25

CITY OF DOVER TRANSFER OF DEVELOPMENT RIGHTS
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
K	35	25 Dover Point, LLC	99 Columbus Avenue Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen Haight, PE	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
TDR REVIEW SUBMISSION CHECKLIST

[Revision Date: January 5, 2021]

This Transfer of Development Rights Review Submission Checklist is intended to assist the applicant in the planning process of preparing a TDR 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.

If staff indicates the scope of the project requires Technical Review Committee Review, 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 Subdivision/Site plan review requirements. Please refer to the Subdivision/Site Plan Review Regulations for full details.

APPLICANT: 25 Dover Point, LLC File Number: _____

PROJECT TITLE: 25 Dover Point Road

PROPERTY LOCATION: 25 Dover Point Road Tax Map: K Lot: 35

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the engineered/surveyed plan layout	X	
4. Electronic copy of supplementary materials and application	X	
5. 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:	X	
Location map at appropriate scale	X	
Proposed Project name and title and Planning File #	X	
Date and scale	X	
Name and address of owners and/or applicants	X	
Location and widths of existing & proposed easements & right of ways	X	
Location and width of existing and proposed access/egress ways	X	
Existing and proposed buildings and structure locations and access	X	
Minimum building setbacks or build to lines on all lots	X	
Existing and proposed stormwater infrastructure/direction	X	
Neighborhood plan with unit counts	N/A	
Proposed landscaping	N/A	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	X	
Location, material and size of existing and proposed pavement area	X	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	N/A	
All applicable Dover Common Site Plan/Subdivision notes	X	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	TBM	

REVIEWED BY: _____ DATE_____ TRC DATE_____

TRAN-2025-0001 **25 DOVER POINT ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
K0018-002000	16 DOVER POINT RD	DOAN TAM &	DOAN NANCY	16 DOVER POINT RD	DOVER	NH	03820
K0019-C00000	30 DOVER POINT RD	IRVING OILS TERMINALS INC		10 KING SQUARE SOUTH	ST JOHN	NB	E2L0G3
K0026-000000	28 DOVER POINT RD	25 DOVER POINT LLC		99 COLUMBUS AVE	DOVER	NH	03820
K0026-001000	26 DOVER POINT RD	MOUNTAIN SUZANNE MARIE REYNOLDS TRUSTEE	SUZANNE REYNOLDS REVOCABLE LIVING TRUST	26 DOVER POINT RD	DOVER	NH	03820
K0027-000000	24 DOVER POINT RD	MORIN JOHN K &	MORIN MELISSA D	48 HALL RD	BARRINGTON	NH	03825
K0028-000000	22 DOVER POINT RD	FORTUNA DAVIN M &	ASSELTA-FORTUNA CAROLYN	22 DOVER POINT RD	DOVER	NH	03820
K0029-000000	20 DOVER POINT RD	BISHOP BRADFORD G		98 HENRY LAW AVE UNIT 18	DOVER	NH	03820
K0034-000000	19 VILLAGE DR	BREJWO JOSEPH & JANICE CO-TRUSTEES	BREJWO FAMILY TRUST	19 VILLAGE DR	DOVER	NH	03820
K0034-000001	10 VILLAGE DR	LOKKO NII NORTE & ZENOBIA TRUSTEES	THE LOKKO FAMILY REVOCABLE TRUST	10 VILLAGE DR	DOVER	NH	03820
K0034-000002	12 VILLAGE DR	ABELLA RAMONA V		12 VILLAGE DR	DOVER	NH	03820
K0034-000003	14 VILLAGE DR	MAGIROS YANNIS &	MAGIROS PHYLLIS	8 LORD STIRLING DR	PARSIPPANY	NJ	07054
K0034-000004	16 VILLAGE DR	ROMAN MATTHEW P & HEATHER L TRUSTEES	ROMAN MATTHEW AND HEATHER L REV LIV TRUS	16 VILLAGE DR	DOVER	NH	03820
K0034-000005	18 VILLAGE DR	CLARK BRIGHAM		18 VILLAGE DR	DOVER	NH	03820
K0034-000006	20 VILLAGE DR	WYRSCH CHRISTINE M &	WYRSCH STEVEN	20 VILLAGE DR	DOVER	NH	03820
K0034-000012	VILLAGE DR	PAOLINI BROTHERS DEVELOPMENT LLC		15 BRIARWOOD LN	DOVER	NH	03820
K0036-000000	31 DOVER POINT RD	31 33 DOVER POINT RD CONDOMINIUM	PAOLINI ROBERT TRUSTEE AND WILKINSON STE	15 BRIARWOOD LN	DOVER	NH	03820
K0036-000031	31 DOVER POINT RD	VELASCO-SHEN MICHAEL		107 TOWER ST APT 3	LACONIA	NH	03246
K0036-000033	33 DOVER POINT RD	WILKINS SARAH ELISABETH		33 DOVER POINT ROAD	DOVER	NH	03820
K0037-000000	50 SHEFFIELD DR	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
K0035-000000	25 DOVER POINT RD	25 DOVER POINT LLC		99 COLUMBUS AV	DOVER	NH	03820
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY	PO BOX 1166	DOVER	NH	03820

CIVILWORKS NEW ENGLAND
181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

TDR NARRATIVE
25 DOVER POINT ROAD
TAX MAP K, LOT 35

A 16-unit TDR development is proposed at 25 Dover Point Road, located in the R-12 Zoning District. This property currently has a single-family home with a detached garage and a barn. The proposed development would include the removal of all existing structures to construct 16 units within eight buildings.

The TDR unit calculations are based on the Duplex Method.

Total Parcel Area		127,380 s.f.
Unsuitable Area	-	1,100 s.f.
		126,280 s.f.
Deduct for Roadways		x .85%
		107,338 s.f.
Wetland Factor (0 - 10%)		x .85%
		91,237 s.f.
/9,000 per Duplex		9,000
Units by Right		10 (10.1)

10 duplex units allowed by right, 6 units to be purchased for a total of 16 units.

170-29. G. Transfer of Development Rights, Residential Performance Standards

(8) Regardless of the method utilized, any other provision in this chapter to the contrary, the density or intensity of development of a receiving parcel may be increased by the transfer of development rights so long as the increase in density or intensity meets the following criteria and a narrative is submitted indicating how those criteria are met:

(a) Is consistent with the Master Plan.

The proposed project follows the Master Plan Land Use Goal (LU 2.1) which encourages increased density for vacant or underdeveloped parcels in areas that are currently well developed to promote the goal of maintaining more rural areas for the community.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
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(b) Is compatible with the land uses on neighboring lots (e.g., a multifamily building fits in within a single-family neighborhood). The applicant shall provide in their narrative an explanation of their neighborhood analysis.

The surrounding properties are also within the R-12 Zoning District. Abutting the project parcel to the north is a parcel containing two single-family and five duplex condominium units located on Village Drive. Abutting the parcel to the south is a group of three parcels located on Sheffield Drive, one parcel containing two duplex condominiums, another parcel containing a mixed-use building with office space and 28 residential units, and another parcel with two townhouse buildings containing 8 residential units each.

The properties located directly across Dover Point Road consist of a single-family home, a vacant lot (to be developed by TDR), both within the R-12 Zoning District, and the parcel on the corner of Pointe Place, which is within the C/IT Zoning Districts and currently contains a Circle K gas station/convenience store. The development within Point Place consists of various mixed-use and multi-unit residential parcels.

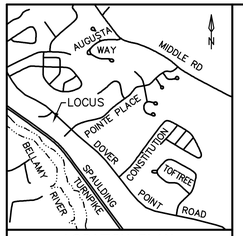
The proposed 16-unit project would be compatible with the various surrounding property uses.

(c) Is created on property served by public water and sanitary sewer.

Municipal water and sewer services are available to this property location.

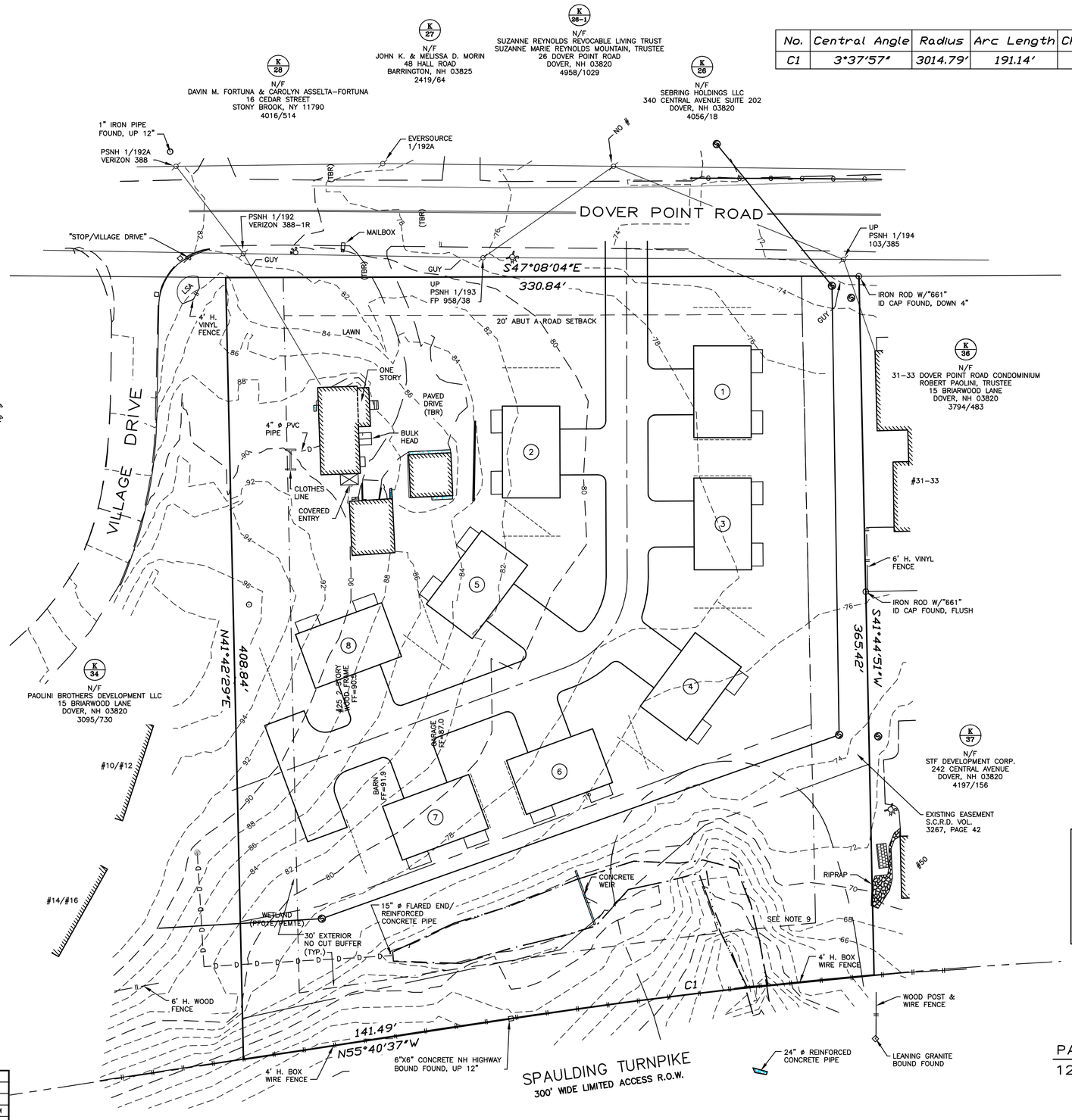
(d) Any relief sought should not be caused by the additional density.

There will be no relief sought from City regulations that are directly caused by the additional density.



LOCATION PLAN
(NO SCALE)

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	3°37'57"	3014.79'	191.14'	191.11'	N53°51'39"W



NOTES:

1.) OWNER OF RECORD:
25 DOVER POINT, LLC
99 COLUMBUS AVENUE
DOVER, NEW HAMPSHIRE
S.C.R.D. VOLUME 5080, PAGE 1

2.) K / 35 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA = 127,380 S.F. / 2.92 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A PROPOSED TDR OPEN SPACE CONTAINING EIGHT (8) DUPLEX FAMILY DWELLINGS, ALONG WITH REMOVING THE EXISTING SINGLE FAMILY DWELLING.

5.) ZONING DISTRICT IS MEDIUM-DENSITY RESIDENTIAL (R12)

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 12,000 S.F.
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 100 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD-TO	= 15-25 FEET
SIDE SETBACK	= 15 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET

6.) THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0434E, EFFECTIVE DATE 9/30/2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83).

8.) ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO ANY WORK BEING PERFORMED. CALL DIGSAFE AT 1-888-344-7233

9.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES ON OCTOBER 8, 2024 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

10.) TDR UNIT CALCULATIONS:

A)	127,380 SF – 1,100 SF (CONSERVATION)	= 126,280 S.F.
B)	126,280 S.F. * 0.85 (ROADS)	= 107,338 S.F.
C)	107,338 S.F. * 0.85 (< 10% FOR WETLANDS)	= 91,237 S.F.
D)	91,237 S.F. / 9,000 S.F. PER DUPLEX	= 10 DUPLEX UNITS BY RIGHT
E)	16 DUPLEX UNITS – 10 BY RIGHT THUS ALLOWING FOR 16 UNITS.	= 6 TDR DUPLEX UNITS

11.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING 2024 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

12.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.

13.) THE SOIL TYPES ON THE SITE ARE:
BzB BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES
CfB CHARLTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
CfC CHARLTON FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES
WdE WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
WfB WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 0 TO 8 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

K / 35

PARCEL AREA
127,380 S.F.
2.92 Ac.

16 UNIT PROPOSED TDR CONCEPT
PREPARED FOR
25 DOVER POINT, LLC
TAX MAP K, LOT No. 35
25 DOVER POINT ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

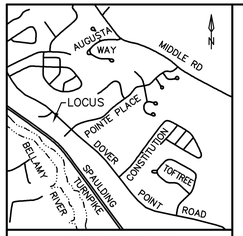
DOVER PLANNING FILE No.

DRAWN BY: RJM	FILE: 2504\D\2504 CONCEPT TDR
SCALE: 1" = 30'	DATE: JULY 3, 2024

30 15 0 15 30 60 90 120

NO.	DATE	DESCRIPTION	BY	CHK
1	6/30/25	ADD TDR CALCULATIONS, NOTE 10 & REVISE DRIVES	RJM	KMM
CNE 23043		REVISIONS		
23-2504		TDR		
PROJECT NO		TYPE	FIELDBOOK & PAGES	

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING



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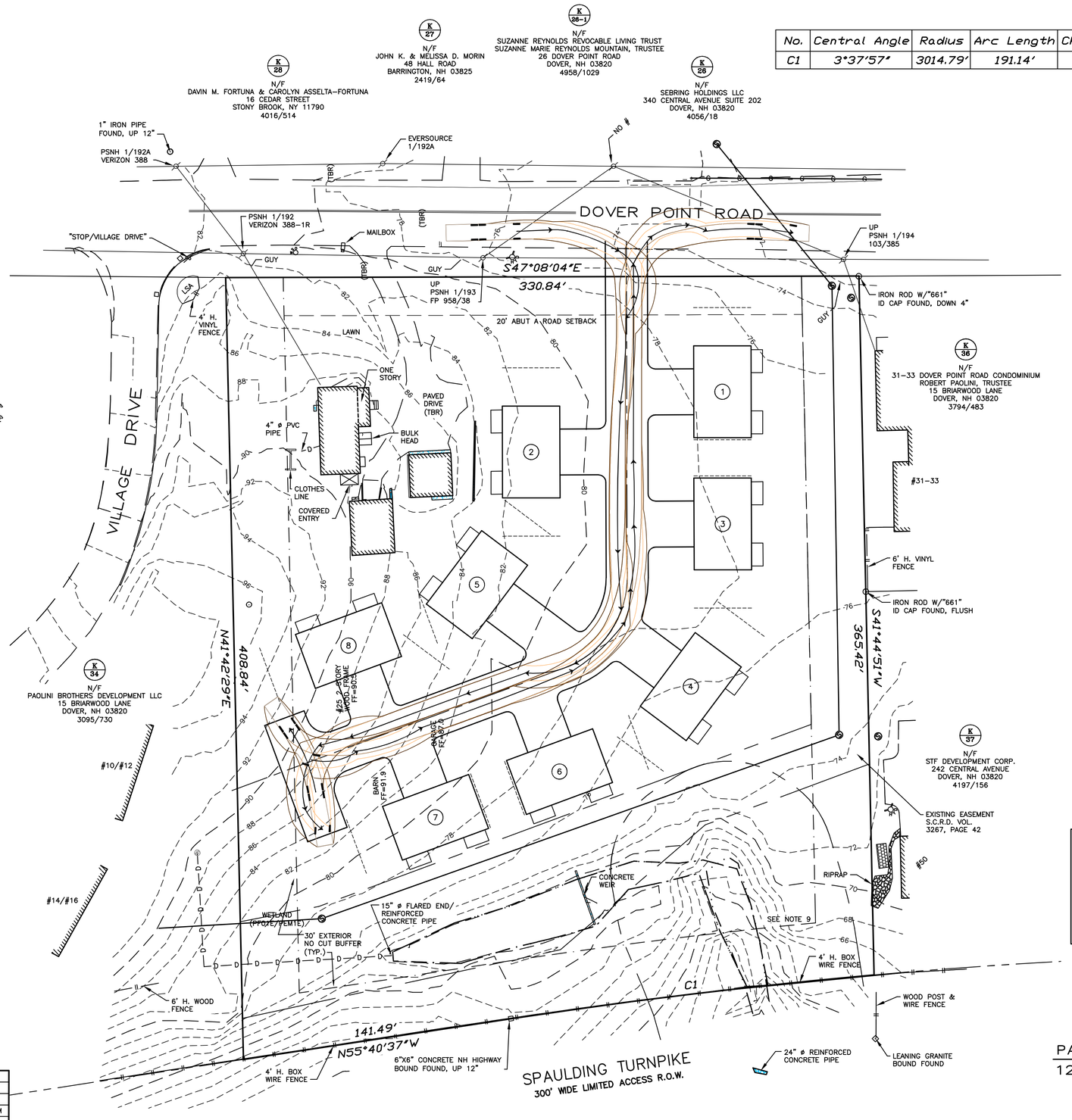

K / 35

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S.C.R.D. VOLUME 5080, PAGE 1

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12.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.

13.) THE SOIL TYPES ON THE SITE ARE:
BzB BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES
CfB CHARLTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
CfC CHARLTON FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES
WdE WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
WfB WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 0 TO 8 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

16 UNIT PROPOSED TDR CONCEPT
PREPARED FOR
25 DOVER POINT, LLC
TAX MAP K, LOT No. 35
25 DOVER POINT ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.

DRAWN BY: RJM	FILE: 2504\D\2504 CONCEPT TDR
SCALE: 1" = 30'	DATE: JULY 3, 2024

30 15 0 15 30 60 90 120

NO.	DATE	DESCRIPTION	BY	CHK
1	6/30/25	ADD TDR CALCULATIONS, NOTE 10 & REVISE DRIVES	RJM	KMM

CNE 23043 REVISIONS
23–2504 TDR
PROJECT NO TYPE FIELDBOOK & PAGES

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742–0911
SURVEYING – PLANNING – CONSULTING

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #LOTA-2025-0007

Application Type:	Lot Line Adjustment	
Applicant(s):	Stephen & Deborah Gitschier	(104-106 Rutland)
Owner(s):	Stephen & Deborah Gitschier	(104-106 Rutland)
	Kathleen Gitschier	(108 Rutland)
Location:	Map 15, Lot 15	(104-106 Rutland)
	Map 15, Lot 15-1	(108 Rutland)
Meeting Date:	July 22, 2025	

INTENT: Proposal is to revise the lot lines for two abutting properties located at 104-106 and 108 Rutland Street

LOTS/UNITS PROPOSED: Two (2) Existing Lots (no change)

AGENDA ITEM #: 4-B

FILE: LOTA-2025-0007

SQUARE FOOTAGE:

Existing/Proposed

Map 15, Lot 15 = ±15,621 sf. / ±16,838 sf.
Map 15, Lot 15-1 = ±14,665 sf. / ±13,448 sf.

ZONING DISTRICT: Gateway District

EXISTING USE: Residential

PROPOSED USE: Residential

SURROUNDING USE: Mixed Use

ZBA ACTION: N/A

ATTACHMENTS: Application, Lot Line Revision Plan

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail for this meeting.

PERMITS / WAIVERS REQUIRED:
N/A

Summary of Request and Background

The applicant is submitting a proposed lot line adjustment to revise the lot lines between two abutting properties located at 104-106 Rutland St. (Map 15, Lot 15) and 108 Rutland St. (Map 15, Lot 15-1), with the intent of transferring ±1,217 sf. from 108 Rutland St. (Map 15, Lot 15-1) to 104-106 Rutland St. (Map 15, Lot 15).

Examining both lots, conformity with the Zoning ordinance in this particular case is moot, as the Gateway District does not have a set minimum lot size, and all other dimensional requirements are subject to the structures on the lots, not the lots themselves, i.e. there are no zoning nonconformities associated with this proposed lot line adjustment.

Consistency with Land Use Regulations

§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 and presents no additional zoning nonconformities.

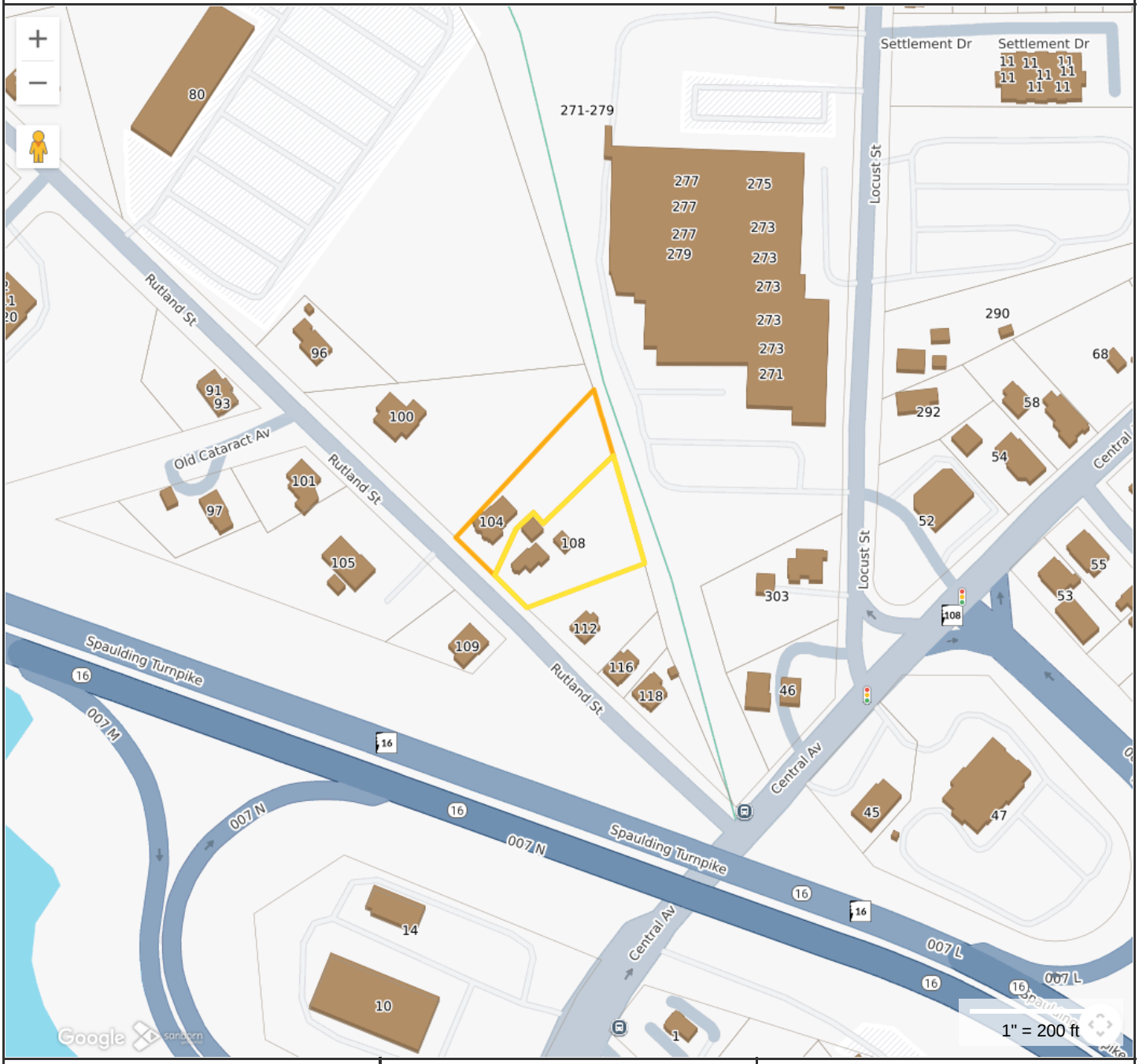
STAFF RECOMMENDATION:

The Planning Department therefore recommends the Planning Board accept the application, open the public hearing, 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-2025-0007
    b. The owners' signatures

LOTA-2025-0007 104-106 & 108 RUTLAND



Property Information

Location	108 RUTLAND ST
Owner	GITSCHIER M KATHLEEN
Land Use	101R
Zoning Code	G
Property Id	15015-001000

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 LOTA-2025-0007
FOR CITY OF DOVER, N.H.

Plan Type:	Lot Adjustment	**Project:**		**App Date:**	06/27/2025
Work Class:	Lot Line Adjustment	**District:**	None	**Exp Date:**	08/31/2025
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Glidden, Jean	**Approval Expire Date:**	

Description: To adjust the property lines between 104-106 Rutland Street and 108 Rutland Street.

Parcel:		**Address:**		**Zone:**
15015-001000		108 Rutland St Dover, NH		
15015-000000	Main	104 Rutland St Dover, NH	Main	

Owner
Stephen P. & Deborah H. Gitschier
Mobile: (603) 767-1921

Applicant
McEneaney Survey Associates
P.O. Box 1166
DOVER, NH 03821
Business: (603) 742-0911

Plan Custom Fields

Number of Parcels Involved	2	Parcel Map/Lot	15/15, 15/15-1	Proposed Parcel Size (sqft)	16838
Parcel Zoning	G	Existing Parcel Size (Ac)	0.359	Address of First Property	104 Rutland Street
Existing Parcel Size (sqft)	15638	Owner Name	Stephen P. & Deborah H. Gitschier	Deed Book	3451
Deed Page	486	Owner Address	106 Rutland Street Dover, NH 03820	Deed Date	
Owner Phone	603-797-1921	Parcel Feedback		Address of Second Property	108 Rutland Street
Address of Third Property		Parcel 2 Map/Lot	15/15-1	Parcel 3 Map/Lot	
Second Property Owner Name	M. Kathleen Gitschier (William Gitschier, POA)	Third Property Owner Name		Second Property Owner Address	108 Rutland Street
Third Property Owner Address		Second Property Owner Phone		Third Property Owner Phone	
First Easement Holder Name		Second Easement Holder Name		First Easement Holder Address	
Second Easement Holder Address		First Easement Holder Phone		Second Easement Holder Phone	

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Kevin_McEneaney_6/27/2025.jpg	06/27/2025 8:58	McEneaney, Kevin		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013089	Planning Lot Line Adjustment Application Fee	$200.00	$0.00
	Planning Lot Line Adjustment Fee	$200.00	$0.00
	Total for Invoice INV-2025013089	$400.00	$0.00
	Grand Total for Plan	**$400.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/27/2025 11:43	06/27/2025 11:43
Confirm application complete v.1	Generic Action		06/27/2025 11:43
Planning Board v.1		06/27/2025 11:43	
Planning Board Agenda v.1	Task	06/27/2025 11:43	

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 Final Review v.1	Receive Submittal
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
Create/Link to Records v.1	
Create / Link to Permit - Building Major v.1	Create Sub Permit

City of Dover, New Hampshire
MINOR LOT LINE ADJUSTMENT APPLICATION

[Revision Date: June 4, 2019]

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

APPLICANT INFORMATION

Name of Applicant: Stephen P. & Deborah H. Gitschier Telephone # 603-767-1921

Address of Applicant: 106 Rutland Street Dover, NH 03820

FIRST PROPERTY OWNER AND PARCEL INFORMATION

Name of 1st Property Owner (*if different from applicant*): same Telephone #_____

Address of 1st Property Owner: _____

Address of Property: 106 Rutland Street

Assessor's Map # 15 Lot(s) # 15

Property Deed: Book 3451 Page: 486

Zoning District(s) G (Gateway) Overlay District(s) N/A

Size of Existing Parcel (sq. ft.): 15,621 (0.359 Ac) Size of Proposed Parcel (sq. ft.): 16,838 (0.387 Ac)

SECOND PROPERTY OWNER AND PARCEL INFORMATION

Name of 2nd Property Owner (*if different from applicant*): M. Kathleen Gitschier Telephone #_____

Address of 2nd Property Owner: 108 Rutland Street Dover, NH 03820

Address of Property: 108 Rutland Street

Assessor's Map # 15 Lot(s) # 15-1

Property Deed: Book 3858 Page: 231

Zoning District(s) G (Gateway) Overlay District(s) N/A

Size of Existing Parcel (sq. ft.): 14,665 (0.337 Ac) Size of Proposed Parcel (sq. ft.): 13,448 (0.309 Ac)

THIRD PROPERTY OWNER AND PARCEL INFORMATION

Name of 3rd Property Owner (*if different from applicant*): _____ Telephone #_____

Address of 3rd Property Owner: _____

Address of Property: _____

Assessor's Map # _____ Lot(s) # _____

Property Deed: Book _____ Page: _____

Zoning District(s) _____ Overlay District(s) _____

Size of Existing Parcel (sq. ft.): _____ Size of Proposed Parcel (sq. ft.): _____

[Use additional application form if more than two lots are being adjusted]

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney - McEneaney Survey Associates

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH LLS #661 E-mail address: kevin@surveynh.com

CONSERVATION EASEMENT HOLDER (s)

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Name of 2nd Easement Holder: _____ Telephone #_____

Address 2nd 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. As applicant or as agent, I attest that I am duly authorized to act in this capacity. Deborah H Gitschier 6/23/2025

Signature of First Property Owner: _____ Date: 6-23-25

Signature of Second Property Owner: _____ POA Date: 6/23/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: _____

CITY OF DOVER MINOR LOT LINE ADJUSTMENT
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
15	15-1	M. Kathleen Gitschier	108 Rutland Street Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Stephen P. & Deborah H.	Gitschier	106 Rutland Street Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kevin McEneaney, LLS	McEneaney Survey Associates	P.O. Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
LOT LINE ADJUSTMENT SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision 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.

Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, 3 weeks prior to the Planning Board meeting. Abutter/Notice Fees will be invoiced and are due 28 hours prior to Planning Board.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: Stephen P. & Deborah H. Gitschier File Number: _____

PROPERTY LOCATION: 106 & 108 Rutland Street Tax Map: 15 Lot: 15 and Lot: 15-1

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the surveyed plat layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Fifteen copies of LLA plan w/scale of not less than 1"=50' or 1"=100' for larger adjustments. Plans shall contain the following items as appropriate:	X	
Location map at appropriate scale	X	
Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners	X	
Signature & stamp of NH licensed land surveyor	X	
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 streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location, material and size of existing and proposed permanent monuments	X	
All applicable Dover Common Subdivision notes	X	

REVIEWED BY: _____ DATE_____

NEW HAMPSHIRE POWER OF ATTORNEY

INFORMATION CONCERNING THE POWER OF ATTORNEY

THIS IS AN IMPORTANT LEGAL DOCUMENT. BEFORE SIGNING THIS DOCUMENT YOU SHOULD KNOW THESE IMPORTANT FACTS:

Notice to the Principal: As the "Principal," you are using this Power of Attorney to grant power to another person (called the "Agent") to make decisions, including, but not limited to, decisions concerning your money, property, or both, and to use your money, property, or both on your behalf. If this Power of Attorney does not limit the powers that you give to your Agent, your Agent will have broad and sweeping powers to sell or otherwise dispose of your property, and to spend your money without advance notice to you or approval by you. Unless you have expressly provided otherwise in this Power of Attorney, your Agent will have these powers before you become incapacitated, and unless you have expressly provided otherwise in this Power of Attorney, your Agent will continue to have these powers after you become incapacitated. You have the right to retain this Power of Attorney and to release it later or to request that another person retain this Power of Attorney on your behalf and release it only if one or more conditions specified in advance by you are satisfied. You have the right to revoke or take back this Power of Attorney at any time, so long as you are of sound mind. If there is anything about this Power of Attorney that you do not understand, you should seek professional advice.

Principal's Signature: M. Kathleen Gitschier
Date: 4/12/24

1. DESIGNATION OF AGENT

I, M. Kathleen Gitschier, of 108 Rutland Street Dover NH 03820 [Address], name the following person as my agent:

Name of Agent: William Gitschier (Brother)
Agent's Address: 98 Mart Road Dover NH 03801

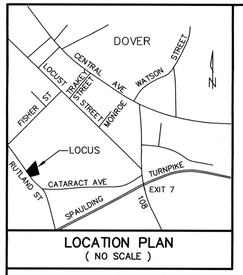
2. DESIGNATION OF SUCCESSOR AGENT(S) (OPTIONAL)

Name of Successor Agent: Jeffrey Gitschier (Nephew)
Successor Agent's Address: 299 McKinley Road Portsmouth NH 03801

If my successor agent is unable or unwilling to act for me, I name the following person as my second successor agent:

LOTA-2025-0007 **104 & 108 RUTLAND STREET**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
15012-000000	109 RUTLAND ST	RELLA GIOVANNI	MACDOUGALL KEIRRA	109 RUTLAND ST	DOVER	NH	03820
15013-000000	105 RUTLAND ST	WECOHAMET LODGE #3 100F		105 RUTLAND ST	DOVER	NH	03820
15013-A00000	101 RUTLAND ST	GITSCHIER ELENOR TRUSTEE	GITSCHIER ELENOR REVOCABLE TRUST 2024	101 RUTLAND ST	DOVER	NH	03820
15014-000000	100 RUTLAND ST	JESSEE-MCGEE WANDA J		100 RUTLAND ST	DOVER	NH	03820
15016-000000	112 RUTLAND ST	WELCH JAMES A &	WELCH SUSAN L	160 HARE RD	MILTON	NH	03851
15017-000000	116 RUTLAND ST	DOWNEY KENNETH C &	DOWNEY MARGARET J	116 RUTLAND ST	DOVER	NH	03820
15018-000000	118 RUTLAND ST	HAZEN BENJAMIN C		1601 29TH ST #1292 PMB 1105	BOULDER	CO	80301
15019-000000	46 CENTRAL AV	GTY MA/NH LEASING INC	C/O GETTY REALTY CORP	292 MADISON AVE FL 9	NEW YORK	NY	10017-6376
15020-000000	303 LOCUST ST	HANCOCK TYLER R REAL ESTATE LLC		303 LOCUST ST	DOVER	NH	03820
15021-022000	271 LOCUST ST	DOUBLE DIAMOND HOLDINGS SOUTH LLC		340 CENTRAL AVE #202	DOVER	NH	03820
15066-000000	80 RUTLAND ST	RESTORATION CHURCH ASSEMBLY OF GOD		PO BOX 1664	DOVER	NH	03821
15066-A00000	96 RUTLAND ST	MILLS JUSTIN T		96 RUTLAND ST	DOVER	NH	03820
15015-000000	104 RUTLAND ST	GITSCHIER STEPHEN P &	GITSCHIER DEBORAH H	106 RUTLAND ST	DOVER	NH	03820
15015-001000	108 RUTLAND ST	GITSCHIER M KATHLEEN		108 RUTLAND ST	DOVER	NH	03820
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY	PO BOX 1166	DOVER	NH	03821



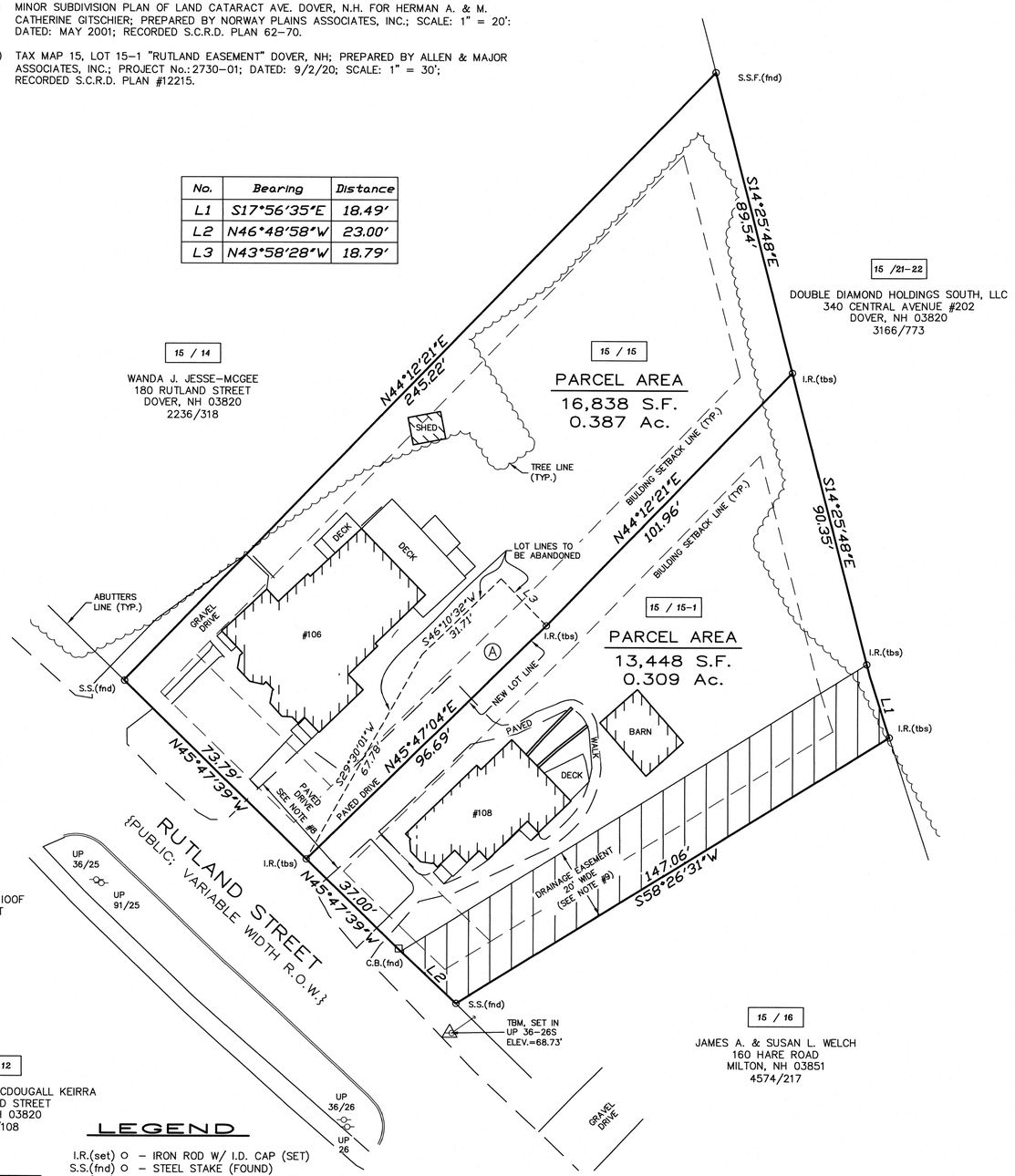
LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) MINOR SUBDIVISION PLAN OF LAND CATARACT AVE. DOVER, N.H. FOR HERMAN A. & M. CATHERINE GITSCHIER; PREPARED BY NORWAY PLAINS ASSOCIATES, INC.; SCALE: 1" = 20': DATED: MAY 2001; RECORDED S.C.R.D. PLAN 62–70.

2.) TAX MAP 15, LOT 15–1 "RUTLAND EASEMENT" DOVER, NH; PREPARED BY ALLEN & MAJOR ASSOCIATES, INC.; PROJECT No.:2730–01; DATED: 9/2/20; SCALE: 1" = 30'; RECORDED S.C.R.D. PLAN #12215.

No.	Bearing	Distance
L1	S17°56'35"E	18.49'
L2	N46°48'58"W	23.00'
L3	N43°58'28"W	18.79'



LEGEND

I.R.(set) O – IRON ROD W/ I.D. CAP (SET)
S.S.(fnd) O – STEEL STAKE (FOUND)
C.B.(fnd) O – CONCRETE BOUND (FOUND)
△TBM – TEMPORARY BENCH MARK
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o- UP 410/5 – UTILITY POLE W/ I.D. Nos.

NOTES:

1.) OWNERS OF RECORD:

15 / 15 — STEPHEN P. GITSCHIER & DEBORAH H. GITSCHIER
106 RUTLAND STREET
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. BOOK 3451, PAGE 486

15 / 15–1 — M. KATHLEEN GITSCHIER
108 RUTLAND STREET
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. BOOK 3858, PAGE 231

_____
_____
_____
OWNER SIGNATURE

2.) 15 / 15 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) THE INTENT OF THIS PLAN IS TO DEPICT A LOT LINE ADJUSTMENT WHERE A PORTION OF LOT 15/15–1 WILL BE ADDED TO LOT 15/15. SEE THE TABLE BELOW FOR AREA DETAILS.

(A) – 1,217 S.F. WILL BE ADDED TO LOT 15/15.

PARCEL AREAS:	EXISTING	PROPOSED
15 / 15	= 15,621 S.F.± / 0.359 AC.±	= 16,838 S.F.± / 0.387 AC.±
15 / 15–1	= 14,665 S.F.± / 0.337 AC.±	= 13,448 S.F.± / 0.309 AC.±

4.) ZONING DISTRICT: GATEWAY DISTRICT (G)

DIMENSIONAL REQUIREMENTS:	
MINIMUM LOT SIZE	= N/A
MAXIMUM LOT COVERAGE	= 50 PERCENT
FRONTAGE BUILD OUT	= 60 PERCENT
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD–TO LINE	= 5 FT. MIN. – 20 FT. MAX
SIDE SETBACK	= 10 FEET MINIMUM
REAR SETBACK	= 15 FEET MINIMUM
MAXIMUM BUILDING HEIGHT	= 4 STORY MAXIMUM – 2 STORY MINIMUM

5.) THE SUBJECT PARCELS ARE DETERMINED TO BE OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JUNE 9, 2025. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED JUNE 9, 2025.

7.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON JUNE 9, 2025 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

8.) PARCELS SHOWN ARE SUBJECT TO A CROSS ACCESS EASEMENT FOR THE COMMON DRIVEWAY LEADING OVER MAP 15, LOT 15, IN FAVOR OF 15/15–1. RECORDED S.C.R.D. BK 3451, PG 486.

9.) PARCEL 15/15–1 IS SUBJECT TO 20' DRAINAGE EASEMENT BENEFITING THE OF CITY OF DOVER. SEE REFERENCE PLAN #2.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

25104	LLA	25–05	14–17
PROJECT NO	TYPE	FIELDBOOK & PAGES	

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

LOT LINE ADJUSTMENT PLAN
PREPARED FOR
STEPHEN P. GITSCHIER
AND
DEBORAH H. GITSCHIER
TAX MAP 15, LOT No.15
106 RUTLAND STREET
AND
M. KATHLEEN GITSCHIER
TAX MAP 15, LOT No.15–1
108 RUTLAND STREET
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.

DRAWN BY: JJH	FILE: P/25104/D/25104
SCALE: 1" = 20'	DATE: JUNE 18, 2025

20 10 0 10 20 40 60 80

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 661 KEVIN M. McENEANEY — SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #LOTA-2025-0008

Application Type:	Lot Line Adjustment	
Applicant(s):	Timothy D. & Cheryl A. Lindsay Rev. Trust	(4 Bay View Rd.)
Owner(s):	Timothy D. & Cheryl A. Lindsay Rev. Trust	(4 Bay View Rd.)
	The Lucille E. Richard Rev. Trust…	(10 Bay View Rd.)
Location:	Map J, Lot 17	(4 Bay View Rd.)
	Map J, Lot 18-A	(10 Bay View Rd.)
Meeting Date:	July 22, 2025	

INTENT: Proposal is to revise the lot lines for two abutting properties located at 4 and 10 Bay View Rd.

LOTS/UNITS PROPOSED: Two (2) Existing Lots (no change)

AGENDA ITEM #: 4-C

FILE: LOTA-2025-0008

SQUARE FOOTAGE:

Existing/Proposed

Map J, Lot 17 = ±28,987 sf. / ±33,207 sf.
Map J, Lot 18-A = ±53,627 sf. / ±49,406 sf.

ZONING DISTRICT: R-40

EXISTING USE: Residential

PROPOSED USE: Residential

SURROUNDING USE: Residential, no change

ZBA ACTION: N/A

ATTACHMENTS: Application, Lot Line Revision Plan

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail for this meeting.

PERMITS / WAIVERS REQUIRED:
N/A

Summary of Request and Background

The applicant is submitting a proposed lot line adjustment to revise the lot lines between two abutting properties located at 4 Bay View Rd. (Map J, Lot 17) and 10 Bay View Rd. (Map J, Lot 18-A), with the intent of transferring ±4,221 sf. from 10 Bay View Rd. (Map J, Lot 18-A) to 4 Bay View Rd. (Map J, Lot 17).

Regarding zoning compliance, while Lot 18-A is conforming with underlying zoning requirements, Lot 17 is not due to its lack of sufficient lot area (±28,987 sf. where 40,000 sf. is required). However, the proposed lot line adjustment would increase the area of Lot 17, thus increasing its conformity, which staff and the zoning ordinance encourages.

Consistency with Land Use Regulations

§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 and presents no additional zoning nonconformities.

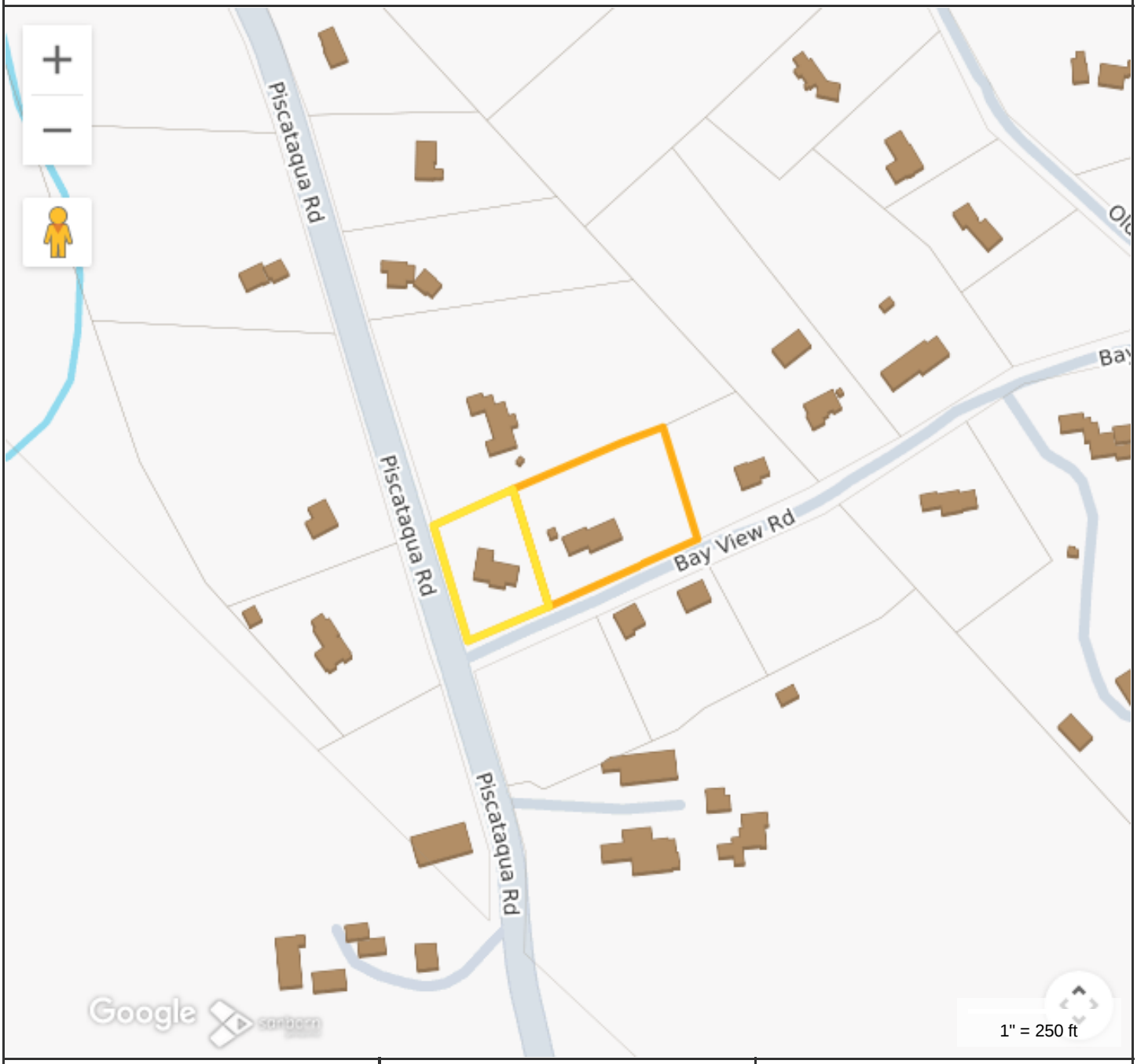
STAFF RECOMMENDATION:

The Planning Department therefore recommends the Planning Board accept the application, open the public hearing, 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-2025-0008
    b. The owners' signatures

LOTA-2025-0008 4 & 10 BAY VIEW



Property Information

Location	4 BAY VIEW RD
Owner	LINDSAY TIMOTHY & CHERYL TRUSTEES
Land Use	101R
Zoning Code	R-40
Property Id	J0017-000000

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 LOTA-2025-0008
FOR CITY OF DOVER, N.H.

Plan Type:	Lot Adjustment	**Project:**		**App Date:**	06/27/2025
Work Class:	Lot Line Adjustment	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: To adjust the property line between 4 and 10 Bay View Road.

Parcel:	**Address:**	**Zone:**
J0018-A00000	10 Bay View Rd Dover, NH	R-40(Residential - Rural)
J0017-000000 Main	4 Bay View Rd Dover, NH Main	

Owner
Robert A. Richard
Home: (603) 749-5807

Applicant
McEneaney Survey Associates
P.O. Box 1166
DOVER, NH 03821
Business: (603) 742-0911

Owner
Timothy D. & Cheryl A. Lindsay
Home: (603) 749-5807

Plan Custom Fields

Number of Parcels Involved	2	Parcel Map/Lot	J/17	Proposed Parcel Size (sqft)	33207
Parcel Zoning	R-40	Existing Parcel Size (Ac)	0.67	Address of First Property	4 Bay View Road
Existing Parcel Size (sqft)	29185.2	Owner Name	Timothy D. & Cheryl A. Lindsay	Deed Book	4334
Deed Page	156	Owner Address	4 Bay View Road Dover, NH 03820	Deed Date	
Owner Phone	603-749-5807	Parcel Feedback		Address of Second Property	10 Bay View Road
Address of Third Property		Parcel 2 Map/Lot	J/18-A	Parcel 3 Map/Lot	
Second Property Owner Name	Robert A. Richard	Third Property Owner Name		Second Property Owner Address	10 Bay View Road Dover, NH 03820
Third Property Owner Address		Second Property Owner Phone		Third Property Owner Phone	
First Easement Holder Name		Second Easement Holder Name		First Easement Holder Address	
Second Easement Holder Address		First Easement Holder Phone		Second Easement Holder Phone	

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Kevin_McEneaney_6/27/2025.jpg	06/27/2025 10:42	McEneaney, Kevin		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013090	Planning Lot Line Adjustment Application Fee	$200.00	$0.00
	Planning Lot Line Adjustment Fee	$200.00	$0.00
	Total for Invoice INV-2025013090	$400.00	$0.00
	Grand Total for Plan	**$400.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/27/2025 12:25	06/27/2025 12:25
Confirm application complete v.1	Generic Action		06/27/2025 12:25
Planning Board v.1		06/27/2025 12:28	
Planning Board Agenda v.1	Task	06/27/2025 12:28	

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 Final Review v.1	Receive Submittal
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
Create/Link to Records v.1	
Create / Link to Permit - Building Major v.1	Create Sub Permit

City of Dover, New Hampshire
MINOR LOT LINE ADJUSTMENT APPLICATION

[Revision Date: June 4, 2019]

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

APPLICANT INFORMATION

Name of Applicant: Timothy D. & Cheryl A. Lindsay, Co-Trustees Telephone # 603-749-5807 ext 112

Address of Applicant: 4 Bay View Road Dover, NH 03820

FIRST PROPERTY OWNER AND PARCEL INFORMATION

Name of 1st Property Owner (*if different from applicant*): Same Telephone #_____

Address of 1st Property Owner: _____

Address of Property: 4 Bay View Road

Assessor's Map # J Lot(s) # 17

Property Deed: Book 4334 Page: 156

Zoning District(s) R-40 Overlay District(s) _____

Size of Existing Parcel (sq. ft.): 28,987 (0.67 Ac) Size of Proposed Parcel (sq. ft.): 33,207 (0.76 Ac)

SECOND PROPERTY OWNER AND PARCEL INFORMATION

Name of 2nd Property Owner (*if different from applicant*): Robert A. Richard, Trustee Telephone #_____

Address of 2nd Property Owner: 10 Bay View Road Dover, NH 03820

Address of Property: Type text here

Assessor's Map # J Lot(s) # 18-A

Property Deed: Book 2225 Page: 335

Zoning District(s) R-40 Overlay District(s) _____

Size of Existing Parcel (sq. ft.): 53,627 (1.23 Ac) Size of Proposed Parcel (sq. ft.): 49,406 (1.13 Ac)

THIRD PROPERTY OWNER AND PARCEL INFORMATION

Name of 3rd Property Owner (*if different from applicant*): _____ Telephone #_____

Address of 3rd Property Owner: _____

Address of Property: _____

Assessor's Map # _____ Lot(s) # _____

Property Deed: Book _____ Page: _____

Zoning District(s) _____ Overlay District(s) _____

Size of Existing Parcel (sq. ft.): _____ Size of Proposed Parcel (sq. ft.): _____

[Use additional application form if more than two lots are being adjusted]

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney- McEneaney Survey Associates

Address P.O. Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH LLS #661 E-mail address: kevin@surveynh.com

CONSERVATION EASEMENT HOLDER (s)

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Name of 2nd Easement Holder: _____ Telephone #_____

Address 2nd 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. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of First Property Owner: _____ Date: 6/25/25

Signature of Second Property Owner: _____ Date: 6/25/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: _____

CITY OF DOVER MINOR LOT LINE ADJUSTMENT
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
J	18-A	Robert A. Richard, Trustee	10 Bay View Road Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Timothy D. & Cheryl A.	Lindsay, Co-Trustees	4 Bay View Road Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kevin McEneaney, LLS	McEneaney Survey Associates	P.O. Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
LOT LINE ADJUSTMENT SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision 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.

Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, 3 weeks prior to the Planning Board meeting. Abutter/Notice Fees will be invoiced and are due 28 hours prior to Planning Board.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: Timothy D. & Cheryl A. Lindsay, Co-Trustees File Number: _____

PROPERTY LOCATION: 4 & 10 Bay View Road Tax Map: J Lot: 17 and Lot: 18-A

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the surveyed plat layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Fifteen copies of LLA plan w/scale of not less than 1"=50' or 1"=100' for larger adjustments. Plans shall contain the following items as appropriate:	X	
Location map at appropriate scale	X	
Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners	X	
Signature & stamp of NH licensed land surveyor	X	
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 streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location, material and size of existing and proposed permanent monuments	X	
All applicable Dover Common Subdivision notes	X	

REVIEWED BY: _____ DATE_____

THE TIMOTHY D. LINDSAY REVOCABLE TRUST
THE CHERYL A. LINDSAY REVOCABLE TRUST
4 BAY VIEW ROAD
DOVER, NH 03820

June 24, 2025

City of Dover
Planning Department
288 Central Avenue
Dover, NH 03820

Re: Owner Authorization for Lot Line Adjustment Application
4 & 10 Bay View Road, Dover, NH
Tax Map: J, Lot: 17 & 18A

LETTER OF AUTHORIZATION

We, Timothy D. & Cheryl A. Lindsay, Co-Trustees, 4 Bay View Road, Dover do hereby authorize Civilworks New England to represent the application relative to a lot line adjustment for the above referenced parcels.

Respectfully,

Timothy D. Lindsay, Co-Trustee — Date 6/25/25

Cheryl A. Lindsay, Co-Trustee — Date

THE LUCILLE E. RICHARD REVOCABLE TRUST OF 2000
ROBERT A. RICHARD, TRUSTEE
10 BAY VIEW ROAD
DOVER, NH 03820

June 24, 2025

City of Dover
Planning Department
288 Central Avenue
Dover, NH 03820

Re: Owner Authorization for Lot Line Adjustment Application
10 & 4 Bay View Road, Dover, NH
Tax Map: J, Lot: 18-A & 17

LETTER OF AUTHORIZATION

I, Robert A. Richard, Trustee of The Lucille E. Richard Revocable Trust of 2000, 10 Bay View Road, Dover, do hereby authorize Civilworks New England to represent the application relative to a lot line adjustment for the above-referenced parcels.

Respectfully,

Robert A. Richard, Trustee — Date 6/25/25

LOTA-2025-0008 **4 & 10 BAY VIEW ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
J0016-A00001	97 PISCATAQUA RD	HUMAN ACTION FOUNDATION		62 CALEF HWY STE 137	LEE	NH	03861
J0016-C00000	89 PISCATAQUA RD	GITSCHIER JAMES		89 PISCATAQUA ROAD RFD 6	DOVER	NH	03820
J0016-C00001	95 PISCATAQUA RD	GITSCHIER ROBERT	GITSCHIER JAMES	95 PISCATAQUA RD	DOVER	NH	03820
J0018-C00000	72 PISCATAQUA RD	RICHARD HENRI J TTS & RICHARD ANN	RICHARD HENRI J REV AGREEMENT TRUST	72 PISCATAQUA RD	DOVER	NH	03820
J0018-G00000	24 BAY VIEW RD	HUTCHINS RICHARD & CONNIE TRUSTEES	HUTCHINS RICHARD AND CONNIE TRUSTS	24 BAY VIEW ROAD	DOVER	NH	03820
J0019-E00005	30 BAY VIEW RD	GERAKINES TIMOTHY	KEATS PAMELA	30 BAYVIEW RD	DOVER	NH	03820
J0026-000000	11 BAY VIEW RD	DRAKE WILLIAM E &	DRAKE PATRICIA A	11 BAY VIEW RD	DOVER	NH	03820-5226
J0026-A00000	1 BAY VIEW RD	BIG SKY FARM LLC		PO BOX 1384	HAMPTON	NH	03842
J0026-B00000	7 BAY VIEW RD	BIG SKY FARM LLC		PO BOX 1384	HAMPTON	NH	03842
J0017-000000	4 BAY VIEW RD	LINDSAY TIMOTHY & CHERYL TRUSTEES	LINDSAY TIMOTHY & CHERYL REVOCABLE TRUST	4 BAY VIEW ROAD	DOVER	NH	03820
J0018-A00000	10 BAY VIEW RD	RICHARD ROBERT A TRUSTEE	THE LUCILLE E RICHARD REVOCABLE TRUST OF	10 BAYVIEW RD	DOVER	NH	03820-5202
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY	PO BOX 1166	DOVER	NH	03821

TITLE L
WATER MANAGEMENT AND PROTECTION

CHAPTER 485-A
WATER POLLUTION AND WASTE DISPOSAL

Sewage Disposal Systems

Section 485-A:33

485-A:33 Exemptions. –

I. No plans and specifications shall be required whenever the proposed sewage or waste disposal system will be connected to any public sewer system operated by any municipality or other governmental body within the state.

II. No plans and specifications shall be required whenever land is subdivided and the purpose of such subdivision is to correct or conform boundary lines or when land is exchanged between abutters and no building is contemplated on the exchanged land.

III. No plans and specifications shall be required for subdivision whenever land is proposed to be subdivided solely for the purpose of a bona fide gift of a lot or lots, and the person intending to subdivide the land certifies upon forms provided by the department that the proposed subdivision is a gift; provided that this limited exemption shall not relieve the donee of the lot, or lots, of the responsibility, and it shall be the responsibility of such donee to submit plans and specifications in accordance with this chapter in the event that such donee subsequently intends to (1) convey to others for consideration any such lot, or lots, or (2) intends to construct thereon a structure from which sewage or other waste will be discharged.

IV. (a) The repair or replacement in-kind of a sewage effluent disposal area shall qualify for a permit by rule, provided all of the following criteria are met:

(1) The existing system receives only domestic sewage from a single family residence and up to one associated accessory dwelling unit that is included on the approved plan.

(2) There is no increase in sewage loading proposed for the repaired or replacement system.

(3) The bottom of the bed is located no less than 24 inches above the seasonable high water table.

(4) The system is located 75 feet or more from an abutter's well unless there is a standard well release form with the record of the well completion submitted to the department pursuant to RSA 482-B:10 or there is an existing department waiver to the distance for the abutter's well.

(5) The system is located 75 feet or more from the owner's well unless there is an existing department waiver to the distance for the owner's well.

(6) The existing system received prior construction and operational approval from the department and the replacement or repaired system will conform to the provisions of such approval, provided the department may by rule require a minimum septic tank size of 1,000 gallons.

(7) The system is not within 75 feet of any surface water, water supply well, or very poorly drained soil unless authorized by the prior departmental approval described in subparagraph (6).

(8) No new waivers to the department's rules are requested.

(9) The system has not been previously repaired or replaced under a permit by rule in accordance with the provisions of this paragraph.

(b) Construction of the system may proceed upon the submission of an application to the department by a permitted designer under RSA 485-A:35 and receipt of the permit by rule from the department. A copy of the approval for construction and approval for operation and a plan matching the operational approval shall be submitted with the application.

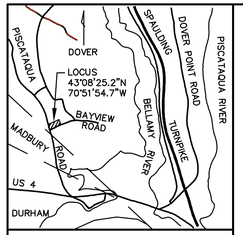
(c) The repaired or replacement system shall not be covered or placed in operation without final inspection and approval by an authorized agent of the department. All inspection by the department shall be accomplished within 7 business days after receipt of written notice from the installer that the system is ready for inspection. The installer shall provide the authorized agent of the department, at the time of the inspection, a copy of the previously approved plan bearing the state approval stamp and an existing conditions plan bearing the seal of the permitted designer performing work under the permit by rule. If the state approved plan is not available from the state or town, a copy of the approved plan from the original designer, bearing the designer's stamp, may be used.

(d) The applicant submitting the permit by rule application shall assume all liability and responsibility for the components of the design that are part of the system being repaired or replaced under the permit by rule.

(e) The installer constructing the system shall assume all liability and responsibility for the construction of the system components repaired or replaced under the permit by rule.

(f) For purposes of this paragraph, "in-kind" shall mean a repair or replacement of the effluent disposal area in strict accordance with what is shown on the previously approved plan.

Source. 1989, 339:1. 1996, 228:106. 2012, 174:2, eff. June 11, 2012. 2023, 123:2, eff. Aug. 29, 2023; 147:4, eff. July 1, 2023.



LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN P17–77, LOT LINE ADJUSTMENT PLAN PREPARED FOR TIMOTHY D. & CHERYL A. LINDSEY AND ROBERT A. & LUCILLE E. RICHARD, TAX MAP J, LOTS 17 & 18–A; SCALE" 1" = 40'; DATED: 10–30–17, REVISED THROUGH 01/05/18; BY: CIVILWORKS NEW ENGLAND; RECORDED S.C.R.D. PLAN 115–38.

2.) PLAN OF LAND BELONGING TO GEORGE E. PRESCOTT, DOVER, NH; SCALE: 1" = 40'; DATED: NOV. 1970; BY: K.E. MOORE & B.G. STAPLES; RECORDED S.C.R.D. PLAN 35, POCKET 1, FOLDER 13.

3.) PLAN OF LAND BELONGING TO GEORGE E. PRESCOTT, DOVER, NH; SCALE: 1" = 40'; DATED: DEC. 1970; BY: K.E. MOORE & B.G. STAPLES; RECORDED S.C.R.D. PLAN 59, POCKET 1, FOLDER 13.

OWNER SIGNATURES

NOTES:

1.) OWNER OF RECORD:

J / 17
TIMOTHY D. LINDSAY REVOCABLE TRUST OF 2015
TIMOTHY D. LINDSAY, TRUSTEE
CHERYL A. LINDSAY REVOCABLE TRUST OF 2015
CHERYL A. LINDSAY, TRUSTEE
4 BAY VIEW ROAD
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 4334, PAGE 156
S.C.R.D. VOLUME 4543, PAGE 741

J / 18A
THE LUCILLE E. RICHARD REVOCABLE TRUST OF 2000
ROBERTA A. RICHARD, TRUSTEE
10 BAYVIEW ROAD
DOVER, NH 03820
S.C.R.D. VOLUME 2225, PAGE 335

2.) J / 17 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) THE INTENT OF THIS PLAN IS TO ADJUST THE LOT LINE BETWEEN THE SUBJECT LOTS AS SHOWN. PARCEL (A) (4,221 S.F., 0.10 Ac.) WILL BE ADDED TO LOT J/17.

LOT	ORIGINAL AREA	NEW AREA
J/17	28,987 S.F., 0.67 Ac.	33,207 S.F., 0.76 Ac.
J/18A	53,627 S.F., 1.23 Ac.	49,406 S.F., 1.13 Ac.

4.) ZONING DISTRICT IS R40:

DIMENSIONAL REQUIREMENTS:	
MINIMUM LOT SIZE	= 40,000 S.F.
MAXIMUM LOT COVERAGE	= 10 PERCENT
MINIMUM FRONTAGE	= 150 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 40 FEET
SIDE SETBACK	= 25 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET

5.) THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) 33017C0340E, EFFECTIVE DATE SEPTEMBER 30, 2015.

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON REFERENCE PLAN 1.

7.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY CIVILWORKS NEW ENGLAND ON OCTOBER 4, 2017 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

8.) THE SOIL TYPES ON THE SITE ARE:
HgC – HOLLIS–GLOUCESTER VERY ROCKY FINE SANDY LOAM, 8–15% SLOPES.
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

9.) PER NH RSA 485–A:33 II, THIS DOES NOT REQUIRE NHDES SUBDIVISION APPROVAL.

J / 16C
JAMES J. GITSCHIER
89 PISCATAQUA ROAD
DOVER, NH 03820
1129 / 70

J / 16C–1
JAMES J. GITSCHIER
ROBERT T. GITSCHIER
95 PISCATAQUA ROAD
DOVER, NH 03820
1325 / 747

J / 16A–1
HUMAN ACTION FOUNDATION
62 CALEF HIGHWAY SUITE 137
LEE, NH 03861
4595 / 698

J / 18C
ANN M. RICHARD
HENRI J. RICHARD REVOCABLE AGREEMENT OF TRUST
HENRI J. RICHARD, TRUSTEE
72 PISCATAQUA ROAD
DOVER, NH 03820
5155 / 29

J / 18C
RICHARD T. HUTCHINS, JR. REVOCABLE TRUST
RICHARD T. HUTCHINS, TRUSTEE
CONNIE N. HUTCHINS REVOCABLE TRUST
CONNIE N. HUTCHINS, TRUSTEE
24 BAY VIEW ROAD
DOVER, NH 03820

J / 26A
BIG SKY FARM, LLC
P.O. Box 1384
HAMPTON, NH 03842
5024 / 630

J / 26
WILLIAM E. DRAKE
PATRICIA A. DRAKE
11 BAY VIEW ROAD
DOVER, NH 03820
4174 / 139

J / 26B
BIG SKY FARM, LLC
P.O. Box 1384
HAMPTON, NH 03842
5024 / 633

PISCATAQUA ROAD
{PUBLIC; VARIABLE WIDTH R.O.W.}

BAY VIEW ROAD
{PUBLIC; VARIABLE WIDTH R.O.W.}

N65°29'27"E 163.48' (141.02')
S.S.(fnd)
I.R.(tbs)
17.42'
N65°29'27"E 177.43'
S.S.(fnd)
N68°52'38"E 74.91'
S.S.(fnd)
N = 234609.45
E = 1198370.47

N17°13'52"W 198.51'

4' METAL FENCE

J / 17
NEW PARCEL AREA
33,207 S.F.
0.76

APPROX. SEPTIC SYSTEM LOCATION NHDES 107960

HOUSE #4
1 1/2 STORY WOOD FRAME
GARAGE
SHED
EXISTING WELL
75'
ASPHALT DRIVE

(A)
N19°35'39"W 200.38' LOT LINE TO BE ABANDONED
N19°35'39"W 199.64' NEW LOT LINE
N17°25'38"W NEW LOT LINE

J / 18A
NEW PARCEL AREA
49,406 S.F.
1.13 Ac.

6' CHAINLINK FENCE
SHED
GARAGE
HOUSE #10
1 STORY WOOD FRAME
75'
EXISTING WELL
ASPHALT DRIVE

APPROX. SEPTIC SYSTEM LOCATION

S17°23'06"E 196.50'

L3 95.54' S66°09'32"W
25.02'
L2
I.R.(fnd)
I.R.(tbs)
N = 234320.77
E = 1198206.10
219.94' S65°37'22"W
S.S.(fnd) L1

UP 99/107
UP 2
UP 3

NH STATE PLANE NAD 83 GRID AZIMS

No.	Bearing	Distance
L1	S65°29'24"W	25.01'
L2	S65°37'22"W	30.06'
L3	S66°30'23"W	45.93'

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		
1773		LLADJ	–	–
PROJECT NO		TYPE	FIELDBOOK & PAGES	

LOT LINE ADJUSTMENT PLAN
PREPARED FOR
TIMOTHY D. LINDSAY REVOCABLE TRUST OF 2015 &
CHERYL A. LINDSAY REVOCABLE TRUST OF 2015
TAX MAP J, LOT No. 17
4 BAY VIEW ROAD
AND
THE LUCILLE E. RICHARD REVOCABLE TRUST OF 2000
TAX MAP J, LOT No. 18A
10 BAY VIEW ROAD

CITY OF DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. LOTA–2025_____

DRAWN BY: KJF	FILE: P\1773\S\D\1773 LLADJ
SCALE: 1" = 30'	DATE: JUNE 24, 2025

30 15 0 15 30 60 90 120

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 661 KEVIN M. McENEANEY SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

6/26/2025 08:26:36 File: P:\1773 - Tim Lindsay - Dover, NH\Survey\Drawings\1773 LLADJ.dwg Layout: 22x34

From: Scott Boudreau <scott@boudreauls.net>
Sent: Monday, July 14, 2025 11:47 PM
To: Crouser, Paul <P.Crouser@dover.nh.gov>; Blonigen, Rachel <R.Blonigen@dover.nh.gov>
Subject: Re: Plan LOTA-2025-0009

Security Notice: External sender. Use caution with hyperlinks or attachments.

Hi Paul,

I would like to officially withdraw the application for Lot Line Adjustment between 371 Washington Street and 3 Myra Avenue for the July Planning Board meeting. Please let me know if this needs to be done through the application portal.

Thank you,

Scott Boudreau
NH Licensed Land Surveyor #961
ME Professional Land Surveyor #2455

Boudreau Land Surveying P.L.L.C.

(603)659-3468
scott@boudreauls.net
www.boudreauls.net

On Mon, Jul 14, 2025 at 7:46 AM <donotreply@dover.nh.gov> wrote:

Hi Scott,

After speaking with the owners of 3 Myra, it seems clear that the proposed plan is not for a lot line revision, but instead was intended to serve as a minor subdivision plan. At this point, the project cannot be continued, but will have to be withdrawn, as the intent is not to adjust any lot lines.

At this time we would request that you respond in writing to withdraw the application. If you could please respond by day's end, it would be much appreciated.

Best,

Paul R. Crouser

This is a no-reply e-mail address. To contact us, please send an e-mail to p.crouser@dover.nh.gov

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0011

Application Type:	Conditional Use Permit
Applicant(s):	Woodburn & Company c/o John and Judy Craig
Owner(s):	John and Judy Craig
Location:	44 Saddle Trail Dr. (Assessor's Map N, Lot 8-1-3)
Meeting Date:	July 22, 2025

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow impacts totaling 566± s.f. within the Conservation District to allow for the construction of a 3.5' high retaining wall with stairs and a boardwalk.

AGENDA ITEM #: 4-E

FILE: COND-2025-0011

APPLICANT: Woodburn & Company c/o John and Judy Craig

OWNER: John and Judy Craig

LOTS/UNITS PROPOSED: N/A

ACREAGE: 1.90± acres

ZONING DISTRICT: R-40, Conservation District

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential

WAIVERS REQUESTED: N/A

ZBA ACTION: N/A

PERMITS REQUIRED: City of Dover CUP, NH DES Shoreland Permit

CONSERVATION COMMISSION: Endorsed on 7/14/25.

ATTACHMENTS: Site Plan

Summary of Request and Background:
The applicant is proposing to construct an approximately 3.5' high retaining wall with stairs to address steep slopes and a reported risk for erosion. The applicant is also proposing a section of boardwalk, elevated on piers, along a section of the property. This will result in permanent impacts to the Conservation District of 566 square feet and temporary impacts of 4,922 square feet.

The Conservation Commission reviewed and conditionally endorsed the application at their June 16, 2025 special meeting. The Conservation Commission endorsed the project without the proposed boardwalk with the findings that the boardwalk was creating elective impacts that could be avoided. *(minutes attached)*

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

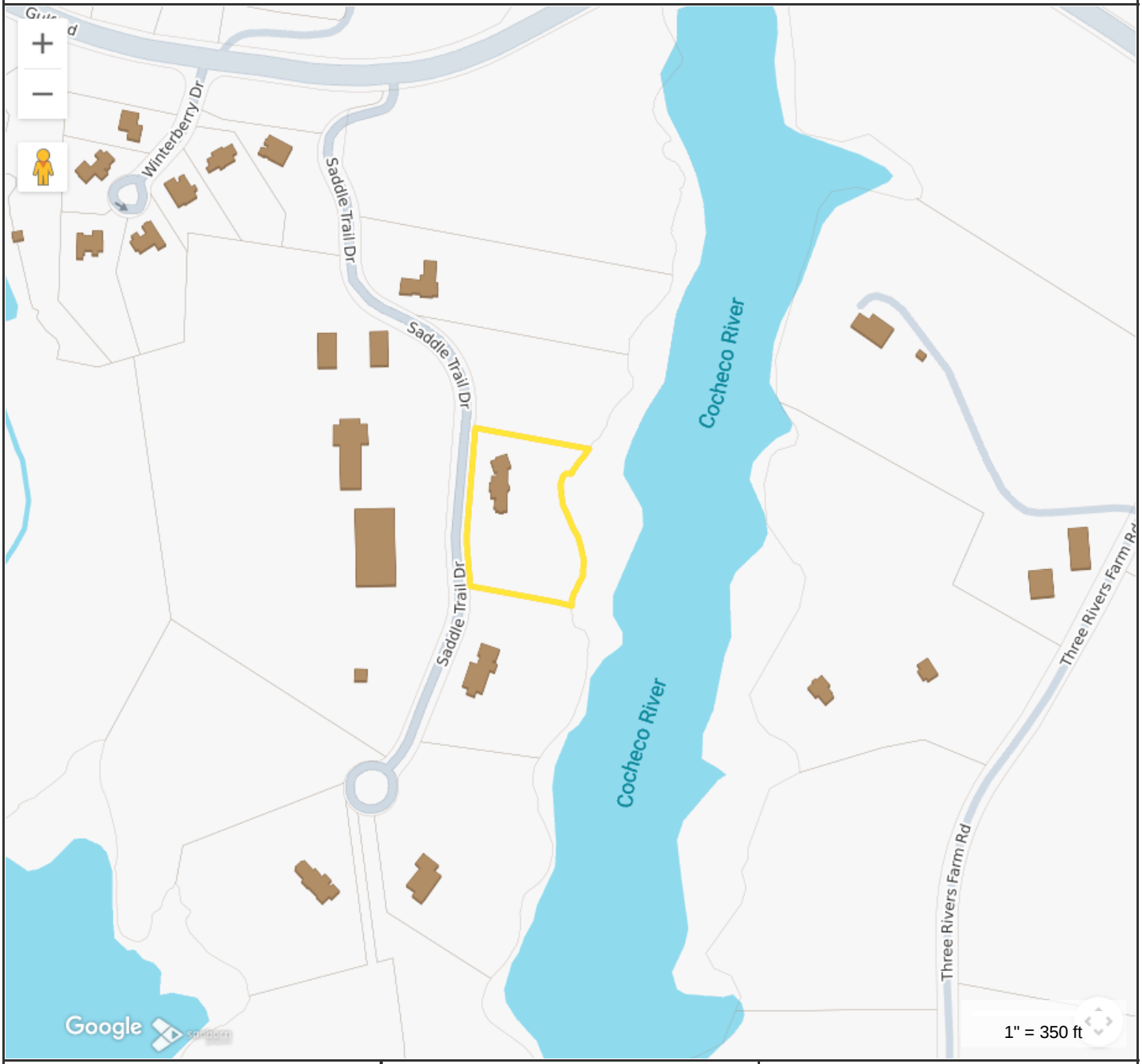
Planning Staff feels that the applicant considered and met all of the criteria as specified in §170.27.C per their narrative. The project includes the retaining wall as an erosion mitigation measure and proposes additional native plantings to compensate for any lost vegetative space. The applicant has applied from the appropriate NH DES permitting and the proposal was reviewed and endorsed by the Conservation Commission at its June 16, 2025 special meeting.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the conditional use permit with the following subsequent conditions:

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

1. Submit a copy of the approved NH DES Shoreland Permit to the Planning Department;
2. Provide physical and digital copies of complete plan set for final Planning Board signature which additionally shall include:
   2.1. Per Conservation Commission endorsement, the boardwalk element should be removed.

COND-2025-0011 44 SADDLE TRAIL



Property Information

Location	44 SADDLE TRAIL DR
Owner	CRAIG JOHN S & JUDITH L TTS OF REV TRST
Land Use	101R
Zoning Code	R-40
Property Id	N0008-001003

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 10/30/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2025-0011
FOR CITY OF DOVER, N.H.

Permit Type Conditional Use
Work Class: Environmental
Status: In Review
Valuation: $0.00

Project:
District: None
Square Feet: 0.00
Assigned To: Blonigen, Rachel

App Date: 05/30/2025
Exp Date: NOT AVAILABLE
Completed: NOT COMPLETED
Approval Expire Date:

Description: Application for the construction of a retaining wall and steps within the 100' Wetland Buffer and on portions of steep slops.

Parcel: N0008-001003 Main

Address: 44 Saddle Trail Dr Main
Dover, NH

Zone: R-40(Residential - Rural)

Plan Preparer	Applicant	Owner	Engineer
Roberta N Woodburn Woodburn & Company Landscape Architecture LLC 103 Kent Place 103 Kent Place Newmarket, NH 03857 Business: (603) 659-5949 Mobile: (603) 534-2112	Roberta N Woodburn Woodburn & Company Landscape Architecture LLC 103 Kent Place 103 Kent Place Newmarket, NH 03857 Business: (603) 659-5949 Mobile: (603) 534-2112	John Craig 44 Saddle Trail Drive Dover, NH 03820 Home: (201) 563-1175 Business: (201) 563-1174 Mobile: (201) 563-1175	Glenn Griswold Business: (603) 335-3948

Permit Custom Fields

Select Permit Type	Conservation District	General Purpose	New Construction	Project Zone	Residential
What is the parcel zoned?	R-40	New Change in Impervious/Paved Area (sq ft)	566	Work	The addition of a 3.5' high retaining wall with steps and a 30' boardwalk within the 100' Wetland Buffer zone and the Conservation District for steep slopes.
permitstatefed	NHDES Wetland Permit NHDES Shoreland Permit				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Roberta_Woodburn_5/30/2025.jpg	05/30/2025 11:53	Woodburn, Roberta		Uploaded via CSS
Permit Snapshot Report.pdf	05/30/2025 11:54	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025012690	Planning General Application Fee	$200.00	$200.00
	Planning Impervious Paved Area Fee	$39.62	$39.62
	Total for Invoice INV-2025012690	$239.62	$239.62
	Grand Total for Permit	**$239.62**	**$239.62**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	Approved	06/02/2025	06/06/2025	06/19/2025	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	Approved	06/02/2025	06/30/2025	06/18/2025

Comments: With conditions

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/02/2025 7:51	06/19/2025 11:54
Confirm application complete v.1	Generic Action		06/02/2025 7:51
Conditional Use Review v.1	Receive Submittal	06/02/2025 0:00	06/19/2025 11:54
Planning Board v.1		06/19/2025 11:54	

PERMIT SNAPSHOT REPORT (COND-2025-0011)

Planning Board Agenda v.1	Task	06/19/2025 11:54
Invoice for Notices v.1	Task	
Send Notices v.1	Task	
Planner Creates Staff Recommendations v.1	Permit Activity	
Distribute Planning Board Materials v.1	Task	
Planning Board Hearing v.1	Hold Hearing	
Planning Board Decision v.1	Permit Activity	
NOD Sent to Applicant v.1	Create Report	
Issue Permit v.1		
Verify Fees Prior to Permit v.1	Generic Action	
Issue and Review Permit v.1	Generic Action	
Print and Email Permit v.1	Generic Action	
Plans uploaded to Treeno v.1	Generic Action	
Internal Notification of Plan Completion v.1	Generic Action	
Recording v.1	Task	

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

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

Property Owner Name: John Craig

Signature(s) of Property Owner(s): _____ Date: 2025-05-30

Signature of Applicant: Robbi Woodburn Date: 2025-05-30
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Property Owner Name: John Craig

Signature(s) of Property Owner(s): _____ Date: 2025-05-30

Signature of Applicant: Robbi Woodburn Date: 2025-05-30
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type: (check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: John and Judy Craig Telephone # 201-563-1175

Address of Applicant: 44 Saddletrail Drive

E-Mail Address: johncraig1234@gmail.com jcraig1234@gmail.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # N-1 Lot(s) # N-8-1-3

Address of Property: 44 Saddletrail Drive

Zoning District(s) R-40 Overlay District(s) _____

Existing Use of Property: Residential

CONDITIONAL USE PERMIT INFORMATION

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

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

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

Installation of a 3.5' high retaining wall, access steps, plant beds, and 30' long 4' wide boardwalk on on helical piers. Retaining wall to soften slope grades with steps for safe access to the lower part of the property. Temporary impacts 4922sf, Permanent Impact 566sf.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status:

NHDES Shoreland Permit

Name of Professional That Prepared Plans: Woodburn & Company Landscape Architecture, LLC and Norway Plains Associates, Civil Engineers

Address 103 Kent Place, Newmarket NH 03857 and 2 Continental Blvd. Rochester NH 03866 Telephone #: 603-659-5949 603-335-3948

Professional License #: Roberta Woodburn NH #002 Glenn Griswold NH #1129 E-mail address: robbi@woodburnandcompany.c ggriswold@norwayplains.com

SIGNATURES

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

Signature of Property Owner: _____ Date: 2025-04-28

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

Signature of Agent: Robbi Woodburn Date: 2025-04-21

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 2025-04-28

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
N-1	N-8-1-3	John S Craig	44 Saddletrail Drive

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Glenn Griswold	Norway Plains Associates	2 Continental Blvd Rochester NH 03866
Roberta Woodburn	Woodburn & Company Landscape Architecture, LLC	102A Kent Place Newmarket, NH 03857

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

COND-2025-0011 **44 SADDLE TRAIL DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
N0008-001002	SADDLE TRAIL DR	BONTERRA FARMS LLC		31 SADDLE TRAIL DR	DOVER	NH	03820
N0008-001004	56 SADDLE TRAIL DR	PAUL PETER T TRUSTEE	PETER T PAUL LIVING TRUST	56 SADDLE TRAIL DR	DOVER	NH	03820
N0008-001010	31 SADDLE TRAIL DR	BONTERRA FARMS LLC		31 SADDLE TRAIL DR	DOVER	NH	03820
N0008-001003	44 SADDLE TRAIL DR	CRAIG JOHN S & JUDITH L TTS OF REV TRST	CRAIG JUDITH L & JOHN S TTS OF REV TRST	44 SADDLE TRAIL DR	DOVER	NH	03820
		WOODBURN COMPANY LANDSCAPE ARCHIT	ROBERTA WOODBURN	103 KENT PLACE	NEWMA	NH	03857
		NORWAY PLAINS ASSOCIATES	GLENN GRISWOLD	2 CONTINENTAL BLVD	ROCHES	NH	03866

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday June 16, 2025
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Russ Warnock, Brianna Group (Alternate), Robert Atwood (Secretary)
Absent (Excused): Kristen Murphy, Steve Fellows (Vice Chair), Abigail Lyon
Absent (Unexcused):
STAFF PRESENT: Makayla Edgecomb (Conservation Planner)
OTHERS PRESENT:

1. **CALL TO ORDER AND ROLL CALL**
   The meeting was convened at 5:50 PM.

2. **CITIZENS' FORUM**

3. **APPROVAL OF THE PRIOR MEETING MINUTES** MAY 12TH , 2025

R. Warnock moved to approve the minutes of May 12th. R. Atwood seconded. Vote: 3 in favor with 1 abstention

4. **OLD BUSINESS:**
   None

5. **NEW BUSINESS**
   M. Edgecomb mentioned that item A on the old agenda has requested to table their item to the July meeting due to a conflict with another meeting.

   A. City of Dover Conditional Use Permit for Coda Products, Inc. Assessor's Map G, Lot(s) 1A zoned CM, located at 180 Crosby Road. Proposal seeks to allow a 1,352 sf of wetland buffer impact to allow the construction of a loading dock to an existing facility. There are no direct impacts to wetlands.

Jace Gregoire, CivilWorks presented the item. He described the existing location and site, details of the proposal including pavement/greenspace breakdown, impacts, and concrete head wall.

He addressed member comments: paving for turn-around area, snow management, wetlands locations, grading, and entrance culvert replacement.

Member comment: R. Warnock
This is a natural resources hot spot area which is an interesting dichotomy for this industrial area. There's nothing wrong with this proposal, but this area has been designated a high point of overlapping resources. There is a mismatch of priorities within the City about this portion/ zone.

R. Warnock moved to endorse the CUP as presented. B. Group seconded. Vote: All in favor with 0 abstention.

   B. City of Dover Conditional Use Permit for John and Judy Craig, Assessor's Map N, Lot(s) 8-1-3, zoned R-40, located at 44 Saddletrail Drive. Proposal seeks to allow temporary impacts of 4,922sf, and permanent impacts of 566sf. within the conservation district. To allow for a 3.5' high retaining wall with stairs, and a boardwalk.

Robbi Woodburn, landscape architect with Woodburn and Company presented the item. She described the CUP requests for adding a boardwalk and steps within the 100' setback and to do work within the steep slope of the conservation district.

She addressed the details of the proposal, vegetation plans, and wall construction options and processes.

She addressed member comments and questions: age of development, original slopes (man-made slope from a relatively recent development), vegetation, grade, proposed grading after wall installation, permanent impacts due to the proposed boardwalk, any additional proposed disturbances within the buffer (none), purpose of the boardwalk (any runoff mitigation?), and specifications of the boardwalk.

R. Warnock moved to endorse the CUP without the boardwalk element.

He explained his thoughts on the matter noting this is a recent development which caused some disturbances, then a pool was added at some point within/nearby the buffer, now a boardwalk is proposed. He sees the value of the wall. It is offsetting erosion (potentially caused by the development).
The boardwalk is for the enjoyment of the owners, is not offsetting erosion, will take up vegetative space, and is an elective permanent conservation district impact.

R. Atwood seconded. Vote: All in favor with 0 abstention.

C. Request for funds up to $16,000 for ongoing conservation parcel.

M. Edgecomb clarified the parcel is about 50 acres, is privately owned, and the City is looking to negotiate a conservation easement. The funds are for an open space assessment and survey of the property.

B. Group moved to approve spending $16,000 for the purposes presented. R. Atwood seconded. Vote: All in favor with 0 abstention.

6. REPORT FROM THE CHAIR

a. Review of Correspondence Received from NH Department of Environmental Services

None

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

M. Edgecomb reported ongoing work relating to events for Ash trees. Routine filling and planting is scheduled. Planning to apply for CIP funds for the project.

R. Atwood asked about the trees coming down near the library and if all the affected trees there should be taken down at the same time while the equipment is there.

B. Other:

Handbook:

M. Edgecomb sent the handbook out to everyone and asked for feedback on the content. Send her an email.

8. ADJOURNMENT

R. Warnock moved and R. Atwood seconded to adjourn. Vote: U/A

The meeting was adjourned at 6:34PM

woodburn & company
LANDSCAPE ARCHITECTURE
Since 1994 reflecting your vision.

May 28, 2025

Mr. William Hunt
Chair
Dover Conservation Commission
228 Central Avenue
Dover, New Hampshire 03820

RE: 44 Saddle Trail Drive – Request for Conditional Use Permit

Chair Hunt and Conservation Commission Members:

This letter communicates to you that we have uploaded documentation to the City's website for a request for Conditional Use Permit for work within the 100' Wetland setback and the Conservation district for steep slopes, which requires review by the Conservation Commission.

The property is owned by our clients John and Judy Craig who bought it from the original homeowners in 2023. After living there, the homeowners realized that the steep slopes at the rear of the house make it very difficult for them to safely access the lower areas of the yard. Additionally, they observed periodic soil erosion on the steeper areas of the slope.

The proposed project is the addition of a 3.5' high retaining wall and steps along with a 30' boardwalk on helical piers within the 100' shoreland buffer zone.

The proposed retaining wall will break up the length of the slope providing a place mid-slope for surface runoff to collect and percolate down into the ground, mitigating the existing erosion issue. The steps located in the wall provide safer access to the lower areas of the site for these active senior homeowners.

Additionally, the area above the proposed wall will be planted with a combination of native and ornamental shrubs and perennials that will reduce the amount of lawn in the rear yard.

The proposed boardwalk, which will be built on helical piers to minimize site disturbance, will protect the edge of the forest where an existing drainage pipe daylights into the woodland.

PHONE 603.659.5949 • FAX 603.659.5939
102A KENT PLACE
NEWMARKET, NH 03857
www.woodburnandcompany.com
www.houzz.com/pro/robwoodburn

The plan also provides mitigation with the proposed addition of native vegetation in the woodland between the existing lawn area and the river. Native perennials and ferns, Blueberry, Rhododendron will be planted to enhance this woodland area.

The proposed work within the buffer will allow for safe access to the lower areas of the property, reduce the potential for soil erosion on the steep slope and protect the woodland buffer with the addition of the short section of boardwalk. Proposed native plantings will enhance the existing woodland buffer mitigating the impact of the proposed addition of the wall and steps.

The proposed plan illustrates the use of erosion control as required by NHDES and Dover regulations.

Sincerely,

Robbi Woodburn

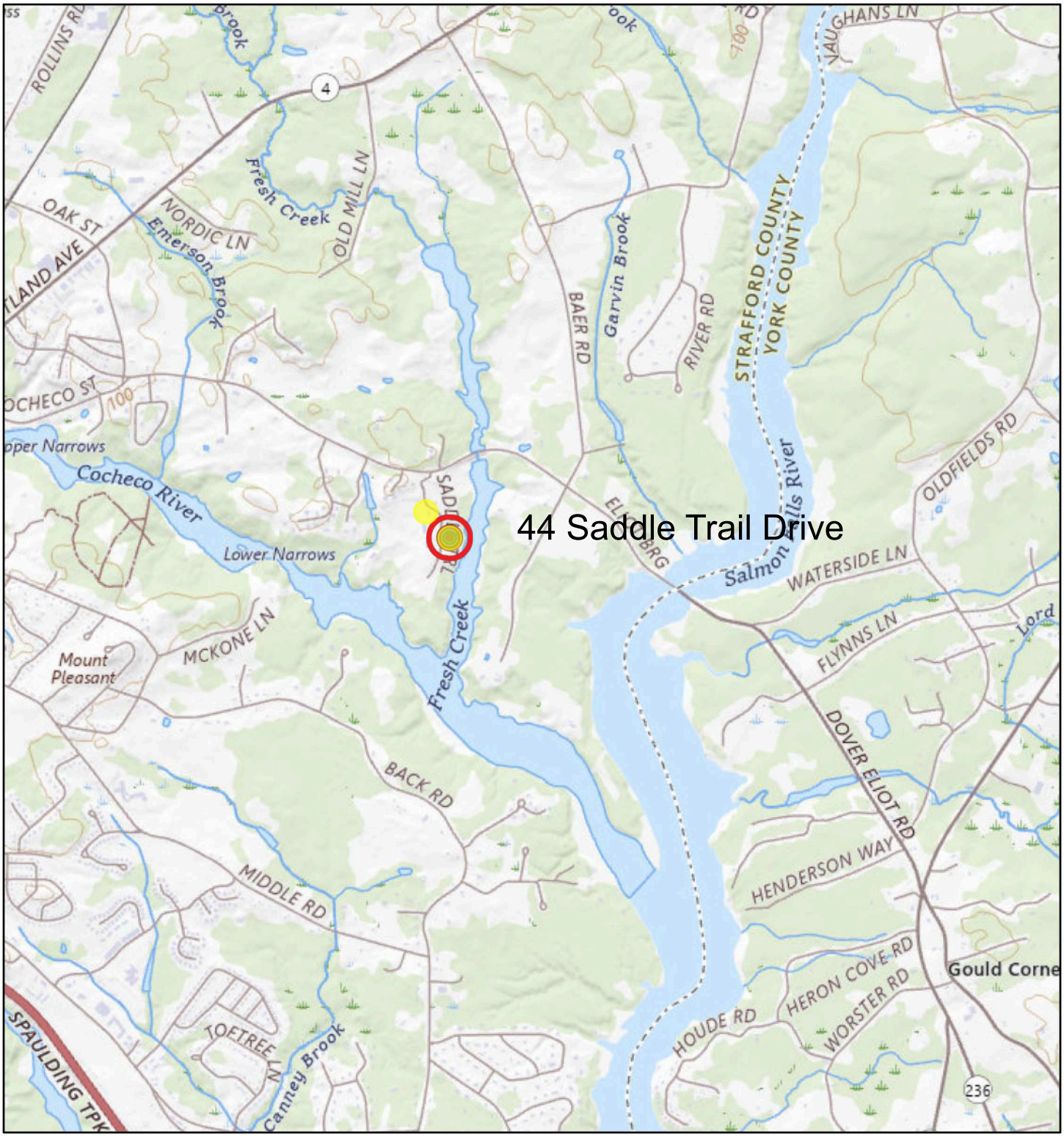
Roberta Woodburn RLA NH Lic#002
Principal

Contents:

Conditional Use application form	
Locus Map	
Existing conditions plan by Norway Plains Associates	Dated 2-14-2019
Existing Conditions Photos	
L-1 44 Saddle Trail Drive – Proposed Landscape Site Plan	Dated October 2024
Condition Use Criteria Narrative	Dated May 28,2025
NHDES – Shoreland Permit by Notification Form	Dated May 2025

PHONE 603.659.5949 • FAX 603.659.5939
102A KENT PLACE
NEWMARKET, NH 03857
www.woodburnandcompany.com
www.houzz.com/pro/robwoodburn

Map by NH DES OneStop Data Mapper



5/28/2025, 1:38:14 PM

1:36,474

0 0.23 0.45 0.9 mi

0 0.35 0.7 1.4 km

ArcGIS World Geocoding Service

Layers

Red: Band_1

Green: Band_2

Blue: Band_3

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S.

LAND SURVEYORS

CIVIL ENGINEERS

RESERVED REGISTRY OF DEEDS

LEGEND EXISTING

- MONUMENT
- BOUND
- NO MONUMENT FOUND OR SET
- TREES
- WELL
- LIGHTPOLE
- MAILBOX
- TREELINE
- N 89°56'30" E 425.61' — PROPERTY LINE
- DRAIN LINE
- FENCE
- EP — EDGE OF PAVEMENT

ABBREVIATION LEGEND:
GBF - CONCRETE BOUND FOUND
GBF - GRANITE BOUND FOUND
(+2") - DENOTES HEIGHT OF THE MONUMENT

NH-GRID

TAX MAP N8, LOT 1-10
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 497

SADDLE TRAIL DRIVE

250' PROTECTED SHORELAND

TAX MAP N8, LOT 1-4
PETER T. PAUL LIVING TRUST
56 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4956, PG. 741

TAX MAP N8, LOT 1-2
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 494

TAX MAP N8, LOT 1-3
80,093 SQ. FT.
1.84 ACRES

RADIUS: 175.00'
LENGTH: 24.78'

N 04°24'53" W 96.86'
N 03°41'55" E 244.90'
S 79°58'39" E 226.05'
N 79°58'39" W 206.03'
S 04°24'16" W 363.31'
SURVEY TIE LINE
397'± ALONG RIVER

6" PVC ELEV: 29.8'
15" CPP ELEV: 29.1'
15" CPP ELEV: 29.0'
15" CPP ELEV: 28.85'
15" CPP ELEV: 28.54'
3" CPP ELEV: 13.91'

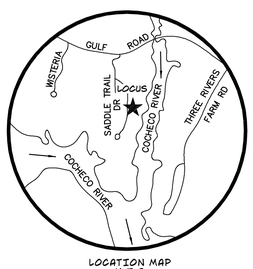
RIPRAP
WOODED
GRASS
LANDSCAPED
LANDSCAPED AREA
PAVED DRIVEWAY
SEPTIC TANK
150' WOODLAND BUFFER
EXISTING HOUSE #44
ELEC. METER W/ UNDERGROUND ELEC.
BUILDING OVERHANG
A/C UNITS (X3)
POOL FILTER/ EQUIPMENT
LEACH FIELD
WOOD/WIRE FENCE
CONC. RET. WALL
HOT TUB
CONCRETE PAVERS
POOL
DECK
SECOND FLOOR DECK
GENERATOR
UNDERGROUND PROPANE TANK (APPROX)
GRAVEL
OUTDOOR KITCHEN
IRRIGATION CONTROL VALVE
11' GATE
10' GATE
4' GATE
30' WIDE DRAINAGE EASEMENT. SEE REF PLAN 1.
STONE PATH
WIRE FENCE
DOCK
50' WATERFRONT BUFFER
22'± TO EDGE OF RIVER
18'± TO EDGE OF RIVER
NO POINT SET DUE TO LOCATION OF TRANSFORMER PAD
CONCRETE PAD W/ TRANSFORMER
UTILITY BOXES
MB #44
MB #56
GBF (+1")
RBF (+1")
RBF (+6")
RBF (+3")

FLOW

COCHECO RIVER

NHDES SHORELAND PERMIT # 2016-00171

LOCATION MAP
N.T.S



NOTES:

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   -ALL CONSTRUCTION ALTERING THE SURFACE OF THE GROUND SHALL BE SET BACK 50' FROM A WETLAND PROTECTION DISTRICT.
   -NO SEPTIC TANKS OR LEACH FIELDS WITHIN 75' OF ANY WETLAND PRETECTION ZONE.
   RIVERFRONT RESIDENTIAL OVERLAY DISTRICT- ALL LAND LOCATED WITHIN 250' OF ANY TIDAL WATERBODY OR TIDAL RIVER.
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   -150' MINIMUM SHORELAND FRONTAGE.
4. MINIMUM LOT REQUIREMENTS (OPEN SPACE SUBDIVISION):LOT SIZE = 20,000 SQ FT, FRONTAGE = 40 FT.
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7. THE SURVEYED PARCEL IS PARTIALLY LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0330E.
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STATE OF NEW HAMPSHIRE
No. 1129
GLENN D. ORISWOLD
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP N8, LOT 1-3
OWNER OF RECORD:
JOHN S. & JUDITH LAPKIN CRAIG
44 SADDLE TRAIL DRIVE
DOVER, NH 03820
BOOK 5106, PAGE 874

EXISTING CONDITIONS SURVEY
44 SADDLE TRAIL DRIVE
DOVER
NEW HAMPSHIRE
FOR:
JOHN & JUDY CRAIG

1" = 20' OCTOBER 2024

GRAPHIC SCALE
20' 0 10' 20' 40' 80'

REVISIONS:

FILE NO. 439
PLAN NO. C-3603
DWG. NO. 23260

31 MOONEY STREET, ALTON, NH 603-875-3948

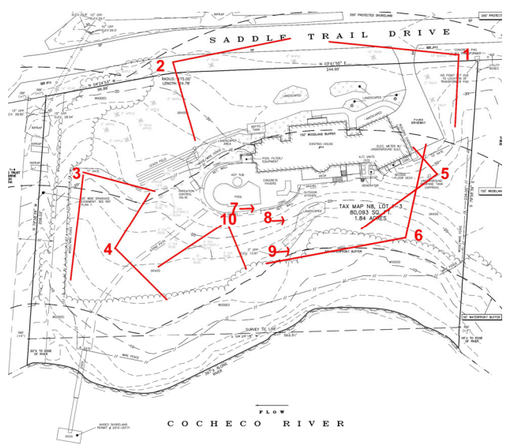
NORWAY PLAINS ASSOCIATES, INC.

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948

EXISTING PHOTO #1

EXISTING PHOTO #2

VIEW KEY

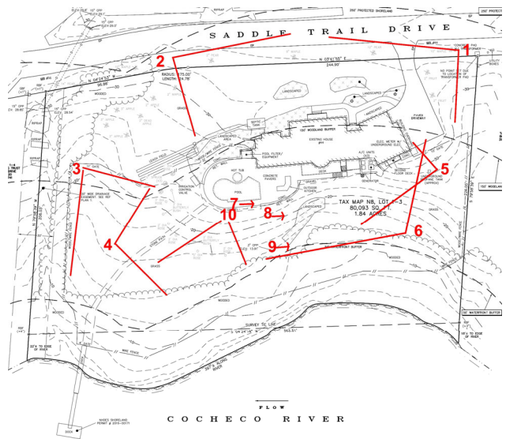


woodburn & company
LANDSCAPE ARCHITECTURE
Since 1994 *reflecting your vision.*
103 Kent Place Newmarket, New Hampshire 03857 Ph.603-659-5949

EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #3

EXISTING PHOTO #4



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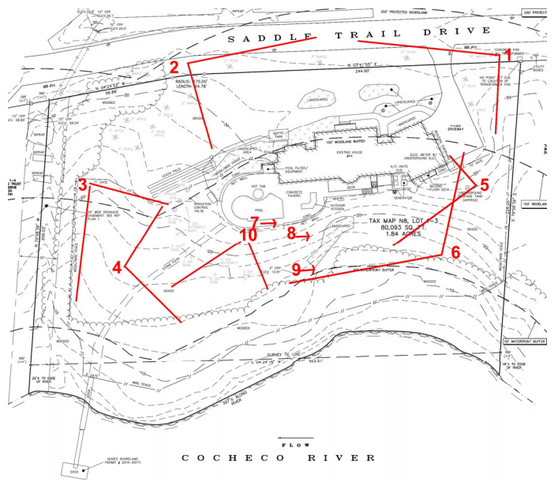
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #5



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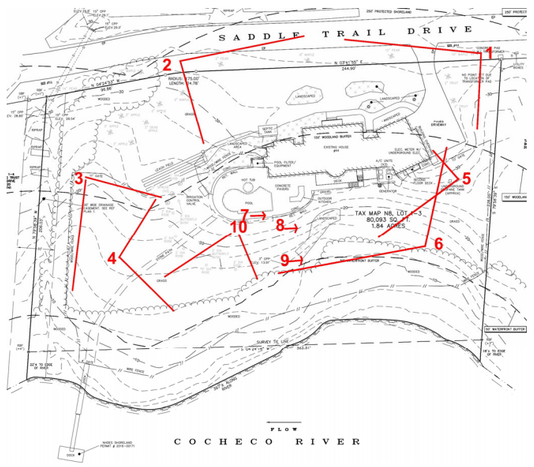
EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #6



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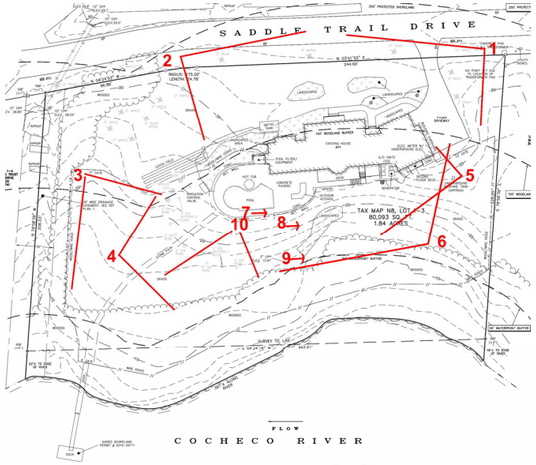
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #7

EXISTING PHOTO #8

EXISTING PHOTO #9



VIEW KEY

EXISTING PHOTO #10

woodburn & company
LANDSCAPE ARCHITECTURE
Since 1994 *reflecting your vision.*
103 Kent Place Newmarket, New Hampshire 03857 Ph.603-659-5949

EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

Plant List

TREES

Symbol	Botanical Name	Common Name	Front Bed	Rear of House	Woodland	Total Quantity	Size	Comments	Native
Am	*Amelanchier 'Robin Hill'*	Robin Hill Serviceberry			3	3	7-8' ht	multi-stemmed B&B	Y
Ham	*Hamamelis intermedia 'Arnold Promise'*	Arnold Promise Witchhazel			2	2	4-5' ht.	multi-stemmed B&B	N
Pr	*Prunus serrulata 'Kwanzan'*	Kwanzan Cherry		2		2	3" cal	BB	N
PoG	*Picea orientalis 'Gowdy'*	Gowdy Oriental Spruce		1		1	10-12' ht.	BB	N

SHRUBS

Symbol	Botanical Name	Common Name	Front Bed	Rear of House	Woodland	Total Quantity	Size	Comments	Native
Cham	*Chamaecyparis obtusa 'Gracillius Compacta'*	Compact Hinoki Falsecypress	1			48	4-5' ht	BB	N
For	*Forsythia viridissima 'Bronxensis'*	Dwarf Forsythia		48		12	3 gal		N
HyA	*Hydrangea a. 'Wee White'*	Wee White Hydrangea	12			12	3 gal		N
HyB	*Hydrangea paniculata 'Bobo'*	Bobo Hydrangea	8			8	3 gal		N
HyBH	*Hydrangea arborescens 'Bar Harbor'*	Bar Harbor Hydrangea	1	2		3	5 gal		
HyBJ	*Hydrangea macrophylla 'Let's Dance Beau Jangles'*	Let's Dance Beau Jangles	6			6	3 gal		N
HyTTS	*Hydrangea 'Tiny Tuff Stuff'*	Tiny Tuff Stuff Hydrangea	7	52		59	3 gal		
HyL	*Hydrangea paniculata 'Little Quickfire'*	Little Quickfire Hydrangea		2		2	3 gal		N
Rh	*Rhododendron 'Scintillation'*	Scintillation Rhododendron	2			2	2.5-3' ht	BB Full	N
RhE	*Rhododendron 'Album Elegans'*	White Elegans Rhododendron	3			3	5 gal		
RhM	*Rhododendron maximum*	Rosebay Rhododendron			15	15	3-4'ht	BB Heavy	Y
Rhus	*Rhus aromatica 'Grow-Low'*	Grow Low Sumac		36		36	#3		
RosKB	*Rosa 'Knockout Blushing'*	Blushing Knockout Rose		17		17	3 gal		N
RosPD	*Rosa 'Popcorn Drift'*	Popcorn Drift Rose		20		20	3 gal		N
RosAD	*Rosa 'Apricot Drift'*	Apricot Drift Rose	6			6	3 gal		N
Sp	*Spirea 'Double Play Doozie'*	Double Play Doozie Spirea	3	11		14	3 gal		N
Spr	*PICEA pungens 'Waldbrunn'*	Waldbrunn Spruce	1			1	6 gal		
SyB	*Syringa 'Bloomerang Dark Purple'*	Dark Purple Bloomerang Lilac		22		22	5 gal		N
Tax	*Taxus media 'Everlow'*	Everlow Yew	5			5	18-24"	BB	N
TPhy	*Transplanted Hydrangea*		1			1	ex	transplant	
TPspr	*Transplanted Spruce*		1			1	ex	transplant	
VA	*Vaccinium angustifolium*	Lowbush Blueberry			600	600	2 qt	plant 24" o.c.	Y

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

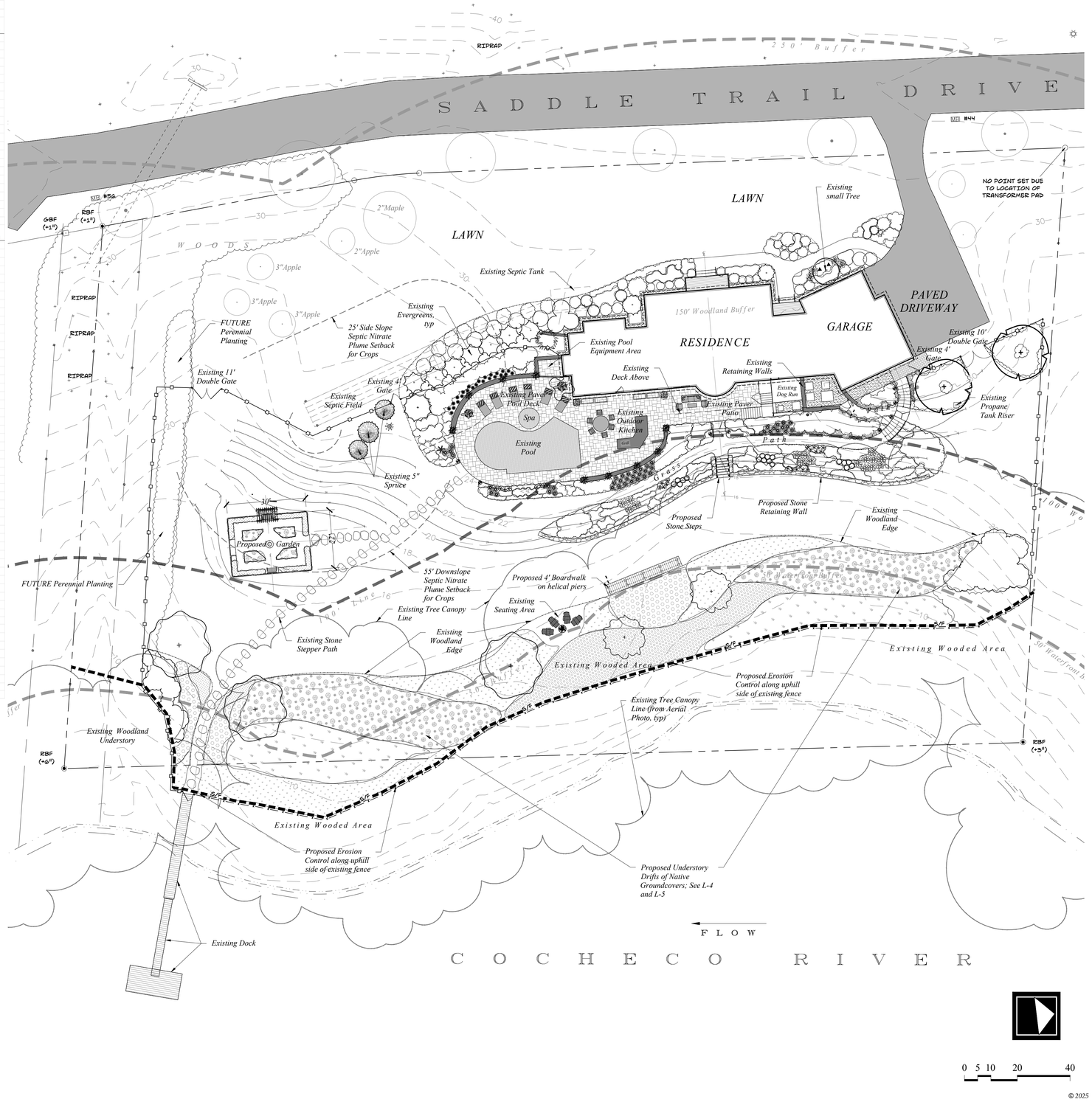
Symbol	Botanical Name	Common Name	Front Bed	Rear of House	Woodland	Total Quantity	Size	Comments	Native
A	*Achillea 'Moonshine'*	Moonshine Yarrow		7		7	1 gal		
All	*Allium 'Millenium'*	Millenium Ornamental Onion		25		25	1 gal		N
Alch	*Alchemilla mollis*	Lady's Mantle		118		118	1 gal		N
An	*Anemone 'Honorine Jobert'*	Honrine Jobert Anemone		32		32	1 gal		N
AnS	*Anemone hupehensis 'September Charm'*	Japanese Anemone	6			6	1 gal		
Arc	*Arctostaphylos uva-ursi*	Bearberry	16			16	2 qt		Y
As	*Asarum canadense*	Canadian Ginger			1160	1160	1 qt	plant 12" o.c.	Y
Ast	*Astilbe 'Visions in Pink'*	Visions in Pink Astilbe	8	26		34	1 gal		N
Cp	*Caltha palustris*	Marsh Marigold			58	58	2 qt	plant 18" o.c.	Y
Comp	*Comptonia peregrina*	Sweetfern			448	448	2qt	24" on center	Y
Dp	*Dennstaedia punctiloba*	Hayscented Fern			340	340	2 qt	plant 30" o.c.	Y
Ech	*Echineacea purperea 'Magnus'*	Magnus Coneglower		19		19	1 gal		Y
GB	*Geranium cantabrigiense 'Biokovo'*	Biokovo Geranium		40		40	1 gal		
GD	*Geranium pratense 'Dark Reiter'*	Dark Rider Meadow Cranesbill		9		9	1 gal		
GNH	*Geranium sanguinium 'NH Purple'*	NH Purple Cranesbill		34		34	1 gal		Y
GS	*Geranium sang. var. striatum*	Striatum Bloody Cranesbill		12		12	1 gal		
Hem	*Existing Daylilies divided*			ex		24	ex	divide existing to fill area	
Heu1	*Heuchera americana 'Green Spice'*	Green Spice Alum Root		48		48	1 gal		Y
HeuF	*Heuchera 'Frosted Violet'*	Frosted Violet Coral Bells		54		54	1 gal		
HB	*Hosta 'Blueberry Muffin'*	Blueberry Muffin Plaintain Lily		8		8	1 gal		
HFW	*Hosta 'Frances Williams'*	Frances Williams Plaintain Lily	2			2	1 gal		N
HAM	*Hosta 'August Moon'*	August Moon Plaintain Lily		8		8	1 gal		
HE	*Hosta 'Sieboldiana Elegans'*	Elegans Plaintain Lily	2			2	1 gal		N
Irg	*Iris germanica*	German Bearded Iris		48		48	1 gal	Owner's choice	
Irs	*Iris Mix:*								
	Iris sibirica 'Ceasar's Brother'	Ceasar's Brother Siberian Iris		9		9	1 gal	mix together	
	Iris sibirica 'Moon Silk'	Moon Silk Siberian Iris		8		8	1 gal	mix together	
Lam	*Lamium maculatum 'Pink Pewter'*	Pink Pewter Dead Nettle		16		16			
Lav	*Lavandula 'Hidcote'*	Lavender	7	30		37	1 gal		N
Leu	*Leucanthemum vulgare 'Becky'*	Shasta Daisy		14		14	1 gal		
Lia	*Liatris Mix:*								
	Liatris spicata 'Floristan White'	Floristan's White Liatris		13		13	1 gal	mix together	Y
	Liatris spicata 'Kobold'	Kolbold Liatris		13		13	1 gal	mix together	Y
Mon	*Monarda 'Bee-You Bee Free'*	Bee You Bee Free Beebalm		20		20	1 gal		Y
Ms	*Matteutia struthiopteris*	Ostrich Fern			110	110	1 gal	plant 24" o.c.	Y
Nar	*Daffodil Mix:*								
	Narcissus 'Mount Hood'	Mount Hood Daffodil				TBD	topsize	mix together	N
	Narcissus 'Dutch Masters'	Dutch Masters Daffodil				TBD	top size	mix together	N
	Narcissus 'King Alfred'	King Alfred Daffodil				TBD	top size	mix together	N
Pe	*Peony Mix:*								
	Paeonia 'Bowl of Beauty'	Bowl of Beauty Peony		15		15	1 gal	mix together	N
	Paeonia 'Sarah Bernhardt'	Sarah Bernhardt Peony		15		15	1 gal	mix together	N
	Paeonia 'Dutchess de Namours'	Dutchess de Namours Peony		15		15	1 gal	mix together	
Per	*Perovska atriplicifolia 'Little Spire'*	Little Spire Russian Sage	9			9	1 gal		N
Ph	*Phlox 'Emerald Cushion'*	Emerald Cushion Phlox		5		5	1 gal		N
PhD	*Phlox divaricata*	Woodland Phlox			234	234	1 gal	plant 12" o.c.	Y
Rud	*Rudbeckia x 'American Gold Rush'*	American Gold Rush Black Eyed Susan		12		12	1 gal		Y
Salv	*Salvia 'Caradonna'*	Caradonna Sage		25		25	1 gal		N
Se	*Sedum Sunsparkler® 'Angelina's Teacup'*	Angelina's Teacup Stonecrop		31		31	1 gal		
Sed	*Sedum 'Autumn Joy'*	Autumn Joy Sedum	9	15		24	1 gal		N
Stac	*Stachys 'Silver Carpet'*	Silver Carpet Lamb's Ears		10		10	1 gal		N
TPper	*Transplanted Perovskia*		5			5	ex	transplant	N
V	*Verbena bonariensis*	Purpletop vervain		TBD		TBD	TBD	in pots	
P	*Pollinators for Vegetable Garden*			TBD		TBD	TBD	Owner's Choice	
Annuals	*Annual Mix for pots*			TBD		TBD	TBD	Owner's Choice in pots	

Legend

(2) ▲	Proposed Up Light	32	Minor Existing Contour
(8)	Proposed Path Light	10	Major Existing Contour
(8)	Proposed Wall Light	down (#R)	(# of Risers) Proposed Step(s) Down
		+100.00 TS	Proposed Top of Step
+	Proposed Tree	+100.00 BS	Proposed Bottom of Step
		+100.00 TW	Proposed Top of Wall
●	Existing Tree	+100.00 BW	Proposed Bottom of Wall

Lighting Schedule

TBD



woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

Craig Residence

LANDSCAPE SITE PLAN

44 Saddle Trail Drive

Drawn By:	WSA
Checked By:	RW
Scale:	1"=20'-0"
Date:	2025-05-02
Revisions:	2025-05-27 issued for CUP

L-1

Sheet 1 of 6

© 2025 Woodburn & Company Landscape Architecture, LLC

reserved registry of deeds

LEGEND EXISTING

- MONUMENT
- BOUND
- NO MONUMENT FOUND OR SET
- OAK TREE (EXCEPT WHEN NOTED)
- PINE TREE (EXCEPT WHEN NOTED)
- WELL
- LIGHTPOLE
- MAILBOX
- TREELINE
- N 89°56'30" E 425.61' — PROPERTY LINE
- DRAIN LINE
- FENCE
- EP — EDGE OF PAVEMENT
- S/F — PROPOSED SILT FENCE

ABBREVIATION LEGEND:
CBF – CONCRETE BOUND FOUND
GBF – GRANITE BOUND FOUND
(+2") – DENOTES HEIGHT OF THE MONUMENT

NH–GRID

TAX MAP N8, LOT 1–10
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 497

TAX MAP N8, LOT 1–4
PETER T. PAUL LIVING TRUST
56 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4956, PG. 741

TAX MAP N8, LOT 1–2
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 494

SADDLE TRAIL DRIVE

250' PROTECTED SHORELAND

150' WOODLAND BUFFER

50' WATERFRONT BUFFER

RADIUS: 175.00'
LENGTH: 24.78'

N 04°24'53" W 96.86'

N 03°41'55" E 244.90'

N 79°58'39" W 206.03'

S 79°58'39" E 226.05'

SURVEY TIE LINE
S 04°24'16" W 363.31'

397'± ALONG RIVER

22'± TO EDGE OF RIVER

18'± TO EDGE OF RIVER

6" PVC ELEV: 29.8'
15" CPP ELEV: 29.1'
15" CPP ELEV: 29.0'
15" CPP ELEV: 28.85'
15" CPP ELEV: 28.54'
3" CPP ELEV: 13.91'

GBF (+1")
RBF (+1")
RBF (+6")
RBF (+3")

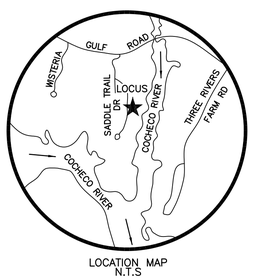
#56
#44

RIPRAP
WOODED
GRASS
LANDSCAPED
LANDSCAPED AREA
PAVED DRIVEWAY
CONCRETE PAD W/ TRANSFORMER
UTILITY BOXES
NO POINT SET DUE TO LOCATION OF TRANSFORMER PAD
SEPTIC TANK
EXISTING HOUSE #44
ELEC. METER W/ UNDERGROUND ELEC.
BUILDING OVERHANG
POOL FILTER/ EQUIPMENT
A/C UNITS (X3)
LEACH FIELD
WOOD/WIRE FENCE
WIRE FENCE
CONC. RET. WALL
HOT TUB
POOL
CONCRETE PAVERS
DECK
BALCONY
GENERATOR
GRAVEL
OUTDOOR KITCHEN
IRRIGATION CONTROL VALVE
11' GATE
10' GATE
4' GATE
30' WIDE DRAINAGE EASEMENT. SEE REF PLAN 1.
STONE PATH
DOCK
NHDES SHORELAND PERMIT # 2016–00171

2" PEAR
8" MAPLE
12" PEAR
10" MAPLE
2" MAPLE
2" APPLE
3" APPLE
2" DEAD APPLE
14" PEAR
2" FRUIT
1" DIA ROSE
5" SPRUCE (X3)
3" DIA ROSE
3" DIA BUTTERFLY BUSH
2" DIA ROSE
2" DIA BUTTERFLY BUSH
10" HICKORY
4" HICKORY
BIRCH

25' X 50' TREE POINT GRID POINTS

GRID 1	60
GRID 2	75
GRID 3	135
GRID 4	120
GRID 5	130
GRID 6	105
GRID 7	145
GRID 8	120
GRID 9	225
GRID 10	95
GRID 11	165
GRID 12	100
GRID 13	95
GRID 14	80



LOCATION MAP
N.T.S

FLOW

COCHECO RIVER

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OWNER OF RECORD:
JOHN S. & JUDITH LAPKIN CRAIG
44 SADDLE TRAIL DRIVE
DOVER, NH 03820
BOOK 5106, PAGE 874

EXISTING CONDITIONS SHORELAND PLAN 44 SADDLE TRAIL DRIVE DOVER NEW HAMPSHIRE FOR: JOHN & JUDY CRAIG

1" = 20' MAY 2025

GRAPHIC SCALE
20' 0 10' 20' 40' 80'

REVISIONS:

FILE NO. 439
PLAN NO. C–3603
DWG. NO. 23260 SL–1

reserved registry of deeds

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- NO MONUMENT FOUND OR SET
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- PINE TREE (EXCEPT WHEN NOTED)
- WELL
- LIGHTPOLE
- MAILBOX
- TREELINE
- N 89°56'30" E 425.61' — PROPERTY LINE
- DRAIN LINE
- FENCE
- EP — EDGE OF PAVEMENT
- S/F — PROPOSED SILT FENCE

CONSTRUCTION NOTES:
1. INSTALL SILT FENCE AND FILTER SOCK AS SHOWN.
2. CONSTRUCT FLOW BEDS.
3. REGRADE LAWN AREA AND PLANT FLOWER.
4. CONSTRUCT RETAINING WALLS.
5. CONSTRUCT NEW PERVIOUS PAVER AREAS.
6. RANDOMLY PLANT NATIVE SPECIE PLANTS AND TREES.
7. STABLIZE DISTURBED AREAS.
8. REMOVE SILT FENCE AND FILTER SOCKS ONCE SITE IS STABILIZED.

NH-GRID

TAX MAP N8, LOT 1-10
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 497

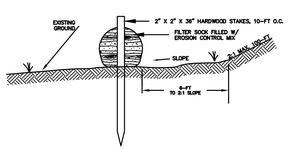
SADDLE TRAIL DRIVE

250' PROTECTED SHORELAND

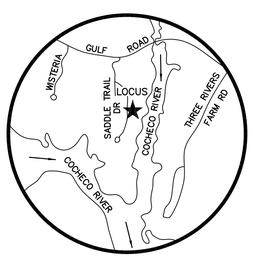
TAX MAP N8, LOT 1-4
PETER T. PAUL LIVING TRUST
56 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4956, PG. 741

TAX MAP N8, LOT 1-2
BONTERRA FARMS, LLC
31 SADDLE TRAIL DRIVE
DOVER, NH 03820
BK. 4582, PG. 494

ABBREVIATION LEGEND:
CBF – CONCRETE BOUND FOUND
GBF – GRANITE BOUND FOUND
(+2") – DENOTES HEIGHT OF THE MONUMENT



FILTER SOCK CROSS-SECTION



LOCATION MAP
N.T.S

FLOW

COCHECO RIVER

NHDES SHORELAND PERMIT # 2016-00171

NOTES:
1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED CONDITIONS OF TAX MAP N8, LOT 1-3.
2. TOTAL PARCEL AREA: MAP N8, LOT 1-3 80,093 SQUARE FEET; 1.84 ACRES.
3. PARCEL IS ZONED: R-40 RURAL RESIDENTIAL.
   OVERRIDING DISTRICTS:
   - CONSERVATION DISTRICT–WITHIN 100' OF THE REFERENCE LINE OF ANY WATER BODY. –ANY SLOPES IN EXCESS OF 20%.
   - WETLAND PROTECTION DISTRICT–ALL AREAS OF WETLANDS. –ALL CONSTRUCTION ALTERING THE SURFACE OF THE GROUND SHALL BE SET BACK 50' FROM A WETLAND PROTECTION DISTRICT. –NO SEPTIC TANKS OR LEACH FIELDS WITHIN 75' OF ANY WETLAND PRETECTION ZONE.
   - RIVERFRONT RESIDENTIAL OVERLAY DISTRICT–ALL LAND LOCATED WITHIN 250' OF ANY TIDAL WATERBODY OR TIDAL RIVER. –MINIMUM LOT SIZE SHALL BE THREE TIMES THAT REQUIRED BY ARTICLE 170-12. –150' MINIMUM SHORELAND FRONTAGE.
4. MINIMUM LOT REQUIREMENTS (OPEN SPACE SUBDIVISION):LOT SIZE = 20,000 SQ FT, FRONTAGE = 40 FT.
5. BUILDING SETBACKS: FRONT YARD = 20 FT, SIDE YARD = 20 FT, REAR YARD = 20 FT. (ULTIMATE CERTIFICATION AND VERIFICATION OF THE ZONE DESIGNATION AND APPLICABLE LOCATION OF BUILDING SETBACK REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE ZONING OFFICER IN THE SUBJECT MUNICIPALITY.)
6. THE SURVEYED PARCEL IS SERVICED BY ON-SITE WATER AND SEPTIC.
7. THE SURVEYED PARCEL IS PARTIALLY LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0330E.
8. HORIZONTAL DATUM: NH STATE PLANE, NAD83(2011), VERTICAL DATUM: NAVD88.
9. ABUTTING PROPERTY INFORMATION WAS TAKEN FROM DOVER TAX RECORDS. ABUTTING PROPERTY LINES WERE TAKEN FROM DOVER TAX MAPS AND ARE FOR INFORMATIONAL PURPOSES ONLY.
10. SADDLE TRAIL DRIVE IS A PRIVATE ROAD, PER NH DOT.

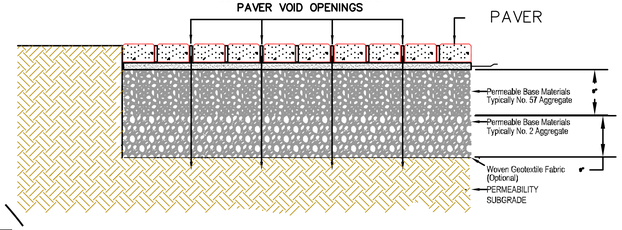
REFERENCE PLANS:
1. "OPEN SPACE SUBDIVISION WITH COMMERCIAL COMPONENT, PREPARED FOR WOODWIND FARMS, LLC. TAX MAP N, LOT 8-1, GULF ROAD, DOVER, NEW HAMPSHIRE." DATED: JULY 17, 2007 AND PREPARED BY DOUCET SURVEY INC. RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 93-55 & 56.
2. "SHORELAND PERMIT PLAN SET, LOT 3, SADDLE TRAIL DRIVE, DOVER NH" DATED: DECEMBER 2015 BY NORWAY PLAINS ASSOCIATES, INC. NOT RECORDED – NHDES SHORELAND PERMIT NO. 2016-00171

PERVIOUS PAVER MAINTENANCE NOTES:
MONTHLY: REMOVE DEBRIS, GRASS CLIPPINGS, STICKS, SEDIMENT AND LEAVES

SEASONALLY:
–REMOVE SNOW WITH RUBBER–TIPPED SHOVEL TO REDUCE DAMAGE TO FLAGSTONE.
–WASH PAVERS TO REMOVE SILTS AND SEDIMENT TO PREVENT CLOGGING.

PERVIOUS PAVER DETAIL

SURFACE WATER FLOWS INTO PAVER VOID OPENINGS



TAX MAP N8, LOT 1-3
OWNER OF RECORD:
JOHN S. & JUDITH LAPKIN CRAIG
44 SADDLE TRAIL DRIVE
DOVER, NH 03820
BOOK 5106, PAGE 874

TOPOGRAPHIC SHORELAND PLAN
44 SADDLE TRAIL DRIVE
DOVER
NEW HAMPSHIRE
FOR:
JOHN & JUDY CRAIG

1" = 20' MAY 2025

GRAPHIC SCALE
20' 0 10' 20' 40' 80'

REVISIONS:

DIG SAFE
IT'S THE LAW!!! CALL TOLL FREE
1-888-344-7233
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

FILE NO. 439
PLAN NO. C-3603
DWG. NO. 23260 SL-1

woodburn & company
LANDSCAPE ARCHITECTURE
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May 28, 2025

44 Saddle Trail Drive – Craig Residence
Conditional Use Permit Application
Criteria for Approval

Wetlands District CUP Criteria:

A) Practicable Alternative: There is no less adverse impact on the area:

Portions of the rear of the current site are steeply sloping and prone to erosion. This steepness makes it very difficult for the homeowners, who are active seniors, to safely access the lower areas of the property. To facilitate full access and use of the property, the plan proposes a low, 3.5' high, retaining wall and steps that create safe access and mitigates the steepness of the slope. The proposed retaining wall also slows surface runoff down the slope allowing it a place to percolate into the ground, better protecting against potential erosion.

A short section of boardwalk, built on helical piers, is proposed to allow walking along a section of the existing woodland edge. The proposed boardwalk crosses a spot where existing drainage (a footing drain outlet) has created a small area that is periodically damp. Native wetland plantings are proposed for this wet area and include Caltha palustris (Marsh Marigold), Matteucia struthiopteris (Ostrich Fern) and Phlox divaricata (Wild Blue Phlox).

There is no practicable way to achieve the proposed goals of this construction that would have less impact.

B) Avoidance: The potential impacts have been avoided to the maximum extent practicable.

The proposed plan allows for safer access down the slope, with less chance of future soil erosion and minimizes impacts as much as practical. Erosion control has been specified on the plans for protection from erosion during construction. The extent of the impact of the proposed wall and boardwalk is limited to what will create a less steep slope and protect the woodland buffer. The proposed plan is the least impacting alternative that will allow for safer use of the property by the owners while protecting the site from erosion.

PHONE 603.659.5949 • FAX 603.659.5939
102A KENT PLACE
NEWMARKET, NH 03857
www.woodburnandcompany.com
www.houzz.com/pro/robwoodburn

C) Minimization: Any unavoidable impacts have been minimized. No reasonable alternative to the proposed construction exists which does not impact a wetland, or which has less detrimental impact on a wetland. Design, construction, and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and will include restoration of the site as nearly as possible to its original grade.

The proposed plan minimizes unavoidable impacts and improves existing conditions. It provides safe access to the lower portions of the site and mitigates the existing erosion conditions.

The plans have been prepared by Woodburn & Company Landscape Architecture, registered in the State of New Hampshire, and reviewed by Norway Plains Associates, Civil Engineers.

The design and construction methods will minimize detrimental impacts to the resource.

(D) Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.

Agreed. Should NHDES require further mitigation a plan will be submitted to the Conservation Commission and Planning Board.

(E) Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3).

NHDES Wetland Minimum Impact Permit Application submitted with this application and will provide to the board upon approval.

<u>Conservation District Required Information:</u>

The plans illustrate the use of erosion control to prevent erosion of disturbed soils during construction. The proposed plans break the steeps slopes and diminish existing erosion conditions. All disturbed soils will be properly stabilized with hydroseeding prior to the removal of erosion control.

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Conservation District CUP Criteria:

(A) The applicant shall demonstrate that the proposed use is essential to the productive use of land not in the district and is located and constructed to minimize any detrimental impact of such use upon the surface waters or other environmentally sensitive areas, where it is physically impossible to locate such use on land not in the district, and economic advantage alone shall not be deemed a sufficient reason for such proposed use.

The proposed plan allows for a safe means of access to lower areas of the site by the owners and their family. It also diminishes existing erosion conditions by breaking the existing steep slopes with the proposed retaining wall. Appropriate erosion control will be in place during construction and all disturbed soils will be stabilized with new plantings or hydroseeding as shown on the plans.

(B) A soil erosion and sedimentation control plan is submitted and followed to verify the planned avoidance of sediment pollutant runoff to bodies of water. s plan will address the following (if applicable), but should not be limited to:

[1] Stabilization of exposed soils and soil stockpiles;
[2] Protection of steep slopes from erosion;
[3] Construction site waste management;
[4] Inspection and maintenance of runoff control measures (BMPs);
[5] Minimization of land clearing;
[6] Stabilization of drainageways;
[7] Installation of perimeter controls;
[8] Installation of sediment trapping devices; and
[9] Storm drain inlet protection.

Appropriate erosion control is illustrated on the landscape plan and engineering plans submitted as part of the NHDES Shoreland and Wetland applications.

(C) Necessary state and federal approvals have been applied for. Said permits shall be received prior to the issuance of the conditional use permit by the Planning and Community Development Department.
[Amended 7-22-2020 by Ord. No. 2020.07.08-006]

NHDES Shoreland and Wetland applications are included as part of the CUP application documentation.

(D) A written review by the Conservation Commission of the environmental effects of the proposed use upon the area in question has been submitted. The Commission's review shall address the following, but is not limited to:

[1] Attempted avoidance of the impact;
[2] Minimization of the impact;
[3] Planned mitigation of the effects of the impact; and
[4] Efficacy of the soil erosion and sedimentation control plan.

This information has been submitted in the document above and will be reviewed with the Conservation Commission.

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NEW HAMPSHIRE DEPARTMENT OF ENVIROMENTAL SERVICES

SHORELAND PERMIT APPLICATION

PREPARED FOR:

JOHN S. & JUDITH LAPKIN CRAIG
TAX MAP N8, LOT 1-3
44 SADDLE TRAIL DRIVE
COCHECO RIVER
DOVER, NEW HAMPSHIRE
STRAFFORD COUNTY

MAY 2025

PREPARED BY:

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

2 CONTINENTAL BOULEVARD, PO BOX 249, ROCHESTER, NEW HAMPSHIRE 03866-0249 (603) 335-3948

SHORELAND PERMIT APPLICATION

Water Division / Wetlands Bureau

Check Application Status

RSA / Rule: RSA 483-B, Env-Wq 1400

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

This is an application for a permit to excavate, fill, construct new structures, or remove structures within the protected shoreland regulated under RSA 483-B. By providing your email address, you authorize NHDES to communicate all matters relative to this filing electronically, using your email address.

SECTION 1 - PROJECT DESCRIPTION (Env-Wq 1406.07)

Please concisely describe your proposed project:

The owners are proposing a small amount of grading and construction of retaining walls and paths to enhance their gardens. The majority of the work will be between the 50' waterfront buffer and the 150' woodland buffer from Fresh Creek. The only disturbances proposed within the 50' waterfront buffer are hand plantings of native ornamental species.

SECTION 2 - PROJECT LOCATION (Env-Wq 1406.07)

ADDRESS: 44 Saddle Trail Drive	TOWN/CITY: Dover	STATE:NH	ZIP CODE:03820
WATERBODY NAME:Cocheco River	TAX MAP/ BLOCK/LOT NUMBER: N8 / 1-3		

SECTION 3 - PROPERTY OWNER AND DEED INFORMATION (Env-Wq 1406.07)

The legal name of each property owner must be as it appears on the deed of record. If the owner is a trust or a company, write the name of the trust or company as the owner's name.

LAST NAME, FIRST NAME, M.I: Craig, John S. & Judith Lapkin			
MAILING ADDRESS:44 Saddle Trail Drive	TOWN/CITY: Dover	STATE: NH	ZIP CODE: 03820
PHONE: 970-510-0509	EMAIL (if available): jcraig1234@gmail.com		
REGISTRY OF DEED COUNTY Strafford	BOOK NUMBER 5106	PAGE NUMBER 874	

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER), IF DIFFERENT THAN OWNER (Env-Wq 1406.07)

If the applicant is a trust or a company, write the name of the trust or company as the applicant's name. If the applicant is the owner, please leave blank and check the following box: ■

LAST NAME, FIRST NAME, M.I:			
MAILING ADDRESS:	TOWN/CITY:	STATE:	ZIP CODE:
PHONE:	EMAIL (if available):		

SECTION 5 - CONTRACTOR OR AGENT (OPTIONAL)

LAST NAME, FIRST NAME, M.I: Norway Plains Associates, Inc., c/o Aaron Lamond			
ADDRESS: P.O. Box 249	TOWN/CITY: Rochester	STATE: NH	ZIP CODE: 03866
PHONE: 603-335-3948	EMAIL (if available): alamond@norwayplains.com		

SECTION 6 - CRITERIA (Env-Wq 1406.07)

Please check at least one of the following:

- [■] This shoreland permit application requires neither a proposal to make the property more nearly conforming nor a request for a waiver of a minimum standard.
- [ ] This shoreland permit application includes a proposal to make the structures and/or the property more nearly conforming in accordance with RSA 483-B:11.
- [ ] This shoreland permit application includes a request for a waiver of the following minimum standard(s): RSA 483-B:9, V.

SECTION 7 - RELATED PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT (Env-Wq 1406.14)

Please indicate if you also require the following permits. If so, please indicate the status of your permit application.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain per RSA 485-A:17	☐ YES ☑ NO		☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:29	☐ YES ■ NO		☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval per RSA 485-A:29	☐ YES ■ NO		☐ APPROVED ☐ PENDING ☐ DENIED
Wetlands Permit per RSA 482-A	☐ YES ■ NO		☐ APPROVED ☐ PENDING ☐ DENIED

SECTION 8 - REFERENCE LINE ELEVATION (Env-Wq 1406.07)

Required for projects located on the protected shoreland of lakes or ponds. The reference line elevations for most lakes, ponds, and artificial impoundments greater than 10 acres are listed in the Consolidated List of Waterbodies Subject to the Shoreland Water Quality Protection Act. See RSA 483-B:4, XVII for the definition of reference line.

REFERENCE LINE ELEVATION (feet above sea level): 4'+/-

SECTION 9 - APPLICATION FEE & SUBMITTAL (RSA 483-B:5-b, I(b); RSA 483-B:5-b, X)

A nonrefundable permit application fee of $200 plus $0.20 per total square feet of impact for restoration of water quality improvement projects, or $400 plus $0.20 per total square feet of impact for all other projects is required at the time the application is submitted. *Applications for projects solely funded by municipal, county, state, or federal entities shall incur a permitting fee no greater than $3,750.*

To mail or hand deliver this application and all required attachments to the NHDES Wetlands Bureau, please use PO Box 95, Concord, NH 03302-0095. Missing information may delay your shoreland permit application and may result in denial. *If paying by check or money order, please make payable to the Treasurer, State of New Hampshire.*

SECTION 10 - CALCULATING TOTAL IMPACT AREA / PERMIT APPLICATION FEE (RSA 483-B:5-b, I(b); RSA 483-B:5-b, X)

Calculate total impact area by determining the sum of all areas disturbed by regrading, excavating, filling, construction or structure removal. Impacts often include, but are not limited to constructing new driveways, constructing new structures, areas disturbed when installing septic systems and foundations, creating temporary access roads to drill a new well and regrading associated with landscaping activities.

TOTAL AREA IMPACTED WITHIN THE PROTECTED SHORELAND =	4,922	**(A) square feet**
• *For restoration of water quality improvement projects:* Multiply line (A) by $0.20 **and** add $200. **[(A) × $0.20 + $200]** = $		**Permit fee**[1]
• *For all other projects:* Multiply line (A) by $0.20 **and** add $400. **[(A) × $0.20 + $400]** = $	1,384.40	**Permit fee**

SECTION 11 - REQUIRED CERTIFICATIONS (Env-Wq 1406.08; Env-Wq 1406.10(a))

By initialing each of the following statements, and signing below, you are certifying that:

Initials: AGL	The information provided is true, complete, and not misleading to my knowledge and belief.
Initials: AGL	I understand that: • Any permit or waiver granted based on false, incomplete, or misleading information shall be subject to revocation. • I am subject to the applicable penalties in RSA 641, Falsification in Official Matters. • Obtaining a shoreland permit shall not exempt the work proposed from other state, local, or federal approvals.
Initials: AGL	I have notified the governing body of the municipality or municipalities in which the property is located by certified mail, in accordance with Env-Wq 1406.13.
Initials: AGL	I have notified all abutters[2] of the proposed impacts via certified mail, in accordance with Env-Wq 1406.13.
Initials: AGL	☒ This project is within one-quarter mile of a designated river, and I have provided the Local River Management Advisory Committee (LAC) with a copy of my complete application, including all supporting materials, via certified mail, in accordance with Env-Wq 1406.13. ☐ This project is *not* within one-quarter mile of a designated river.
Initials: AGL	For any project proposing that the impervious area be at least 15% but not more than 20% within the protected shoreland, I certify that the impervious area is not more than 20%. ☒ N/A

SECTION 12 - REQUIRED SIGNATURES (Env-Wq 1406.08)

Both the property owner and applicant must sign.

SIGNATURE (OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY:	DATE:

[1] Projects solely funded by municipal, county, state, or federal entities shall incur a permit application fee no greater than $3,750.

[2] "Abutter" means any person who owns property immediately contiguous to the property on which the proposed work will take place, or who owns flowage rights on such property. The term does not include properties separated by a public road or located more than ¼ mile from the limits of the proposed work. If contiguous properties are owned by the person who is proposing the work, then the term includes the person owning the next contiguous property, subject to the ¼ mile limitation.

SHORELAND PERMIT APPLICATION WORKSHEET

You must include this worksheet with every shoreland permit application. Include a separate worksheet for each individual lot of record where impacts are proposed.

In this worksheet, "pre-construction" impervious surface area[3] means all human-made impervious surfaces[4] currently present within the protected shoreland of a lot, whether to be removed or to remain after the project is completed. "Post-construction" impervious area means all impervious surfaces that will exist within the protected shoreland of a lot upon completion of the project, including both new and any remaining pre-construction impervious surfaces. All answers must be in square feet.

Calculating Impervious Area

CALCULATING THE IMPERVIOUS AREA OF A LOT WITHIN 250 FEET OF THE REFERENCE LINE (Env-Wq 1406.12)			
	STRUCTURE DESCRIPTION	**PRE-CONSTRUCTION IMPERVIOUS AREAS**	**POST-CONSTRUCTION IMPERVIOUS AREAS**
PRIMARY STRUCTURE(S) House and all attached decks and porches.	House, Overhangs, Decks, Steps	4996 FT^2	4996 FT^2
ACCESSORY STRUCTURES All other impervious surfaces excluding lawn furniture, well heads, and fences. Common accessory structures may include driveways, walkways, patios and sheds.	Driveway	1712 FT^2	1712 FT^2
	Concrete / Walkways	1147 FT^2	1493 FT^2
	Patios	2136 FT^2	2136 FT^2
	Retaining Walls	203 FT^2	423 FT^2
	HVAC Equipment	45 FT^2	45 FT^2
	Pool / Jacuzzi / Dock	780 FT^2	780 FT^2
	TOTAL:	**(A)** FT^2 11019	**(B)** FT^2 11,585
Area of the lot located within 250 feet of reference line:			**(C)** FT^2 80,093
Percentage of lot covered by pre-construction impervious area within 250 feet of the reference line: *[divide (A) by (C) x 100]*			**(D) %** 13.75
Percentage of lot to be covered by post-construction impervious area within 250 feet of the reference line upon completion of the project: *[divide (B) by (C) x 100]*			14.46 **(E) %**

[3] **"Impervious surface area"** as defined in Env-Wq 1402.13 means, for purposes of the impervious surface limitation specified in RSA 483-B:9, V(g), the total footprint of each impervious surface that is located within the protected shoreland.

[4] **"Impervious surface"** as defined in RSA 483-B:4, VII-b means any modified surface that cannot effectively absorb or infiltrate water. Examples may include roofs, and unless designed to effectively absorb or infiltrate water, decks, patios, and paved, gravel, or crushed stone driveways, parking areas, and walkways.

Stormwater Management Requirements

IMPERVIOUS AREA THRESHOLDS (RSA 483-B:9, V(g))
☐ A net decrease or no net increase in impervious area is proposed (If **line E** is less than or equal to **line D**).
■ The percentage of post-construction impervious area **(line E)** is less than or equal to 20%. This project *does not require* a stormwater management plan and *does not require* a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score.
☐ A net increase in impervious area is proposed and the percentage of post-construction impervious area **(line E)** is greater than 20%, but less than 30%. This project *requires* a stormwater management but *does not require* a plan demonstrating that each waterfront buffer grid segment at least meets the minimum required tree and sapling point score. *See details on Application Checklist*
☐ A net increase in impervious area is proposed and the percentage of post-construction impervious area **(line E)** is greater than 30%. This project *requires* a stormwater management plan designed and certified by a professional engineer *and requires* plans demonstrating that each waterfront buffer grid segment meets at least the minimum required tree and sapling point score. *See details on Application Checklist*

Natural Woodland Area Requirements

DETERMINING THE AREA TO REMAIN AS NATURAL WOODLAND	
Total area of the lot between 50 feet and 150 feet of the reference line within which the vegetation currently exists as natural woodland[5] *(see definition below).*	**(F)** FT^2 5287
Total area of the lot between 50 feet and 150 feet from the reference line.	**(G)** FT^2 38821
At least 25% of area **(G)** must remain in as natural woodland. *[0.25 x G]*	**(H)** FT^2 9705
Place the lesser of area **(F)** and calculation **(H)** on this line. To comply with the *natural woodland area requirement*, this is the minimum area that must remain as natural woodland between 50 feet and 150 feet from the reference line. This area must be represented on all plans and this area, exclusive of existing lawn, must remain in an unaltered state[6].	5287 **(I)** FT^2
Name of person who prepared this worksheet: Aaron G. Lamond	
Name and date of the plan associated with this worksheet: Existing Conditions, October 2024	

[5] **"Natural Woodland"** means a forested area consisting of various species of trees, saplings, shrubs, and ground covers in any combination and at any stage of growth (483-B:4, XI).

[6] **"Unaltered State"** means native vegetation allowed to grow without cutting, limbing, trimming, pruning, mowing, or other similar activities except as needed for renewal or to maintain or improve plant health (483-B:4, XXIV-b).

Please keep this checklist for your reference. Do not include it with your application.

SHORELAND PERMIT APPLICATION CHECKLIST

Unless specified, all items listed below are required. Failure to include them may delay a decision on your permit application and may result in denial. Please reference statute RSA 483-B, the Shoreland Water Quality Protection Act (SWQPA) and administrative rules Env-Wq 1400 et seq. of the SWQPA at des.nh.gov. This checklist is for your guidance.

Required Attachments for All Projects (Env-Wt 1406.06, Env-Wq 1406.07; Env-Wq 1406.12; Env-Wq 1406.13).

- ☐ Application fee required by RSA 483-B:5-b, I(b).
- ■ A copy of the recorded deed of the current property owner.
- ☐ A copy of the U.S. Geological Survey map with the property and project located.
- ☐ Photos of existing site conditions within the protected shoreland, including within 50 feet of all proposed impacts.
- ☐ A copy of the tax map showing the location and lot number of the proposed project.
- ☐ A list of names and mailing addresses, as well as tax map and lot numbers, of all abutters (Env-Wq 1406.12(e)). Public infrastructure projects such as public roads, public utility lines, and associated structures and facilities, including public water access facilities, are not required to notify abutters (RSA-483-B:5-b, IV-a).
- ☐ Certified mail receipts verifying that the governing body of the municipality in which the project will be located, the Local River Management Advisory Committee (LAC), if the project is within ¼ mile of a Designated River under RSA 483:15, and all abutters have been notified, as applicable (RSA-483-B:5-b, IV-a).
- ☐ A copy of the state Natural Heritage Bureau (NHB) report for the subject property indicating that the project has been screened for species of concern.
- ☐ If the applicant is not the property owner and is not the authorized agent of the property owner for purposes of the application, documentation supporting the applicant's right to engage in the proposed activity on the property, such as a long-term lease or purchase-and-sale agreement.
- ☐ Plans and additional information, as described below.

Plans (Format)

- ☐ Plans shall have a left margin of 2 inches. Remaining margins shall be at least 1 inch (Env-Wq 1406.11(b)).
- ■ Plans drawn to scale shall be shown using a scale of not more than 20 feet to one inch. If a lot cannot be shown on a 1:20 scale, it shall be shown on a larger scale on a separate sheet (Env-Wq 1406.11(c)).
- ☐ Fold oversized plans to 8.5 x 11 inches (Env-Wq 1406.11(d)).

Plans (Details)

The following information must be shown on all plans (Env-Wq 1406.09; Env-Wq 1406.10):

- ■ An overview plan of the property within 250 feet of the reference line that shows the approximate location of all property lines, easements, and rights-of-way, clearly labeled.
- ■ The scale, if any, used on the plan. If the plan is not to scale, show the complete dimensions of all features.
- ■ A north-pointing arrow, indicating orientation.
- ■ A legend that clearly indicates all symbols, line types, and shadings.
- ■ The reference line, the primary building line (meaning the 50-foot primary structure setback line), the limits of the woodland buffer, and the protected shoreland.

- [x] All other applicable local and state setbacks.
- [x] The dimensions and locations of all existing structures, impervious areas, disturbed areas, and all other relevant features necessary to clearly define existing conditions.
- [x] The dimensions and locations of all proposed structures, impervious areas, and all other relevant features necessary to clearly define the proposed project.
- [x] A delineation of all existing and proposed cleared areas, such as, lawns, fields, paths, gardens, and beaches.
- [x] The dimensions, locations, and descriptions of all proposed temporary impacts associated with completion of the project.
- [x] The locations of all areas between 50 feet and 150 feet of the reference line that will remain as *natural woodland* (as determined on *Line (I)* of the shoreland application worksheet).
- [x] Proposed methods of erosion and siltation controls indicated graphically and labeled, or otherwise annotated as needed for clarity, as specified by Env-Wq 1404.
- [ ] If the topography is to be permanently altered, the existing and proposed topography, including a reference elevation.
- [x] A plan of any planting(s) proposed in the waterfront buffer, showing the proposed location(s) and scientific names or common names of proposed species.
- [x] If applicable, the location of an existing or proposed 6-foot-wide foot path to the waterbody or temporary access path, as allowed by RSA 483-B:9, V(a)(2)(D)(viii) and (ix).
- [x] The date of plan and the preparer's name.

Required Additional Information

1. Projects Within the Waterfront Buffer (RSA 483-B:9, V(a)(2)(D); Env-Wq 1405.03; Env-Wq 1406.10)

- [x] A plan delineating each waterfront buffer grid segment that will be impacted by the project.
- [x] The location and diameter of all trees and saplings, at least up to that which is sufficient to meet the minimum point requirement specified in RSA 483-B:9, V(a)(2)(D) within each grid segment to be impacted.
- [ ] A designation of the trees and/or saplings to be cut during the project, if any, including:
  - [ ] The diameter of all trees and saplings at 4½ feet from the ground.
  - [ ] The names of the existing species, using either scientific names or common names.
- [ ] For any project proposing new or modification to the footprint of accessory structures within the waterfront buffer, provide the shoreland frontage of the lot, which is required to determine compliance with Env-Wq 1405.03.

2. Subdivision Projects and Projects Requiring New Septic Systems (RSA 483-B:9)

- [ ] Location and description of any on-site or proposed septic system including approval number, if known, to provide evidence of compliance with RSA 483-B:9, V(c).
- [ ] For subdivisions only: shoreland frontage of the lot, to provide evidence of compliance with RSA 483-B:9, V(e) & (f).

3. Projects Involving an Increase in Impervious Area (Env-Wq 1404.02; Env-Wq 1406.10; RSA 483-B:9, V(g))

Projects that propose a *net increase* in impervious area may be required to incorporate a stormwater management plan and enhance the waterfront buffer with additional vegetation:

- For projects that propose a net increase in impervious area and the percentage of post-construction impervious area will be greater than 20%, but less than 30% (as determined on *Line (E)* of the shoreland application worksheet) within the protected shoreland, as specified in RSA 483-B:9, V(g)(2), please provide:

  ☐ Plans for a stormwater management system that will infiltrate increased stormwater from development in accordance with Env-Wq 1500.

- For projects that propose a net increase in impervious area and the percentage of post-construction impervious area will be greater than 30% *(as determined on Line (E) of the shoreland application worksheet)* within the protected shoreland, as specified in RSA 483-B:9, V(g)(1) and (3), please provide:

  ☐ Plans for a stormwater management system designed and certified by a professional engineer. Such design shall demonstrate that the post-development volume and peak flow rate based on the 10-year, 24-hour storm event, shall not exceed the pre-development volume and peak flow rate for flow off the property within the protected shoreland.

  ☐ Evidence that each grid segment of the waterfront buffer at least meets the minimum required tree and sapling point score and/ or a planting plan in accordance with PART Env-Wq 1413, with the locations and species of all native plantings proposed to at least bring each deficient grid segment up to the required minimum point score. An explanation of how to score grid segments and a native species planting list is available in the Vegetation Management for Water Quality fact sheet.

4. Pervious Technology Use (Env-Wq 1406.10)

For any project that proposes the use of pervious surface technologies such as pervious asphalt or porous concrete, or to maintain existing pervious surfaces, please provide:

☐ A plan with the dimensions and locations of all proposed pervious surfaces.

☐ A cross-section of each type of pervious surface that shows the construction method and details. And

☐ Specifications indicating how the pervious technologies will be installed and maintained.

5. Nonconforming Structures in accordance with RSA 483-B:11 (Env-Wq 1408.05)

☐ For projects that propose expansions of non-conforming primary structures, please provide a completed More Nearly Conforming Request Form or your own request explaining how the project meets the requirements of RSA 483-B:11 and Env-Wq 1408.05.

6. Waiver from the Minimum Standards (Env-Wq 1406.10; Env-Wq 1409)

☐ For projects that request a waiver from the minimum standards of RSA 483-B:9, please provide a completed Request Waiver from the Minimum Standards Request Form or your own request explaining how the project meets the requirements of RSA 483-B:9,V(I) and PART Env-Wq 1409.01.

7. Waiver from the Rules (Env-Wq 1413)

☐ For projects that request a waiver from the Env-Wq 1400 rules, please provide a completed Request Waiver from the Shoreland Rules Form or your own request explaining how the project meets the requirements of Env-Wq 1413.

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

PO Box 249
2 Continental Blvd. (03867)
Rochester, NH 03866-0249
Phone: (603) 335-3948
www.norwayplains.com

PO Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948

May 29, 2025

VIA CERTIFIED MAIL

John S. & Judith Lapkin Craig
44 Saddle Trail Drive
Dover, NH 03820

RE: NHDES Shoreland Permit Application for Tax Map N8, Lot 1-3 – Craig
44 Saddle Trail Drive, Dover, Strafford County, NH

Dear John & Judith,

This letter is to inform you that a permit application will be filed with the State of NH Department of Environmental Services for a Shoreland Impact Permit associated with your property referenced above. The project proposes to construct a stone retaining wall with stone steps, an impervious boardwalk, a 22' X 30' garden, 6 planting beds, planting of 6 Red Maple trees, and 2 understory gardens consisting of native groundcovers totaling 4,922 square feet.

In accordance with State RSA 483-B:5-b,IV-a, we are required to notify you as an abutter to the property. This letter is being sent out prior to submission of the application so that verification of the abutter notification may be included as part of the application.

Once it is filed, the permit application, including plans that show the proposed project, will be available at the Town Clerk's Office for public inspection. You are also welcome to contact me with any questions via email or at (603) 335-3948, X1108.

Respectively Submitted,
NORWAY PLAINS ASSOCIATES, INC.

Glenn D. Griswold, LLS
Project Manager
ggriswold@norwayplains.com

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

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PO Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948

May 29, 2025

VIA CERTIFIED MAIL

City of Dover
Dover City Clerk
288 Central Avenue
Dover, NH 03820

RE: NHDES Shoreland Permit Application for Tax Map N8, Lot 1-3 – Craig
44 Saddle Trail Drive, Dover, Strafford County, NH

Dear Town Clerk,

This letter is to inform you that a permit application will be filed with the State of NH Department of Environmental Services for a Shoreland Impact Permit associated with the above referenced property. The property owners, John S. & Judith Lapkin Craig, propose to construct a stone retaining wall with stone steps, an impervious boardwalk, a 22' X 30' garden, 6 planting beds, planting of 6 Red Maple trees, and 2 understory gardens consisting of native groundcovers totaling 4,922 square feet.

This letter is to inform you that a permit application is being filed with the State of NH Department of Environmental Services for a Shoreland Impact Permit Associated with the above referenced property. I am required to notify you in accordance with State Law RSA 483-B:5-b, IV-a.

Enclosed please find a copy of the completed Shoreland Permit application. Please make it available for public inspection. You are also welcome to contact me with any questions via email or at (603) 335-3948, X 1108.

Respectively Submitted,
NORWAY PLAINS ASSOCIATES, INC.

Glenn D. Griswold, LLS
Project Manager
ggriswold@norwayplains.com

E-Doc # 230004572 04/24/2023 02:28:44 PM
Book 5106 Page 874 Page 1 of 2
Catherine A. Berube
Register of Deeds, Strafford County
LCHIP STA207694 25.00
TRANS TAX ST860724 56,250.00

After Recording Return To:
John S. Craig and Judith Lapkin Craig
304 Pleasant Valley Road, Mendham, NJ 07945

56,250.00

Warranty Deed

KNOW ALL PERSONS BY THESE PRESENTS: That **Daniel A. Meyers and Carla J. Meyers, Trustees of The Daniel A. Meyers and Carla J. Meyers Revocable Living Trust dated August 15, 2016** of **44 Saddle Trail Drive, Dover, NH 03820**, for consideration paid, grant to **John S. Craig and Judith Lapkin Craig, a married couple, as joint tenants with rights of survivorship** of **304 Pleasant Valley Road, Mendham, NJ 07945**, with **WARRANTY COVENANTS:**

A tract of land and any improvements thereon located on Saddle Trail Drive in Dover, Strafford County and State of New Hampshire, depicted as "Proposed Lot 3" on sheet 2 of a plan entitled "Open Space Subdivision (With Commercial Component) for Woodwind Farms, LLC dated July 17, 2007" by Doucet Survey, Inc. and recorded with the Strafford County Registry of Deeds as Plan 93-56 (the "Plan") and designated by the City of Dover as Assessor's Map Lot N- 8-1-3, together with any appurtenant rights in the land designated as "Saddle Trail Drive" and the "Open Space" areas shown on the Plan.

Subject to the rights, obligations, and all other terms set forth in the "Declaration of Restrictive Covenants (for) The Paddocks at Tidewater Farm Subdivision, Dover, New Hampshire" as recorded at Strafford County Registry of Deeds, Book 3622, Page 0018, and any amendments thereto.

Subject to matters shown on Plan 93-56 recorded in the Strafford County Registry of Deeds.

Subject to New Hampshire Department of Environmental Services Wetlands Non-Specific Permit dated March 6, 2019 and recorded at Book 4659, Page 837 in the Strafford County Registry of Deeds.

Meaning and intending to describe and convey the same premises conveyed to Daniel A. Meyers and Carla J. Meyers, Trustees of The Daniel A, and Carla J, Meyers Revocable Living Trust by virtue of a deed from Saddle Lot 3, LLC, dated June 15,

2018 and recorded with the Strafford County Registry of Deeds on June 15, 2018 at Book 4576, Page 92.

The grantors, a married couple, join in their individual capacities to release all rights of homestead and other interests therein in the above described premises.

Executed this 21 day of April, 2023.

The Daniel A. Meyers and Carla J. Meyers Revocable Living Trust

By: _____
Daniel A. Meyers, Individually and as Trustee

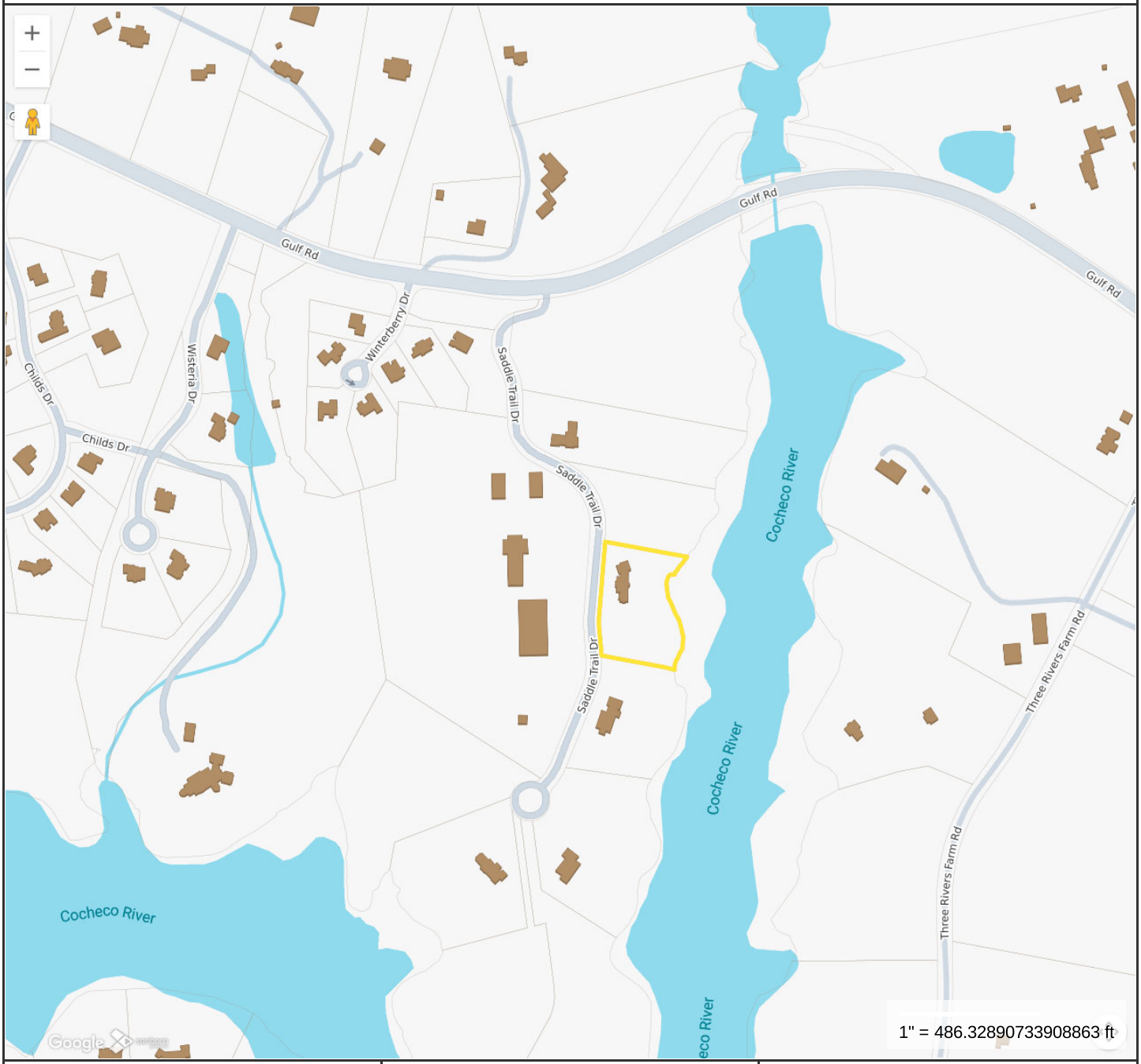
By: _____
Carla J. Meyers, Individually and as Trustee

STATE OF NH
COUNTY OF Rockingham

Then personally appeared before me on this 21 day of April, 2023, the said Daniel A. Meyers and Carla J. Meyers, Individually and as Trustees of The Daniel A. Meyers and Carla J. Meyers Revocable Living Trust and acknowledged the foregoing to be their voluntary act and deed.

_____
Notary Public/Justice of the Peace
Commission expiration:

JAIME C LYNCH
Notary Public, State of New Hampshire
My Commission Expires March 22, 2028



Property Information

Location	44 SADDLE TRAIL DR
Owner	CRAIG JOHN S
Land Use	101R
Zoning Code	R-40
Property Id	N0008-001003

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.

Norway Plains Associates, Inc.
2 Continental Blvd., PO Box 249
Rochester, NH 03866

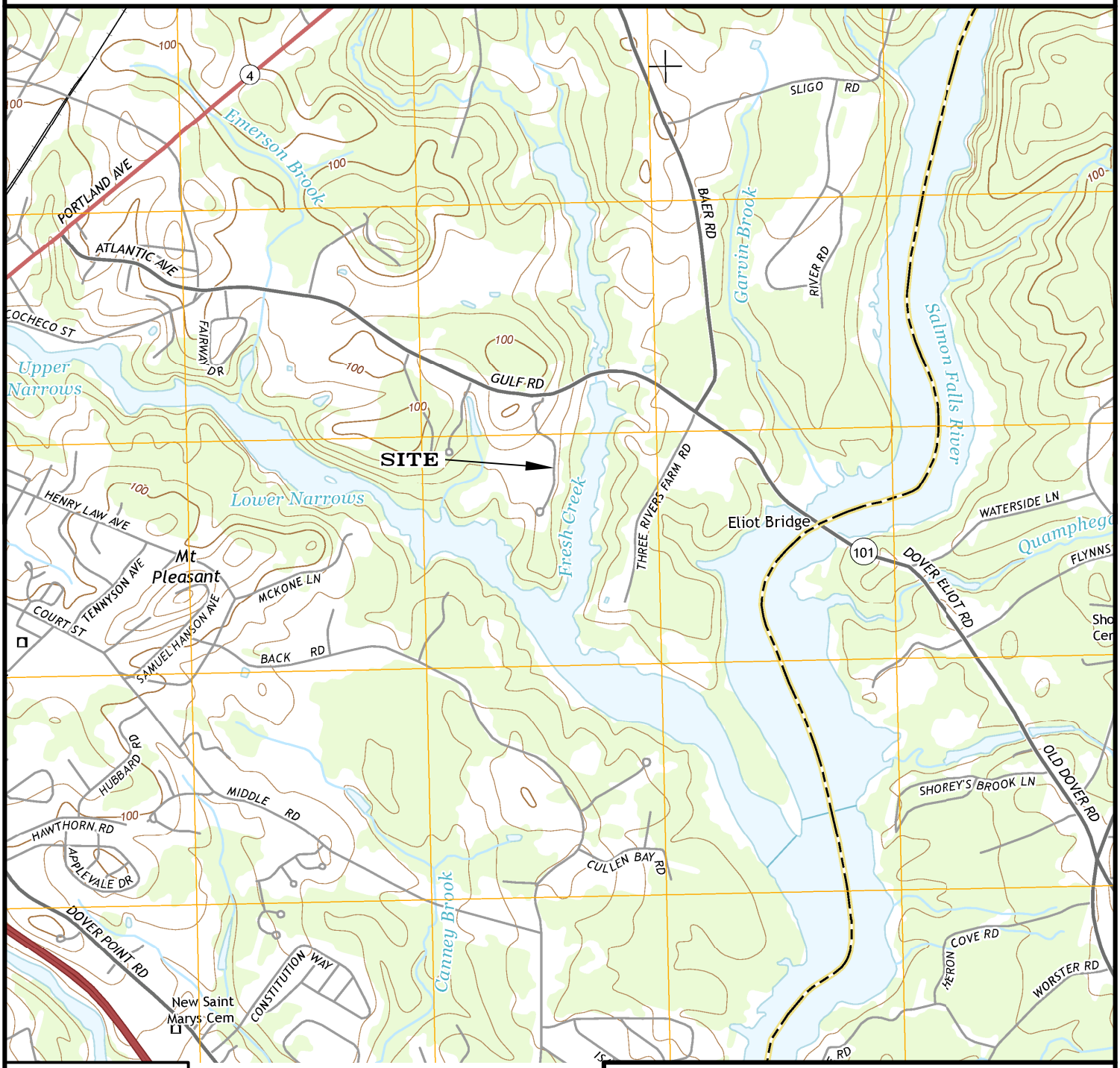
Abutters List

Applicant: **John S. & Judith Lapkin Craig**
Proposed Project: **NHDES Shoreland Permit Application**
Site Address: **44 Saddle Trail Drive**
Town Tax Map & Lot: **Map N8, Lot 1-3**

Town Tax Map & Lot #:		**Abutter Name:**	**Mailing Address:**
Map	**Lot**		
N8	1-2	Bonterra Farms, LLC	31 Saddle Trail Drive Dover, NH 03820
N8	1-4	Peter T. Paul Living Trust	56 Saddle Trail Drive Dover, NH 03820
N8	1-10	Bonterra Farms, LLC	31 Saddle Trail Drive Dover, NH 03820
		City Of Dover Dover City Clerk	288 Central Avenue Dover, NH 03820
Civil Engineers / Surveyor / Agent		Glenn D. Griswold, LLS Norway Plains Associates, Inc.	PO Box 249 Rochester, NH 03866-0249

USGS QUAD MAP

OWNER OF RECORD: JOHN S. & JUDITH LAPKIN CRAIG
LOCATION: 44 SADDLE TRAIL DRIVE, DOVER, NH
MAP N8, LOT 1-3
DEED REF: BK. 5106 PG. 874



NEW HAMPSHIRE

QUADRANGLE LOCATION

ADJOINING QUADRANGLES

1 Rochester
2 Somersworth
3 North Berwick
4 Dover West
5 York Harbor
6 Newmarket
7 Portsmouth
8 Kittery

UTM GRID AND 2015 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
CH
Grid Zone Designation
19T

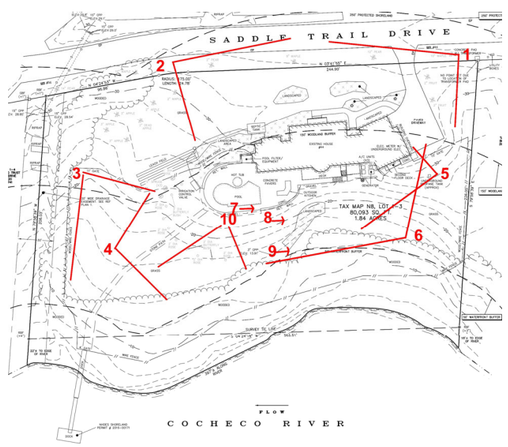
NORWAY PLAINS ASSOCIATES, INC.
SURVEYORS – ENGINEERS
P.O. Box 249, Rochester, NH 03867
TELEPHONE (603)-335-3948

FN: 439 **DATE: MAY 2025**
JN: 23260 **SCALE: 1 : 2000**

EXISTING PHOTO #1

EXISTING PHOTO #2

VIEW KEY

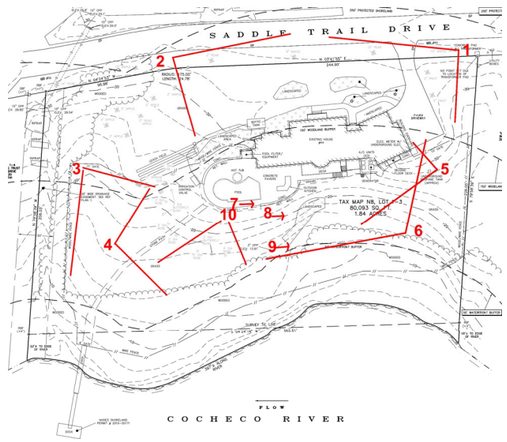


woodburn & company
LANDSCAPE ARCHITECTURE
Since 1994 *reflecting your vision.*
103 Kent Place Newmarket, New Hampshire 03857 Ph.603-659-5949

EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #3

EXISTING PHOTO #4



VIEW KEY

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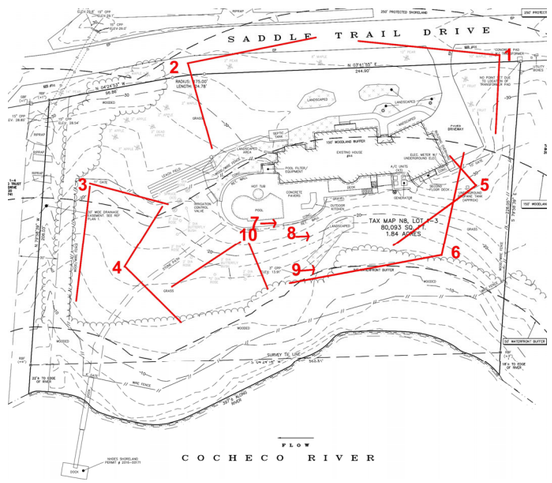
EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #5



VIEW KEY

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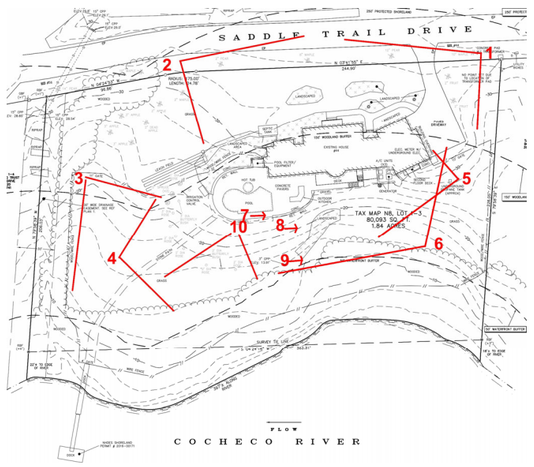
EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #6



VIEW KEY

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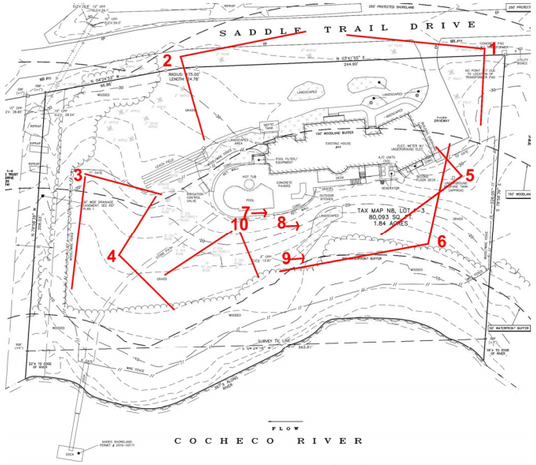
EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

EXISTING PHOTO #7

EXISTING PHOTO #8

EXISTING PHOTO #9



VIEW KEY

EXISTING PHOTO #10

woodburn & company
LANDSCAPE ARCHITECTURE
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103 Kent Place Newmarket, New Hampshire 03857 Ph.603-659-5949

EXISTING PHOTOS
44 SADDLE TRAIL DRIVE
DOVER NH

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Steve Oles, Norway Plains Associates, Inc.
PO Box 249
Rochester, NH 03867
soles@norwayplains.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Maddie Severance - nhbreview@dncr.nh.gov

cc: NHFG Review, David Simmons

Date: 05/06/2025 (valid until 05/06/2026)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: NHDES - Shoreland Standard Permit

NHB ID: NHB25-1215

Town: Dover
Location: 44 Saddle Trail Drive

Project Description: The owners are looking to construct a retaining wall and additional landscaping between the house and shoreline

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments below and the consultation requirements on the following page.

NHB Comments: Please send NHB proposed plans including those that show how close work is proposed to the river and what plantings are proposed.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Natural Community	**State**[1]	**Federal**	**Notes**
Low brackish riverbank marsh	--	--	

Plant species	**State**[1]	**Federal**	**Notes**
eastern grasswort (*Lilaeopsis chinensis*)	E	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.
seaside brookweed (*Samolus parviflorus*)	E	--	Occurs on river and streambanks, as well as estuarine and seashore habitats. Threats include direct destruction of the plants and major alterations of their habitat.

Vertebrate species	**State**[1]	**Federal**	**Notes**
American Eel (*Anguilla rostrata*)	SC	--	Contact the NH Fish & Game Dept (see above).
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)	T	T	Contact the NH Fish & Game Dept (see above) and the US Fish & Wildlife Service (see below).
Cliff Swallow (*Petrochelidon pyrrhonota*)	T	--	Contact the NH Fish & Game Dept (see above).
Shortnose Sturgeon (*Acipenser brevirostrum*)	E	E	Contact the NH Fish & Game Dept (see above) and the US Fish & Wildlife Service (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see above).

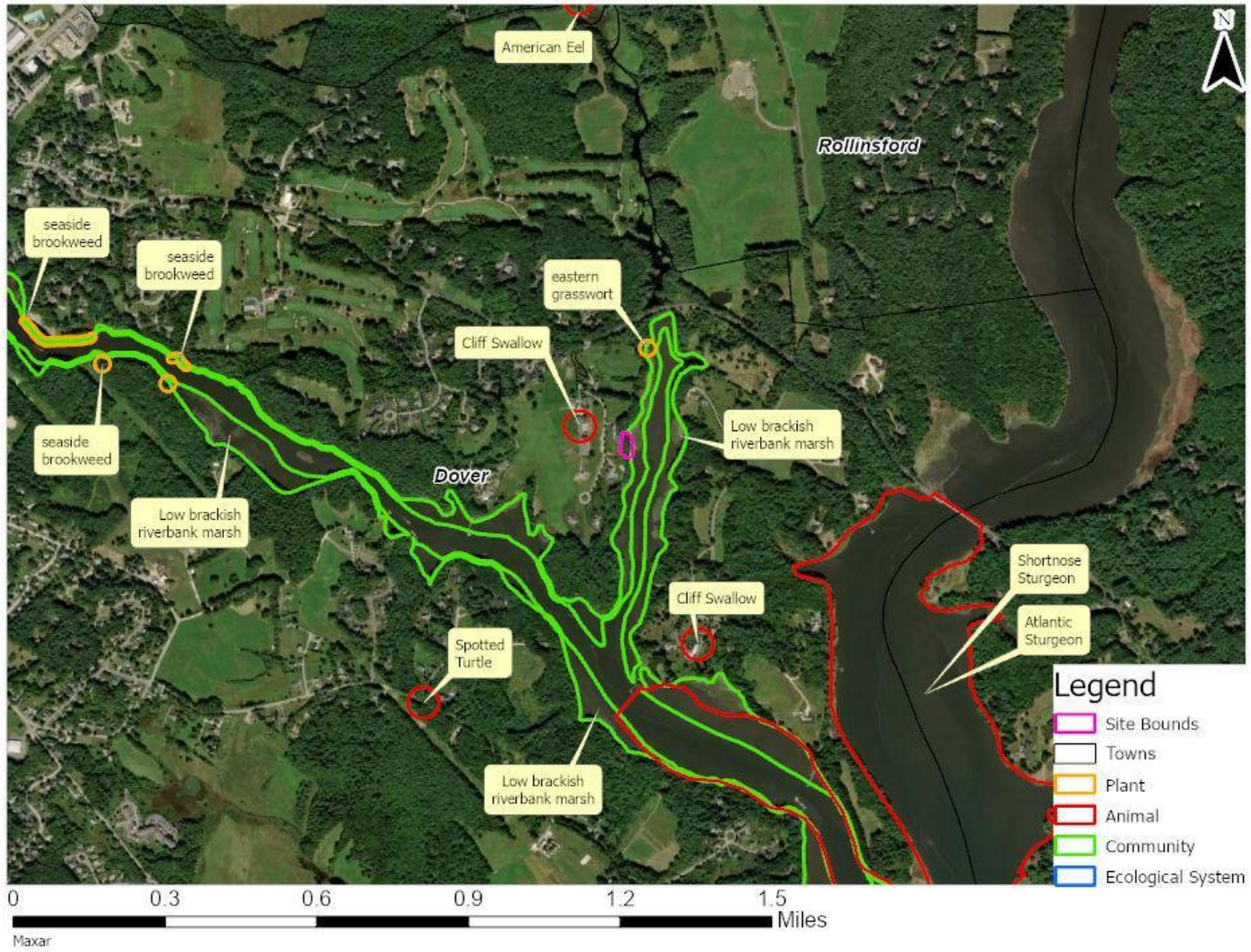
[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above. Contact for federally-listed animals: David Simmons, USFWS, at (603) 223-2541. Contact for federally-listed species: David Simmons, USFWS, at (603) 223-2541.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.

NHB recommends surveys to determine what species/natural communities are present onsite.

NHB25-1215


American Eel
Rollinsford
seaside brookweed
seaside brookweed
seaside brookweed
eastern grasswort
Cliff Swallow
Low brackish riverbank marsh
Dover
Low brackish riverbank marsh
Shortnose Sturgeon
Atlantic Sturgeon
Cliff Swallow
Spotted Turtle
Low brackish riverbank marsh
N
Legend
Site Bounds
Towns
Plant
Animal
Community
Ecological System
0
0.3
0.6
0.9
1.2
1.5
Miles
Maxar

NHB25-1215 EOCODE: CE00000070*006*NH

New Hampshire Natural Heritage Bureau - Community Record

Low brackish riverbank marsh

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2022: This exemplary natural community occurs within a **brackish riverbank marsh system.** At the northern edge of the natural community, the low marsh typically occurs down a steep bank about one meter below the average elevation of the high marsh. The dominant vegetation is smooth cordgrass (*Spartina alterniflora*) with lesser amounts of salt marsh water-hemp (*Amaranthus cannabinus*), narrow-leaved cattail (*Typha angustifolia*), and the watchlist little-headed spikesedge (*Eleocharis parvula*). 2004: Dominant species are *Spartina alterniflora* (smooth cord-grass), *Amaranthus cannabinus* (water hemp), and *Typha angustifolia* (narrow-leaved cattail). Less frequent are *Lemna minor* (lesser duckweed), *Polygonum hydropiper* (water-pepper), *Argentina egedii* (coastal silverweed), *Eleocharis parvula* (small spike-rush), *Ranunculus cymbalaria* (seaside crowfoot), *Lilaeopsis chinensis* (eastern lilaeopsis), and *Samolus parviflorus* (false water pimpernel). 1988: Forms a narrow zone along the river, dominated by *Spartina alterniflora* (smooth cord-grass). A few stands of *Typha angustifolia* (narrow-leaved cattail) exist, mostly less than an acre in size. Rare plant species present are *Samolus parviflorus* (false water pimpernel), *Lilaeopsis chinensis* (eastern lilaeopsis), and *Eleocharis parvula* (small spike-rush). *Spartina alterniflora* (smooth cord-grass) is dominant. A few stands of *Typha angustifolia* (narrow-leaved cat-tail) exist. Many exotic species are present. The bases of steep, rocky slopes support virtually no emergent vegetation.

General Area: 2022: The surrounding area of the natural community as a whole is highly developed with some areas adjacent to the river on state land and under conservation. At the northern end of the natural community the invasive plants glossy false buckthorn (*Frangula alnus*) and Morrow's honeysuckle (*Lonicera morrowii*) are present in the uplands. The ***high brackish riverbank marsh*** adjacent to the northern end of this natural community contains the invasive plants climbing nightshade (S*olanum dulcamara*) and common dock (*Rumex acetosa*), and the watchlist cursed crowfoot (*Ranunculus sceleratus*) and endangered eastern grasswort (*Lilaeopsis chinensis*). 2004: This low marsh lies adjacent to a sparsely or narrowly vegetated ***high brackish tidal riverbank marsh***. The high tidal riverbank is often an unvegetated zone grading into the adjacent upland. Some characteristic species are *Solidago sempervirens* (seaside goldenrod) and *Spartina pectinata* (fresh-water cord-grass). Along most of the riverbank community, moderate residential and commercial development occurs on

	adjacent lands. High levels of development occur along the west end of the riverbank in downtown Dover. 1988: A narrow zone along the river. Bordered by steep forested slopes and heavily impacted areas.
General Comments:	2022: Surveyed as part of EPA WPDG.
Management Comments:	2022: The ***high brackish riverbank marsh*** adjacent to the northern end of this natural community contains the invasive plants climbing nightshade (*Solanum dulcamara*) and common dock (*Rumex acetosa*). In the upland along the northern end of the natural community are the invasive plants glossy false buckthorn (*Frangula alnus*) and Morrow's honeysuckle (*Lonicera morrowii*). 2004: Several invasive species occur on the higher margins of the riverbank community, especially at the west end nearest downtown Dover. They include *Lythrum salicaria* (purple loosestrife), *Phalaris arundinacea* (reed canary-grass), *Rorippa nasturtium-aquaticum* (true watercress), *Polygonum cuspidatum* (Japanese knotweed), and *Solanum dulcamara* (nightshade). These plants should be monitored. 1988: Guard against future development. Current disturbance includes impacts by rock fill, dams, clearing, and power plant construction.

Location

Survey Site Name: Cocheco River Narrows
Managed By:

County: Strafford
Town(s): Dover
Size: 94.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Cocheco River downstream of downtown Dover. 2004: The tidal riverbank marsh extends from downtown Dover (beginning downstream of Washington Street) to the mouth of the Cocheco. For the tidal marsh nearest downtown Dover, park at Henry Law Park. For the tidal marsh 0.75 miles eastward, from Henry Law Avenue, turn north onto access road to baseball fields. Park in lot for baseball fields and walk NE, across power line corridor, to Cocheco River. 1988: Tidal wetlands and shores along Cocheco River between upper and lower narrows, due east and just downstream of downtown Dover.

Dates documented

First reported: 1988-09-13 Last reported: 2022-08-01

NHB25-1215 EOCODE: PDAPI19020*007*NH

New Hampshire Natural Heritage Bureau - Plant Record

eastern grasswort (*Lilaeopsis chinensis*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2022: 100-200 plants in 1x20 meter patch.
General Area: 2022: Eastern grasswort plants occur among dense narrow-leaved cattail (*Typha angustifolia*) in ***high brackish riverbank marsh***. Other species present include smooth cordgrass (*Spartina alterniflora*), creeping bentgrass (*Agrostis stolonifera*), and climbing nightshade (*Solanum dulcamara*).
General Comments: --
Management Comments: --

Location

Survey Site Name: Fresh Creek Estuary
Managed By:

County: Strafford
Town(s): Dover
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2022: On Gulf Road (Route 101) in Dover, park on west side of bridge over Fresh Creek. Plants occur about 100 meters south of road, in cattail-dominated tidal marsh on west bank of river.

Dates documented

First reported: 2022-08-01 Last reported: 2022-08-01

NHB25-1215 EOCODE: PDPRI09051*005*NH

New Hampshire Natural Heritage Bureau - Plant Record

seaside brookweed (*Samolus parviflorus*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:	Rank is for the entire population.
Detailed Description:	2023: Upper Narrows - east shore (along the property of 10 Gerrys Lane): Between 11 and 50 stems in leaf in a colony spanning 336 sq. ft. 2016: Boat House - Site 1: Approximately 130 plants, many in flower, observed in several patches. 2004: 200+ stems observed at the Upper Narrows (west shore) and 100+ stems observed below the Upper Narrows. Plant vigor is normal. 1995: 129 plants located in five patches at the mouth of Emerson Brook. 1988: 1001-10,000 flowering and immature vigorous plants, mostly on the east shore.
General Area:	2023: Upper Narrows - east shore (along the property of 10 Gerrys Lane): Plants within a **low brackish riverbank marsh**. Dominant species present are smooth cordgrass (*Spartina alterniflora*), and the rare eastern grasswort (*Lilaeopsis chinensis*). 2016: Boat House - Site 1: The plants were documented along the right bank of the Cocheco River, a tidal river. At low tide, the plants are located along the upper reaches of the river bank, which had a gentle slope. It is presumed that these plants are submerged during most high tides. The substrate consists of cobbly gravel in some areas, while other areas consist of mudflats. There are very few other plant species present, but for little-headed spikerush (*Eleocharis parvula*), as this area is generally submerged at high tide. 2004: Population occurs in a low and ***high brackish tidal riverbank marsh***. Common associates include *Spartina alterniflora* (smooth cord-grass), *Amaranthus cannabinus* (water hemp), and *Typha angustifolia* (narrow-leaved cattail). Less frequent are *Lemna minor* (lesser duckweed), *Polygonum hydropiper* (water-pepper), *Argentina egedii* (coastal silverweed), *Lilaeopsis chinensis* (eastern lilaeopsis), *Ranunculus cymbalaria* (seaside crowfoot), and *Eleocharis parvula* (small spike-rush). 1995: Gulf of Maine brackish tidal marsh. Inundated to saturated bottom land with partial light. Found with *Lilaeopsis chinensis* (eastern lilaeopsis). 1988: Gulf of Maine Brackish Tidal Marsh. Growing on gravelly shore. Associated plant species include *Plantago* cf. *major* (common plantain), *Atriplex patula* (narrow-leaved orach), *Spartina alterniflora* (smooth cord-grass), *Bidens cernua* (nodding bur-marigold), and *Acuida cannabina* [*Amaranthus cannabinus*] (water hemp).
General Comments:	--
Management Comments:	2023: Upper Narrows - east shore (along the property of 10 Gerrys Lane): Population appears healthy, no disturbance or invasives. Only potential disturbance is lawn m 1988: Guard against further disturbance.

NHB25-1215 EOCODE: PDPRI09051*005*NH

Location

Survey Site Name: Cocheco River Narrows
Managed By: Great Bay Megasite

County: Strafford
Town(s): Dover
Size: 3.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2016: Boat House - Site 1: In downtown Dover, take Washington Street over the Cocheco River. Continue on Washington Street to the second crossing over Cocheco River. Take your next left onto River Street. Take your first right and park near the boat house. Walk north along the path towards the river, keeping the boat house on your right. Walk down the steps to the riverbank and turn right, heading east, and downstream (right bank). At low tide, individual *Samolus valerandi* ssp. *parviflorus* can be found along this stretch of the river within the upper reaches of the mudflats, often surrounded by larger patches of little-headed spikerush (*Eleocharis parvula*). 2004: Henry Law Avenue, turn north onto access road to baseball fields. Park in lot for baseball fields and walk northeast, across power line corridor, to Cocheco River. 1995: North and south of the mouth of Emerson Brook. 1988: Between Upper Narrows and Emerson Brook, east shore (a few plants on west shore).

Dates documented

First reported: 1988-09-13 Last reported: 2023-06-05

NHB25-1215 EOCODE: AFCEA01010*114*NH

New Hampshire Natural Heritage Bureau - Animal Record

American Eel (*Anguilla rostrata*)

Legal Status	Conservation Status
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Special Concern	State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2010: Area 13337: Not enumerated.
General Area: 2010: Area 13337: Ledge, boulder, cobble, and clay substrate. Water brown and silty.
General Comments: --
Management Comments: --

Location

Survey Site Name: Lower Cocheco River
Managed By:

County: Strafford
Town(s): Rollinsford
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Fresh Creek

Dates documented

First reported: 2010-07-01 Last reported: 2010-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB25-1215 EOCODE: AFCAA01042*003*NH

New Hampshire Natural Heritage Bureau - Animal Record

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)

Legal Status	Conservation Status
Federal: Listed Threatened	Global: Rare or uncommon
State: Listed Threatened	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2016: 1 individual, sex unknown, detected in the lower Piscataqua River. 2015: 1 individual, sex unknown, detected in Portsmouth Harbor. 2012: 1 individual, sex unknown, detected in Little Bay.
General Area: 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataqua River.
General Comments: --
Management Comments: --

Location

Survey Site Name: Piscataqua River
Managed By:

County:
Town(s): Out-Of-State
Size: 7749.3 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: 2016: Tidal waters of Portsmouth Harbor, Little Bay, and the Piscataqua River.

Dates documented

First reported: 2012-06-02 Last reported: 2016-05-27

The U.S. Fish & Wildlife Service has jurisdiction over Federally listed species. Please contact them at 70 Commercial Street, Suite 300, Concord NH 03301 or at (603) 223-2541.

NHB25-1215 EOCODE: ABPAU09010*025*NH

New Hampshire Natural Heritage Bureau - Animal Record

Cliff Swallow (*Petrochelidon pyrrhonota*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Threatened	State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2024: Washington Street Bridge: No count of nests under bridge. 2 birds observed. 2023: Washington Street Bridge: No count of nests under bridge. At least 6 birds observed. Washington Street Mills: 2 nests on building. 2022: Washington Street Bridge: At least 4-5 nests. Washington Street Mills: 4 nests. 2020: Washington Street Mills: 2 pairs observed, but not searched thoroughly. 2019: Washington Street Mills: 8 pairs observed. 2018: Fresh Creek Farm: 6 nests observed. Three Rivers Farm: 3 nests observed. 2017: Washington Street Mills: 3 nests observed. 2016: Washington Street Mills: Nests observed, no count reported. 2015: Washington Street Mills: 10 nests observed.

General Area: 2018: Fresh Creek Farm: Nests on buildings on farm property. Three Rivers Farm: Nests on buildings on farm property. 2015: Washington Street Mills: Nests on old mill building in urban center along Cocheco River.

General Comments: --

Management Comments: --

Location

Survey Site Name: Cocheco River Narrows
Managed By:

County: Strafford
Town(s): Dover
Size: 6.2 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2018: Fresh Creek Farm: Barns at 31 Saddle Trail Drive. Three Rivers Farm: Buildings at 125 Three Rivers Farm Road. 2015: Washington Street Mills building, 1 Washington Street, Dover.

Dates documented

First reported: 2015 Last reported: 2024-05-24

NHB25-1215 EOCODE: ABPAU09010*025*NH

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB25-1215 EOCODE: AFCAA01010*001*NH

New Hampshire Natural Heritage Bureau - Animal Record

Shortnose Sturgeon (*Acipenser brevirostrum*)

Legal Status	Conservation Status
Federal: Listed Endangered	Global: Rare or uncommon
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2016: 2 individuals, 1 female and 1 sex unknown, detected in Portsmouth Harbor and the lower Piscataqua River. 2015: 3 females and 2 other individuals, sex unknown detected in Portsmouth Harbor. 2014: 1 female detected moving from Portsmouth Harbor up the Piscataqua River to the mouth of the Cocheco River. 2012: 1 female detected in Little Bay. 2011: 1 female detected in Little Bay. 2010: 1 female detected in Little Bay.
General Area: 2016: Tidal waters in Portsmouth Harbor, Little Bay, and the Piscataqua River.
General Comments: --
Management Comments: --

Location

Survey Site Name: Piscataqua River
Managed By:

County:
Town(s): Out-Of-State
Size: 7749.3 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: 2016: Tidal waters of Portsmouth Harbor, Little Bay, and the Piscataqua River.

Dates documented

First reported: 2010-11-03 Last reported: 2016-10-20

The U.S. Fish & Wildlife Service has jurisdiction over Federally listed species. Please contact them at 70 Commercial Street, Suite 300, Concord NH 03301 or at (603) 223-2541.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB25-1215 EOCODE: ARAAD02010*198*NH

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017: Area 14574: 1 adult female observed, dead on road.
General Area: 2017: Area 14574: Roadside.
General Comments: --
Management Comments: --

Location

Survey Site Name: Canney Brook
Managed By:

County: Strafford
Town(s): Dover
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Area 14574: At intersection of Back Road and Mallard Lane, Dover.

Dates documented

First reported: 2017-05-07 Last reported: 2017-05-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NH DIVISION OF
FORESTS AND LANDS

Request for NHB Review of Potential Impacts from the NHB DataCheck Tool

NHB ID # NHB25-1215

Date Submitted: 04/22/2025

Applicant: Steve Oles
PO Box 249
Rochester NH 03867

Landowner: Judy & John Craig
44 Saddle Trail Drive
Dover NH 03820

Project Location: Tax Map: N-8
Tax Lot#: 1-3
Address: 44 Saddle Trail Drive
Town: Dover

Payment Information. These fields MUST be filled out.

Check, Money Order or Voucher Number: _____

(Make out to "Treasurer - State of NH")

Account Name: _____

(As printed on the check, money order or voucher)

Enclose this completed form with a check, money order or voucher for $25.00, made out to "Treasurer, State of NH".

Send the check, money order or voucher and the completed form to the following address:

Dept. of Natural and Cultural Resources
Attn: NHB Reviews
172 Pembroke Road
Concord, NH 03301

NHB reviews will be completed 5-20 working days from payment, depending on permit type.

IMPORTANT: your submission is considered complete if all of the following is included/filled out:

1. This completed form;
2. A $25 check that is completely filled out (including a signature, date, payable to Treasurer of NH, and the NHB ID # in the memo); and
3. The envelope is addressed Attn: NHB Reviews.

NHB is unable to process incomplete submissions.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0012

Application Type:	Conditional Use Permit
Applicant(s):	James Welch
Owner(s):	James Welch
Location:	112 Rutland St. (Assessor's Map 15, Lot 16)
Meeting Date:	July 22, 2025

Regarding item 4-F, COND-2025-0012: Planning staff have requested additional information from the applicant related to this application. We are requesting a continuance of this item to the August 26, 2025 meeting.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0002

Application Type:	Conditional Use Permit
Applicant(s):	True North Development, LLC
Owner(s):	True North Development, LLC
Location:	35 Boston Harbor Rd. (Assessor's Map 7, Lot 14)
Meeting Date:	July 22, 2025

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow site grading and drainage improvements and to install underground utilities to support the development of two (2) new single-family homes and reconstruction of existing single-family home, resulting in ±6,000 square feet of impact within the Conservation District.

AGENDA ITEM #: 4-G

FILE: COND-2025-0002

APPLICANT/OWNER: True North Development, LLC

LOTS/UNITS PROPOSED:
Reconstruction of existing single-family home, new construction of additional two single-family homes

ACREAGE: 0.98± acres

ZONING DISTRICT: R-20, Conservation District

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Piscataqua River

WAIVERS REQUESTED: N/A

ZBA ACTION: N/A

PERMITS REQUIRED: City of Dover CUP, NHDES Shoreland Permit (approved in April 2025) and NHDES Wetland Permits (approved in June 2025)

CONSERVATION COMMISSION:
Endorsed on 7/14/25.

ATTACHMENTS: Site Plan

Summary of Request and Background:
The applicant is proposing to demolish and reconstruct the existing single-family home, and build two new single-family homes on the parcel. The two single-family homes are proposed outside of the Conservation District and were previously approved by the Planning Board through Transfer of Development Rights on November 12, 2024.

As part of the prior approval on site, the applicant acknowledged the need for a Conditional Use Permit for the reconstruction of the existing single-family home and associated site work. The proposed work in the Conservation District includes 6,000 square feet of impacts for site grading and drainage for culvert installation, underground utility installation, the demolition and reconstruction of a single-family home, and the removal of an existing paved area.

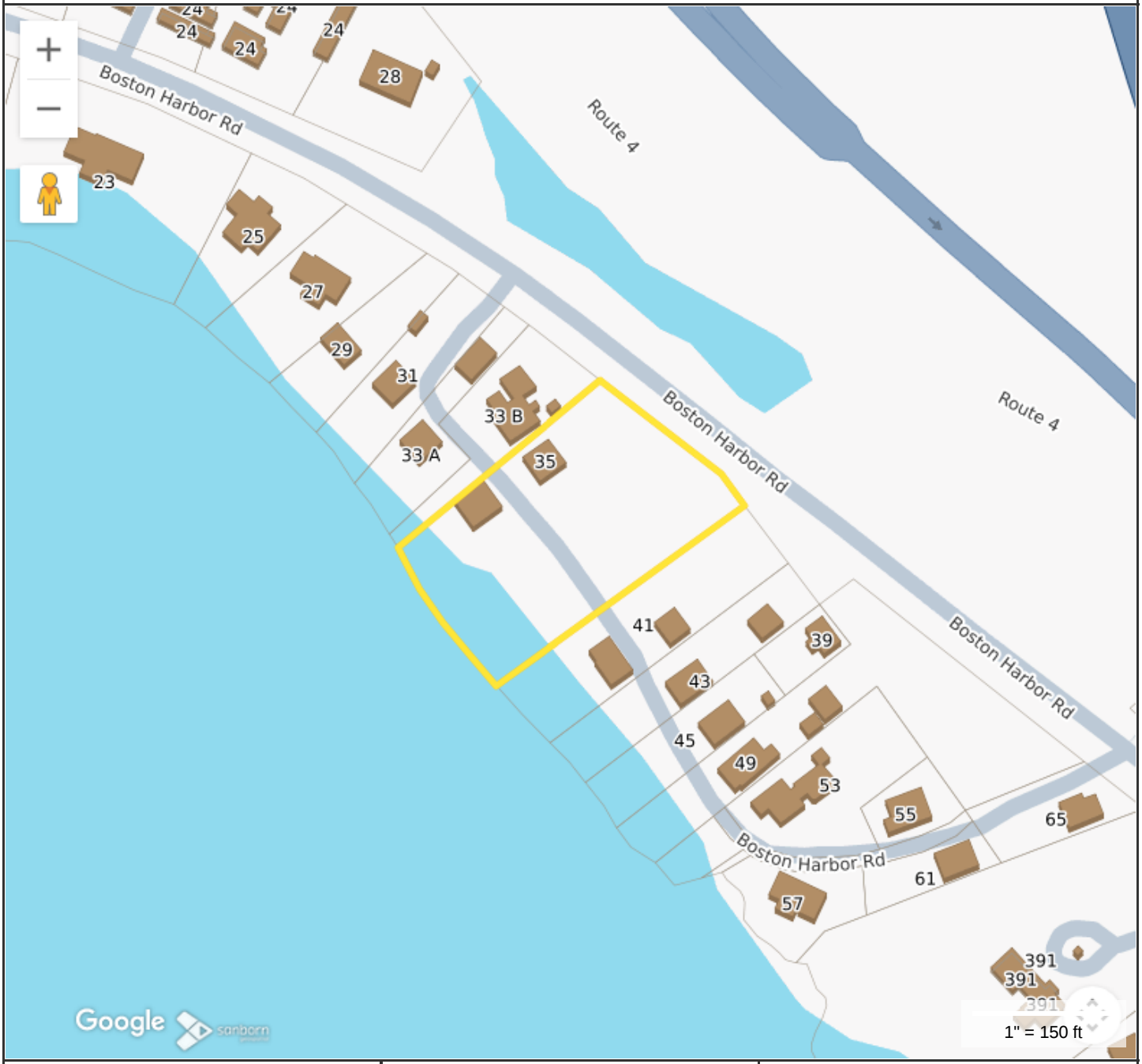
Following consideration at their meeting on February 10, 2025, the Conservation Commission requested NHDES review prior to their decision on the Conditional Use Permit. In April 2025, the applicant received project approval by NHDES for a Shoreland Permit and in June 2025, the applicant received project approval by NHDES for a Wetland Permit. Following these reviews and further review by city staff, the Conservation Commission considered and endorsed the application at their July 14, 2025 meeting. *(minutes attached)*

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

Planning Staff feels that the applicant considered and met all of the criteria as specified in §170-27.C per their narrative. The applicant proposes to redevelop the location of an existing home while implementing measures to improve drainage. The project proposes to install two cross-culverts under Boston Harbor Road with graded swales to address ponding and runoff. Impervious area is proposed to reduce by 577 square feet and erosion and sediment control measures are proposed for construction and until the site is stable. Disturbed areas are also proposed to be loamed and seeded to restore vegetation.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to grant the conditional use permit request.

COND-2025-0002 35 BOSTON HARBOR



Property Information

Location	35 BOSTON HARBOR RD
Owner	TRUE NORTH DEVELOPMENT LLC
Land Use	101R
Zoning Code	R-20
Property Id	07014-000000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 10/30/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2025-0002
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	01/30/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: For project impacts within the Dover Conservation District.

Parcel: 07014-000000 Main	**Address:** 35 Boston Harbor Rd Main Dover, NH	**Zone:** R-20(Residential - Low Density)

Plan Preparer
Stephen Haight
Business: (603) 749-0443

Owner
Zachery Leavitt
Mobile: (603) 501-9107

Engineer
Joe Griffin
P.O. Box 1166
Dover, NH 03821
Business: (603) 749-0443

Applicant
Civilworks New England
Steve Haight
181 Watson Road PO Box 1166
Dover, NH 03820
Business: (603) 749-0443
Mobile: (603) 817-6651

Permit Custom Fields

Select Permit Type	Conservation District	General Purpose	New Construction	Project Zone	Residential
What is the parcel zoned?	R-20	Work	To allow proposed sewer lines for 2 (TDR approved) single-family homes to be connected to the existing public sewer system located within the Dover Conservation District, and to mitigate pre-existing drainage issues with additional grading along the abutting parcels.	permitstatefed	NHDES Shoreland Permit NHDES Wetland Permit

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_1/30/2025.jpg	01/30/2025 16:14	Haight, Steve		Uploaded via CSS
Permit Snapshot Report.pdf	01/30/2025 16:14	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
24097-EXP WETLAND APPLICATION_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
CNE24097-35 Boston Harbor RD-Permit Plan (1-30-25)_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
Conditional Use Permit Application_v1.pdf	03/26/2025 14:54	Haight, Steve		
Owner-Applicant Authorization Letter_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
2025.02.10_ConservationCommission.Minutes.final.pdf	06/26/2025 11:08	Blonigen, Rachel		Final Con Com Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00011039	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-00011039	$200.00	$200.00
	Grand Total for Permit	**$200.00**	**$200.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	Approved	01/31/2025	02/07/2025	06/27/2025	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date

PERMIT SNAPSHOT REPORT (COND-2025-0002)

Planning	Planning	Bassegio, Erin	Approved	01/31/2025	02/28/2025	06/27/2025

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		01/31/2025 12:39	06/27/2025 13:53
Confirm application complete v.1	Generic Action		01/31/2025 12:39
Conditional Use Review v.1	Receive Submittal	01/31/2025 0:00	06/27/2025 13:53
Planning Board v.1		06/27/2025 13:53	
Planning Board Agenda v.1	Task	06/27/2025 13:53	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: True North Development, LLC Telephone # 603-501-9107

Address of Applicant: 99 Columbus Avenue Dover, NH 03820

E-Mail Address: leavittzachery@gmail.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 7 Lot(s) # 14

Address of Property: 35 Boston Harbor Road

Zoning District(s) R-20 Overlay District(s) Dover Conservation District

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

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

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

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

To allow installation of proposed sewer lines associated with the construction of two (2) single family homes, to be connected to the existing public sewer system. Additionally, there will be drainage improvements made to address pre-existing draiange issues affecting the abutting parcels. The proposed work will collectively impact 6,000 s.f. within the Dover Conservation District.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NH DES Shoreland Permit #2025-00234, approved 4/29/2025; NH DES Wetland Permit # 2025-00783, approved 6/27/2025

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH PE #7978 E-mail address: shaight@civilworksne.com

SIGNATURES

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

Signature of Property Owner: _____ Date: 6/30/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 6/30/25

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
7	14	True North Development, LLC	99 Columbus Avenue Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	PO Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # 1 per Application = $ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $ 200.00

AND

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

True North Development, LLC
99 Columbus Avenue
Dover, New Hampshire 03820

January 30, 2025

City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: LETTER OF APPLICANT/OWNER AUTHORIZATION
Conditional Use Permit Application & Approval
35 Boston Harbor Road – Tax Map 7, Lot 14

I, Zachery Leavitt, authorize Civilworks New England and McEneaney Survey Associates to represent all applications made on behalf of me as Member of True North Development, LLC (OWNER/APPLICANT) to the City of Dover Planning Board and any other Dover Board or Committee, as well as any State of NH departments, as necessary, relative to the pursuit of approvals and permits for the development of the subject parcel.

Sincerely,

Zachery Leavitt, Member
True North Development, LLC

COND-2025-0002 **35 BOSTON HARBOR ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
07013-000000	31 BOSTON HARBOR RD	KENNETT SUSAN MACLEARY		2099 BULLSHEAD RD	STANFORDVILLE	NY	12581
07013-A00000	29 BOSTON HARBOR RD	MCDONOUGH MICHAEL C &	MCDONOUGH SANDRA J	29 BOSTON HARBOR RD	DOVER	NH	03820
07013-B00000	33 BOSTON HARBOR RD	FRITZ JOHN & JEAN MARIE CO-TRUSTEES	FRITZ FAMILY REVOCABLE TRUST OF 2015	33 A BOSTON HARBOR RD	DOVER	NH	03820
07013-C00000	33 BOSTON HARBOR RD	POLLARD SAMUEL W & JANE P TRUSTEES	POLLARD FAMIL REVOCABLE TRUST 2020	33 B BOSTON HARBOR RD	DOVER	NH	03820
07015-000000	41 BOSTON HARBOR RD	OXX AMANDA RAE TRUSTEE	THE PACC IRREVOCABLE TRUST	41 BOSTON HARBOR ROAD	DOVER	NH	03820
07016-000000	43 BOSTON HARBOR RD	FUNK SARA		43 BOSTON HARBOR RD	DOVER	NH	03820
07017-000000	39 BOSTON HARBOR RD	STEINKE CHRISTOPHER R	STEINKE HAILEE O	64 BARTLETT AVE	SOMERSWORTH	NH	03878
07017-A00000	45 BOSTON HARBOR RD	HAFFNER CHRISTI S TRUSTEE	THE CHRISTI S HAFFNER REV LIV TRUST	45 BOSTON HARBOR RD	DOVER	NH	03820-4645
07018-000000	49 BOSTON HARBOR RD	CASEY THOMAS & JOHN F III TRUSTEES	CASEY THOMAS REVOC TRUST OF 2015	49 BOSTON HARBOR ROAD	DOVER	NH	03820
07014-000000	35 BOSTON HARBOR RD	TRUE NORTH DEVELOPMENT LLC		99 COLUMBUS AVE	DOVER	NH	03820
		CIVILWORKS NEW ENGLAND	STEPHEN HAIGHT, PE	PO BOX 1166	DOVER	NH	03821

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday February 10, 2025
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Steve Fellows (Vice Chair), Kristen Murphy, Abigail Lyon, Russ Warnock (Alternate), Brianna Group, Robert Atwood (Secretary)
Absent (Excused):
Absent (Unexcused): Jake Geddes
STAFF PRESENT: Makayla Edgecomb (Conservation Planner), Donna Benton (Planning Director)
OTHERS PRESENT:

1. CALL TO ORDER AND ROLL CALL

The meeting was convened at 5:30 PM.

2. ANNUAL NOMINATIONS AND ELECTIONS OF OFFICERS FOR 2025

The current officers all agreed to serve another year unless someone else was interested.
The members voted all in favor for the slate of officers as is for another year.

3. CITIZENS' FORUM

The Chair gave instructions for Citizens' forum.
No one spoke

4. APPROVAL OF THE PRIOR MEETING MINUTES- JANUARY 13, 2025

S. Fellows moved to approve the minutes of January 13, 2025 as submitted. A. Lyon seconded. Vote: U/A

5. OLD BUSINESS:

M. Edgecomb noted staff is working on a committee handbook starting with Planning Board as a template and will move to other boards and committees after that. The goal is to have one in the next few months.

6. NEW BUSINESS

The Chair noted there has been a request to proceed with the meeting out of order as listed on the agenda. No one had an objection.

B. City of Dover Conditional Use Permit for Summit Land Development, LLC, (Owner: 16 Industrial Park, LLC), Assessor's Map G, Lot 4-1, zoned CM, located at Industrial Park Road. Proposal is for a stormwater management system and associated site grading for a seasonal automobile storage and maintenance facility, resulting in 6,830 ± s.f. of wetland buffer impacts and no direct wetland impacts.

Jace Gregoire, Civil Works represented the item, described the site and noted the proposal is to is for a stormwater management system and associated site grading for a seasonal automobile storage and maintenance facility. The wetland buffer impacts result in 6,830 ± s.f. with no direct wetland impacts.

Committee members asked some clarifying questions which were addressed by the applicant.

S. Fellows moved to endorse the CUP as presented. Seconded by: R. Atwood. Vote: All in favor with 0 opposed.

A. City of Dover Conditional Use Permit and NHDES Expedited Minimum Impact Wetlands Permit for True North Development, LLC, Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Rd. . Proposal is to construct utility lines and drainage and grading improvements to support the development of two (2) new single-family homes, resulting in 2,756 square feet of impact within the Conservation District. *(The two single-family homes were previously approved through Transfer of Development Rights (TRAN-2024_0013) and are proposed outside of the Conservation District*

Proposal is to construct utility lines and drainage and grading improvements to support the development of two (2) new single-family homes, resulting in 2,756 square feet of impact within the Conservation District. Approval required of NHDES Expedited Minimum Impact Wetlands Permit for True North Development, LLC

Jace Gregoire, Civil Works presented the item. He explained the site: location and existing elements. He explained the proposal to the committee.

D. Benton explained the transfer of development rights program/ options.

The applicant answered questions from committee members.

Members expressed concerns about the proposed impervious cover so close to the bay. The applicant addressed the concern by giving additional details.
Discussion occurred relating to the approved development and its relation to the water.
Continued discussion items included: trees/ vegetation, culverts, drainage, stormwater maintenance and management.

S. Fellows noted hesitation to approve, but as the buildings have been approved for construction, it seems reasonable to make the allowances for utilities and drainage.

S. Fellows moved to endorse the CUP and wetlands permit as presented. Seconded by: K. Murphy.
Additional discussion:

- The drainage will be reviewed by City Engineer for compliance/ requirements. There is concern about the future with run-off and the TDR program should be looked at and sensitive areas like this should perhaps not be granted TDR approval.
- Interested to have DES input prior to a vote. There was a recent item that was approved by Conservation Commission and then denied by DES.
- Plantings

Vote: 3 in favor with 4 opposed. Request is not approved.

Discussion with committee and staff on next steps. Committee should write up a list of items they have concerns about and provide that information to staff so the items can be addressed by staff and the applicant as appropriate.

- Run model again
- City Engineering review
- Have DES weigh in first

Details about concerns were reviewed with the applicant.

R. Warnock moved to continue the item for the reasons discussed. Seconded by: A. Lyon. Vote: All in favor

C. Conservation Fund Request for Staff Administration Costs

D. Benton explained the annual request.

S. Fellows moved to approve the fund request of $110,000. K. Murphy seconded. Vote: All in favor.

7. REPORT FROM THE CHAIR

a. Review of Correspondence Received from NH Department of Environmental Services

M. Edgecomb noted the correspondence received is one letter from NHDES, an approval of a tidal docking structure at the undeveloped lot on Back Rd.

8. OTHER BUSINESS

A. Update from Forest Management Subcommittee

- **a.** Ash trees
  - **i.** Met with John Storer of Community Services
  - **ii.** How can Con Com help?
  - **iii.** Focus on replacing non-ash trees with current budget funds
  - **iv.** subcommittee will work on a plan to most efficiently replace the ash trees
    1. Prep a Grant for a plan for the ash trees- in progress
    2. Discussion on timeline

B. **City Nature Challenge**

- a. B. Group looking to set this up in Dover. It's April 25-28. She explained the details.
  - i. Discussion and ideas

9. ADJOURNMENT

S. Fellows moved to adjourn. R. Warnock seconded. Vote: U/A
The meeting was adjourned at 6:47 PM.

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday July 14, 2025
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Russ Warnock, Kristen Murphy, Brianna Group (Alternate), Robert Atwood (Secretary)
Absent (Excused): Steve Fellows (Vice Chair), Abigail Lyon
Absent (Unexcused):
STAFF PRESENT: Makayla Edgecomb (Conservation Planner)
OTHERS PRESENT:

1. **CALL TO ORDER AND ROLL CALL**
   The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM**
   None

3. **APPROVAL OF THE PRIOR MEETING MINUTES** (SPECIAL MEETING) JUNE 16TH, 2025

R. Atwood moved to approve the minutes of June 16th. R. Warnock seconded. Vote: 4 in favor with 1 abstention

4. **OLD BUSINESS:**
   None

5. **NEW BUSINESS**

   A. City of Dover Conditional Use Permit for Dover Development, LLC, Assessor's Map 40, Lot 25, zoned C, located at 52 Old Rochester Road. Proposal seeks to allow 44.15% impervious surface coverage within the Secondary Groundwater Protection District where 20% is allowed.

Christopher Berry, Berry Surveying and Engineering presented and explained the proposal highlighting the soils on site, existing uses on site, existing impervious surface coverage, location and surroundings.
He explained the proposal to create a small parking lot and three mixed-used buildings. He gave details regarding drainage, pavement areas, storm water changes and improvements, and porous areas.

Mr. Berry clarified additional information for the commission members relating to treatment areas, landscaping plan, ownership and maintenance responsibilities, porous/impervious drive areas and regulations for future oversight.
The members discussed following the ordinance verses the technologies that have come since some of the regulations were put in place.

R. Warnock moved to endorse the CUP as presented. K. Murphy seconded. Vote: 5 in favor

   B. City of Dover Conditional Use Permit for McDonald's USA LLC (c/o Bohler), Assessor's Map H, Lot 4-3, located at 30 Grapevine Drive. Proposal seeks to allow construction of a new McDonald's restaurant and parking with impacts within the Wetland Protection District. The proposed activity results in approx. 7,630 s.f. of re-contouring and grading of land and the construction of parking lots within the 50' wetland buffer. There are no direct wetland impacts proposed.

DRAFT

Connor Ennis, Bohler Engineering, presented the item highlighting background information of the existing conditions on site, and details of the proposed new restaurant with drive-thru. These included parking, landscaping, impacts to wetlands/buffers and storm water management.

The members discussed details of drainage and storm water with the applicant. Additional discussion occurred about the proposed small paving area over the wetlands buffer, traffic patterns, and snow storage.

K. Murphy moved to endorse the CUP with the condition that the snow storage be relocated outside the buffer. R. Atwood seconded. Vote: 4 in favor with 1 opposed.

> **C**. City of Dover Conditional Use Permit for True North Development, LLC Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Rd. Proposal seeks to allow Conservation District impacts for the construction of two single-family homes. Proposal includes temporary impacts related to underground utility installation and permanent impacts due to grading and drainage improvements totaling approx. 6,000 s.f. [NHDES approvals were received and provided as part of this application per previous conditions set by the Conservation Commission]

Joe Griffin, CivilWorks presented and explained the proposal highlighting the existing conditions and details of the proposal including impacts to shore land and buffer. The item was before the Commission in February, and the applicant was asked to address three items:

- Wetlands Bureau feedback
  - DES endorsed all applications
- City Engineer and abutters agree and approve of the proposed culverts
  - Storm water treatment
- Review sea level rise scenario based on UNH predictive trends
  - Review done and explained

Additional details were given to the members relating to location of the culverts and scenarios used in the models. The Chair noted it appears the request of the Commission in February has been met.

R. Atwood moved to endorse the CUP as presented. R. Warnock seconded. Vote: All in favor

> **D.** City of Dover Conditional Use Permit for Eric Latour, Assessor's Map B, Lot 18-43, zoned R-40, located at 28 Cornerstone Drive. Proposal seeks to allow wetland buffer impacts for the construction of a garage and small mudroom that will result in approx. 2,435 s.f. of buffer impacts from two overlapping wetland buffers. There are no direct wetland impacts proposed.

Eric Latour, owner, presented the item and explained the request by highlighting the existing site, proposed garage and mudroom details, and description of wetlands. Stating that one wetland was not naturally occurring.

R. Warnock made a motion to endorse the CUP as presented. Seconded by R. Atwood. Vote: All in favor

> **E.** City of Dover Conditional Use Permit for Tina M. Sawtelle Assessor's Map B, Lot 1-C, zoned R-40, located at 476 Sixth Street. Proposal seeks to allow wetland buffer impacts and conservation district impacts for the expansion of an existing single-family home with approx. 216 s.f. of permanent wetland buffer impacts and approx. 150 s.f. of temporary buffer disturbance. There are no direct wetland impacts proposed.

DRAFT

As no applicant was present to address the item, the item was not heard and will go to the August meeting upon applicant request.

> **F.** City of Dover Conditional Use Permit for Summit Land Development, LLC, Assessor's Map G, Lot 2, zoned CM, located at Littleworth Road. Proposal seeks to allow approx. 16, 678 s.f. of wetland buffer impacts for the construction of an accessway and grading for the installation of a bioretention pond with internal reservoir. Applicant is proposing the CUP as part of the construction of a light industrial building. There are no direct wetland impacts proposed.

Joe Griffin, CivilWorks presented and explained the proposal highlighting site location, details of the proposed building, required permits, impacts, required storm water management practices (bioretention reservoir), drainage.

Details were clarified for the members relating to access, location, and plans for temporary impact areas.

A member reiterated a comment he made last month noting the mismatch of priorities for this area of the City. This area is the single largest hot spot of un-conserved land with the highest priority value for natural resources, yet it's zoned industrial and it's getting built over.

Additional conversation occurred regarding the poor soils in the area and seed specification for the temporary impact areas not being included in the information packet provided.

B. Group made a motion to endorse the CUP as presented with the condition that a note is added to the plan indicating seed specification. Seconded by K. Murphy. Vote: All in favor

Additional conversation occurred expounding on options for preserving and conserving land in that area.

- Land owner initiative
- Zoning changes
- Request to Open Lands Committee for a discussion

6. REPORT FROM THE CHAIR

a. Review of Correspondence Received from NH Department of Environmental Services

None

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

- Ash Tree Info Walk recap
  - Another one planned for August
  - Need better marketing and more advanced marketing
  - Feedback from participants

B. Other:

- Board member handbook is being revised
- Workshop tentative for July 21st

8. ADJOURNMENT

R. Warnock moved and R. Atwood seconded to adjourn. Vote: U/A
The meeting was adjourned at 7:13 PM.

DRAFT

PROJECT NARRATIVE

for

Trust North Development

Conditional Use Permit

Residential Site Development

35 Boston Harbor Road

Tax Map 7, Lot 14

PROJECT OVERVIEW & SITE CHARACTERISTICS

The subject parcel is located at 35 Boston Harbor Road, Dover, NH, shown on Tax Map 7 as Lot 14 and is located within the City of Dover's R-20 District. The 0.98± acre lot is currently developed with an existing single-family home, detached garage, paved driveway, shared gravel drive, landscape and lawn areas, and utilities. The subject parcel is located adjacent to Little Bay and the entire lot is subject to the NHDES 250' Protected Shoreland and 100' Tidal Buffer Zone. Additionally, a portion of the parcel is within a Special Flood Hazard Area, Zone AE, Elevation 6, as shown on Flood Insurance Rate Map 33017C0340E.

The proposed design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The total proposed project disturbance is 29,963 sf, with 23,963 sf within the NHDES 250' Protected Shoreland jurisdiction, and 6,000 sf within the NHDES 100' Tidal Buffer Zone jurisdiction and City of Dover Conservation District. The proposed work within Conservation District includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area. There is no work proposed within the Special Flood Hazard area.

CONSERVATION DISTRICT SETBACK & IMPACT

The site is located directly adjacent to Little Bay and is subject to the City of Dover's 100' Conservation District. The proposed work within the Conservation District includes 6,000 sf of temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area.

PERMIT SUMMARY

City of Dover Conditional Use Permit: Pending
NHDES Shoreland Permit: APPROVED 4/29/2025 # 2025-00234
NHDES Wetlands Permit: APPROVED 6/27/2025 # 2025-00783

DRAINAGE

Historically, stormwater runoff backs up between the paved and gravel sections of Boston Harbor Road. The raised gravel section prevents stormwater runoff from draining and discharging into Little Bay. This is a known concern that has been acknowledged by the abutters and City of Dover's Engineering department. As part of this project, the applicant has agreed to install two (2) 12" HDPE cross-culverts under the gravel section Boston Harbor Road (one (1) on either side of the subject parcel). Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

The proposed project will implement stone drip edges along the edges of the existing & proposed buildings and along the proposed edges of pavement. This will the ability for stormwater to be infiltrated and treated prior to discharging to Little Bay.

The proposed project will have a minimal impact on the watershed and will improve the current drainage situation in the area.

CONDITIONAL USE PERMIT NARRATIVE
§170-27
DOVER CONSERVATION DISTRICT
for
True North Development, LLC
Residential Site Development
35 Boston Harbor Road
Tax Map 7, Lot 14

C. Conditional Use Permits

(2) The undertaking of a use not otherwise permitted in the Conservation District, which may include the erection of a structure, dredging, filling, draining or otherwise altering the surface configuration of the land, provided that:

(d) A written review by the Conservation Commission of the environmental effects of the proposed use upon the area in question has been submitted. The Commission's review shall address the following, but is not limited to:

(1) Attempted avoidance of the impact:

The proposed site design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The project proposes a total disturbance of 29,963 sf, with the majority, 23,963 sf, being located upland and outside of the City of Dover's Conservation District, and 6,000 sf within the Conservation District. The proposed work within the Conservation District includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with demolition and reconstruction of the single-family home, and impacts associated with the removal of existing paved area.

(2) Minimization of the impacts:

The project has been designed to limit impacts to the greatest extent possible within the Conservation District. The estimated total disturbance for the proposed project is 29,963 sf, with the majority, 23,963 sf, located upland and outside of the City of Dover's Conservation District, and 6,000 sf within the Conservation District.

(3) Planned mitigation of the effects of the impact:

The project proposes two (2) cross-culverts to be installed along the property lines under Boston Harbor Road to help address known ponding issues. Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

This project also includes a net reduction of 577 sf of impervious area within the Conservation District, including the removal of paved areas between the existing home and Little Bay, as well as the implementation of stone drip edges around the existing foundations and proposed buildings on the property.

Additionally, all disturbed areas will be loamed and seeded.

(4) Efficacy of the soil erosion and sedimentation control plan:

During construction a double row siltsoxx is proposed along the edge of disturbance, this will prevent silt and construction debris from washing into Little Bay. At the completion of the project, the areas that are disturbed will be re-graded, and loamed and seeded. The siltsoxx will not be removed until the site is stable. See plan set for locations, specifications, and details for erosion control.

DRAINAGE NARRATIVE

PROJECT SITE CHARACTERISTICS

The subject parcel is located at 35 Boston Harbor Road, Dover, NH shown on Tax Map 7 as Lot 14 and located within the City of Dover's R-20 District. The 0.98± acre lot is currently developed as residential with an existing single-family home, detached garage, paved driveway, shared gravel drive, landscape and lawn areas, and utilities. The subject parcel is located adjacent to Little Bay and the entire lot is subject to the NHDES 250' Protected Shoreland and 100' Tidal Buffer Zone. Additionally, a portion of the parcel is within a Special Flood Hazard Area, Zone AE, Elevation 6, as shown on Flood Insurance Rate Map 33017C0340E.

PROJECT OVERVIEW

The proposed site design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The total proposed project disturbance is 29,963 sf, with 23,963 sf within the NHDES 250' Protected Shoreland jurisdiction, and 6,000 sf within the NHDES 100' Tidal Buffer Zone jurisdiction and City of Dover Conservation District. The proposed work within the 100' Tidal Buffer Zone includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area. NHDES Shoreland Permit # 2025-00234, issued 4/29/2025 and Wetland Permit # 2025-00783, issued 6/27/2025. There is no proposed work within the Special Flood Hazard area.

DRAIANGE

Historically, stormwater runoff backs up between the paved and gravel sections of Boston Harbor Road. The raised gravel section prevents stormwater runoff from draining and discharging into Little Bay. This is a known concern that has been acknowledged by the abutters and City of Dover's Engineering department. As part of this project, the applicant has agreed to install two (2) 12" HDPE cross-culverts under the gravel section Boston Harbor Road (one (1) on either side of the subject parcel). Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

The proposed project will implement stone drip edges along the edges of the existing & proposed buildings and along the proposed edges of pavement. This will the ability for stormwater to be infiltrated and treated prior to discharging to Little Bay.

The proposed project will have a minimal impact on the watershed and will improve the current drainage situation in the area.

SHORELAND IMPACT PERMIT 2025-00234

NOTE CONDITIONS

PERMITTEE:	**TRUE NORTH DEVELOPMENT LLC** **99 COLUMBUS AVE** **DOVER NH 03820**
PROJECT LOCATION:	**35 BOSTON HARBOR RD, DOVER** **Tax Map/Block/Lot(s): 7/no block/14**
WATERBODY:	**LITTLE BAY**
APPROVAL DATE:	**APRIL 29, 2025** **EXPIRATION DATE: APRIL 29, 2030**

Shoreland Permit Application 2025-00234 has been found to meet or exceed the requirements of RSA 483-B as required per RSA 483-B:6, II. The New Hampshire Department of Environmental Services (NHDES) hereby issues this Shoreland Impact Permit with conditions pursuant to RSA 483-B:6, II.

PERMIT DESCRIPTION:
Impact 23,963 square feet (SF) of protected shoreland in order to demolish and reconstruct the existing single-family home, construct two (2) new single-family homes, grade and provide drainage improvements, utility improvements, along with the reconstruction of the paved site access.

Impervious Surface Percentage Approved: 29.4%

Natural Woodland Area Required per RSA 483-B:9, V, (b): 4,575 SF.

THE FOLLOWING PROJECT-SPECIFIC CONDITIONS HAVE BEEN APPLIED TO THE PERMIT PURSUANT TO ENV-WQ 1406.15(c):

1. All work shall be in accordance with plans by Civilworks New England dated March 31, 2025 and received by the New Hampshire Department of Environmental Services (NHDES) on March 31, 2025 pursuant to Env-Wq 1406.15(f).
2. Within three days of final grading or temporary suspension of work in an area that is in or adjacent to wetlands or surface waters, all exposed soil areas shall be stabilized by seeding and mulching during the growing season, or if not within the growing season, by mulching with tack or netting and pinning on slopes steeper than 3:1 as required pursuant to RSA 483-B:9, V(d) Erosion and Siltation, (1).
3. All pervious technologies used shall be installed and maintained to effectively absorb and infiltrate stormwater as required per RSA 483-B:6, II and Rule Env-Wq 1406.15(c) in order to ensure compliance with RSA 483-B:9, V(g).
4. The proposed stormwater management structure shall be installed and maintained to effectively absorb and infiltrate stormwater in order to ensure compliance with RSA 483-B:9, V(g).
5. Photographs documenting the construction of the proposed stormwater management shall be submitted to the Department prior to any party taking up occupancy of the new residential primary structure as required per RSA 483-B:6, II and Rule Env-Wq 1406.15(c) in order to ensure compliance with RSA 483-B:9, V(g).
6. This permit shall not be interpreted as acceptance or approval of any impact that will occur within wetlands jurisdiction regulated under RSA 482-A including all wetlands, surface waters and their banks, the tidal-buffer zone,

and sand dunes. The owner is responsible for maintaining compliance with RSA 482-A and Administrative Rules Env-Wt 100 - 900 and obtaining any Wetland Impact Permit that may be required prior to construction, excavation or fill that will occur within Wetlands jurisdiction as required pursuant to RSA 483-B:6, I(b).

7. This permit shall not preclude NHDES from taking any enforcement or revocation action as authorized pursuant to 483-B:5, I, if NHDES later determines that any of the structures depicted as "existing" on the plans submitted by the applicant were not previously permitted or grandfathered.

THE FOLLOWING STANDARD PROJECT CONDITIONS SHALL BE MET PURSUANT TO ENV-WQ 1406.20:

1. Erosion and siltation control measures shall be installed prior to the start of work, be maintained throughout the project, and remain in place until all disturbed surfaces are stabilized.
2. Erosion and siltation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.
3. No person undertaking any activity in the protected shoreland shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards established in Env-Wq 1700, and the requirements in Env-Wq 1404.01(a) and(b).
4. Any fill used shall be clean sand, gravel, rock, or other suitable material.
5. For any project where mechanized equipment will be used, orange construction fence shall be installed prior to the start of work at the limits of the temporary impact area as shown on the approved plans; be maintained throughout the project; and remain in place until all mechanized equipment has been removed from the site.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:

1. During construction, a copy of this permit should be posted on site in a prominent location visible to inspecting personnel.
2. This permit does not convey a property right, nor authorize any injury to property of others, nor invasion of rights of others.
3. Pursuant to Env-Wq 1406.21, transfer of this permit to a new owner requires notification to, and approval of, NHDES.
4. This project has been screened for potential impact to **known** occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

APPROVED:

Craig W. Day
Shoreland/Shoreline Specialist, Shoreland Program
Wetlands Bureau, Land Resources Management
Water Division

THIS PERMIT IS NOT VALID UNTIL SIGNED BY THE PARTIES BELOW (Env-Wq 1406.21(c))

PERMITTEE SIGNATURE (required)

PRINCIPAL CONTRACTOR SIGNATURE (required, if any)

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

June 30, 2025

TRUE NORTH DEVELOPMENT LLC
99 COLUMBUS AVE
DOVER NH 03820

Re: Approved Standard Dredge and Fill Wetlands Permit Application (RSA 482-A)
NHDES File Number: 2025-00783
Subject Property: 35 Boston Harbor Rd, Dover, Tax Map/Block/Lot(s): 7/no block/14

Dear Applicant:

On June 27, 2025, the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau approved the above-referenced Standard Dredge and Fill Wetlands Permit Application. Enclosed please find Wetlands Permit # 2025-00783 to Impact 6,000 square feet of previously developed 100-foot tidal buffer zone to remove and reconstruct an existing primary structure, install underground utilities, improve stormwater drainage and site grading. The permittee shall notify the department in writing at least one week prior to commencing any work under this permit and shall file a notice of completion of work and certificate of compliance with the department within 10 working days of completion of the work authorized by this permit.

This permit is not valid unless signed by the permittee and the principal contractor, if any, who will build or install the project. Prior to start of construction, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project**.** It shall remain posted until the project is completed. Transfer of this permit to a new owner shall require notification to, and approval of, the NHDES. **This permit does not convey any property right, nor does it preclude the need to meet any other applicable state, federal, or municipal legal requirements.**

In accordance with RSA 482-A:10, RSA 21-O:14, and Rules Ec-Wet 100-200, **any person aggrieved by this decision may file a Notice of Appeal directly with the NH Wetlands Council (Council) within 30 days of the decision date, June 27, 2025.** Every ground claiming the decision is unlawful or unreasonable must be fully set forth in the Notice of Appeal. Only the grounds set forth in the Notice of Appeal are considered by the Council. Information about the Council, including Council Rules, is available at https://www.nhec.nh.gov/wetlands-council/about. For appeal related issues, contact the Council Appeals Clerk at (603) 271-3650.

This approval is based on the following findings:

1. This project is classified as a minor impact project in accordance with Env-Wt 610.17(b)(3) for any dredging, filling, or construction activity, or any combination thereof, that will disturb 3,000 SF or more but less than 10,000 SF in the developed upland tidal buffer.
2. Per Rule Env-Wt 311.06(h), the Dover Conservation Commission did not provide comments on the proposed project.

If you have any questions, please contact me at Alexander.D.Feuti@des.nh.gov or (603) 271-2917.

Sincerely,

Alexander Feuti
Wetlands Specialist, Wetlands Bureau
Land Resources Management, Water Division

Enclosure

Copied: Stephen Haight, Civilworks New England
Municipal Clerk/Conservation Commission

WETLANDS PERMIT 2025-00783
NOTE CONDITIONS

PERMITTEE:	**TRUE NORTH DEVELOPMENT LLC** **99 COLUMBUS AVE** **DOVER NH 03820**
PROJECT LOCATION:	**35 BOSTON HARBOR RD, DOVER** **Tax Map/Block/Lot(s): 7/no block/14**
WATERBODY:	
APPROVAL DATE:	**JUNE 27, 2025** **EXPIRATION DATE: JUNE 27, 2030**

The New Hampshire Department of Environmental Services' (NHDES) review of permit application 2025-00783 has found that it is consistent with RSA 482-A. NHDES hereby issues this Wetlands Permit authorizing the impacts described provided the Conditions imposed are met. To validate this Permit, the Permittee and the Principal Contractor are required to sign below.

PERMIT DESCRIPTION:
Impact 6,000 square feet of previously developed 100-foot tidal buffer zone to remove and reconstruct an existing primary structure, install underground utilities, improve stormwater drainage and site grading.

THIS PERMIT IS SUBJECT TO THE FOLLOWING PROJECT-SPECIFIC CONDITIONS:
1. In accordance with Env-Wt 307.16, all work shall be done in accordance with the revised plans by Civilworks New England, dated March 31, 2025 and as received by the NH Department of Environmental Services (NHDES) on April 28, 2025.
2. In accordance with Env-Wt 314.02(b) and (c), the permittee shall record the permit at the Strafford County Registry of Deeds. Any limitations or conditions in the permit so recorded shall run with the land beyond the expiration of the permit. The permittee shall provide the department with a copy of the permit stamped by the registry with the book and page and date of receipt.
3. All work shall be conducted and maintained in such a way as to protect water quality as required by Rule Env-Wt 307.03(a) through (h).
4. In accordance with Env-Wt 307.15(b), mobile heavy equipment working in wetlands shall not be stored, maintained, or repaired in wetlands, except that repairing or refueling in a wetland is allowed if equipment cannot practicably be removed and secondary containment is provided.
5. In accordance with Env-Wt 307.03(g)(1), the person in charge of construction equipment shall inspect such equipment for leaking fuel, oil, and hydraulic fluid each day prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands.
6. In accordance with Env-Wt 307.03(g)(2), the person in charge of construction equipment shall repair any leaks prior to using the equipment in an area where such fluids could reach groundwater, surface waters, or wetlands.
7. In accordance with Env-Wt 307.03(g)(3) and (4), the person in charge of construction equipment shall maintain oil spill kits and diesel fuel spill kits, as applicable to the type(s) and amount(s) of oil and diesel fuel used, on site so as to be readily accessible at all times during construction; and train each equipment operator in the use of the spill kits.
8. In accordance with Env-Wt 307.12(c), any seed mix used shall not contain plant species that are exotic aquatic weeds.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:
1. This permit does not preclude the need to meet any other applicable state, federal, or municipal legal requirements.

2. The permit holder is responsible for reading, and ensuring compliance with, the applicable general conditions established in Env-Wt 307.
3. This permit does not in any way authorize the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.
4. This approval does not convey any property right. The permittee is responsible for ensuring that they have the legal authority to access the subject lands and conduct the impacts described.

APPROVED:

Alexander Feuti
Wetlands Specialist, Wetlands Bureau
Land Resources Management, Water Division

THE SIGNATURES BELOW ARE REQUIRED TO VALIDATE THIS PERMIT (Env-Wt 314.01).

_____ _____

PERMITTEE SIGNATURE (required) PRINCIPAL CONTRACTOR SIGNATURE (required)

NHDES SHORELAND/WETLANDS PERMIT
& CITY OF DOVER
CONDITIONAL USE PERMIT PLAN

TAX MAP 7, LOT 14

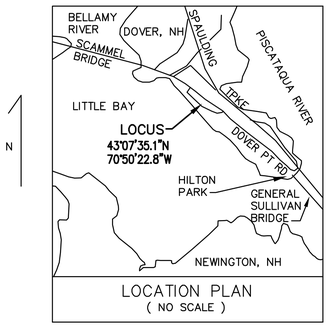
35 BOSTON HARBOR ROAD

DOVER, NH

JANUARY 30, 2025

REVISED: MARCH 31, 2025

REVISED: JUNE 30, 2025



LOCATION PLAN
(NO SCALE)

_____ _____
DATE

OWNER/APPLICANT

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

SITE CIVIL ENGINEER

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LAND SURVEYOR

MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 1166
181 WATSON ROAD
DOVER, NH 03821
(603) 742-0911

SHEET INDEX

	SHEET
COVER SHEET	1
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GRADING, DRAINAGE, & EROSION CONTROL PLAN	6
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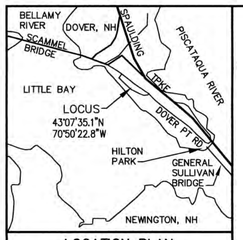


LOCATION PLAN
(NO SCALE)

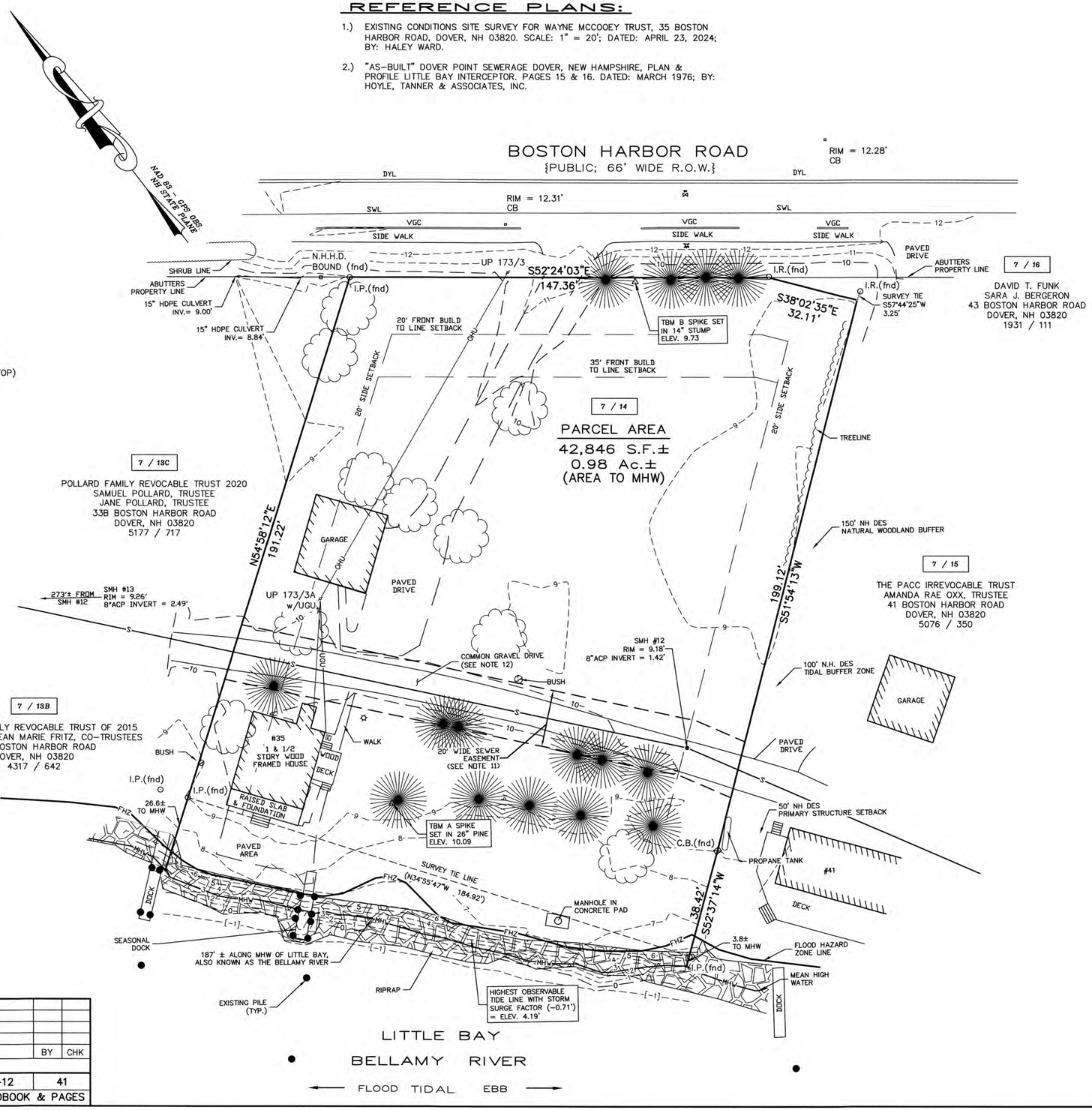
LEGEND

I.P.(fnd) – IRON PIPE (FOUND)
I.R.(fnd) – IRON ROD (FOUND)
C.B.(fnd) – CONCRETE BOUND (FOUND)
CB – CATCH BASIN
WG – WATER GATE VALVE
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o-UP 410/5 – UTILITY POLE W/ I.D. Nos.
R.O.W. – RIGHT OF WAY
— 10 — — — CONTOUR LINE
WSO – WATER SHUT OFF (CURB STOP)
HYD. – FIRE HYDRANT
— W — WATER SERVICE LINE
— S — SEWER LINE
MHW – MEAN HIGH WATER
SMH – SEWER MANHOLE
OHU – OVERHEAD UTILITIES
UGU – UNDERGROUND UTILITIES
SWL – SINGLE WHITE LINE
DYL – DOUBLE YELLOW LINE
VGC – VERTICAL GRANITE CURB
– LAMP POST
– DECIDUOUS TREE
– CONIFEROUS TREE

REFERENCE PLANS:

1.) EXISTING CONDITIONS SITE SURVEY FOR WAYNE MCCOOEY TRUST, 35 BOSTON HARBOR ROAD, DOVER, NH 03820. SCALE: 1" = 20'; DATED: APRIL 23, 2024; BY: HALEY WARD.

2.) "AS-BUILT" DOVER POINT SEWERAGE DOVER, NEW HAMPSHIRE, PLAN & PROFILE LITTLE BAY INTERCEPTOR. PAGES 15 & 16. DATED: MARCH 1976; BY: HOYLE, TANNER & ASSOCIATES, INC.



NOTES:

1.) OWNER OF RECORD:
TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 5196, PAGE 358

2.) 7 / 14 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA = 42,846 S.F.± / 0.98 Ac. ±

4.) THE INTENT OF THIS PLAN IS TO DEPICT THE PARCEL BOUNDARIES AND EXISTING SITE CONDITIONS AS OF NOVEMBER 21, 2024.

5.) ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20)
DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE (20,000 x 3)	= 60,000 S.F.*
* 170-28.1. RIVERFRONT RESIDENTIAL OVERLAY DISTRICT. THE MINIMUM LOT SIZE SHALL BE THREE TIMES THE MINIMUM LOT SIZE	
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 125 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD TO LINE	= 20 FEET MINIMUM – 35 FEET MAXIMUM
SIDE SETBACK	= 20 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET
WETLAND BUFFER	= 50 FEET

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION PER REFERENCE PLAN No. 1.

8.) ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO ANY WORK BEING PERFORMED. CALL DIGSAFE AT 1-888-344-7233.

9.) NO WETLANDS WERE OBSERVED ON THE SITE PER REFERENCE PLAN No. 1, IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL.

10.) PARCEL IN ITS ENTIRETY IS SUBJECT TO THE STATE OF NEW HAMPSHIRE SHORELINE WATER QUALITY PROTECTION ACT (SWQPA). THOSE AREAS WITHIN 250 FEET OF THE BELLAMY RIVER REFERENCE LINE.

11.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.
THE PARCEL IS SUBJECT TO A SEWER EASEMENT TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. BOOK 1007, PAGE 166.

12.) THE PARCEL IS SUBJECT TO A COMMON DRIVEWAY EASEMENT LOCATED OVER THE PARCEL. S.C.R.D. VOL. 396, PAGE 136, NO WIDTH GIVEN.

THE PARCEL BENEFITS FROM ACCESS EASEMENTS OVER VARIOUS ABUTTING PARCELS PROVIDING ACCESS TO BOSTON HARBOR ROAD OVER THE EXISTING DRIVEWAY.

13.) THE SOIL TYPE ON THE SITE IS:
Sb SAUGATUCK LOAMY SAND
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

14.) INVERT DATA WAS PROVIDED BY THE CITY OF DOVER AND NEEDS TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION. THE INFORMATION PROVIDED CAN BE FOUND ON REFERENCE PLAN #2.

NO.	DATE	DESCRIPTION	BY	CHK
	24097	REVISIONS		

24-2628	EC	24-12	41
PROJECT NO	TYPE	FIELDBOOK & PAGES	

EXISTING CONDITIONS PLAN
PREPARED FOR
TRUE NORTH DEVELOPMENT, LLC
TAX MAP 7, LOT No. 14
35 BOSTON HARBOR ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

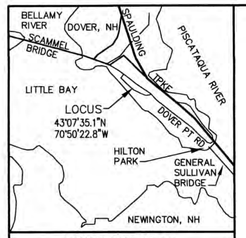
DRAWN BY: JJH	FILE: M:\2628\DWG\2628 EC
SCALE: 1" = 20'	DATE: JANUARY 24, 2025

20 10 0 10 20 40 60 80

STATE OF NEW HAMPSHIRE – No. 661 – KEVIN M. McENEANEY – LICENSED LAND SURVEYOR – SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING

24-2628 EC.dwg 22x34 1/24/2025 12:19:10

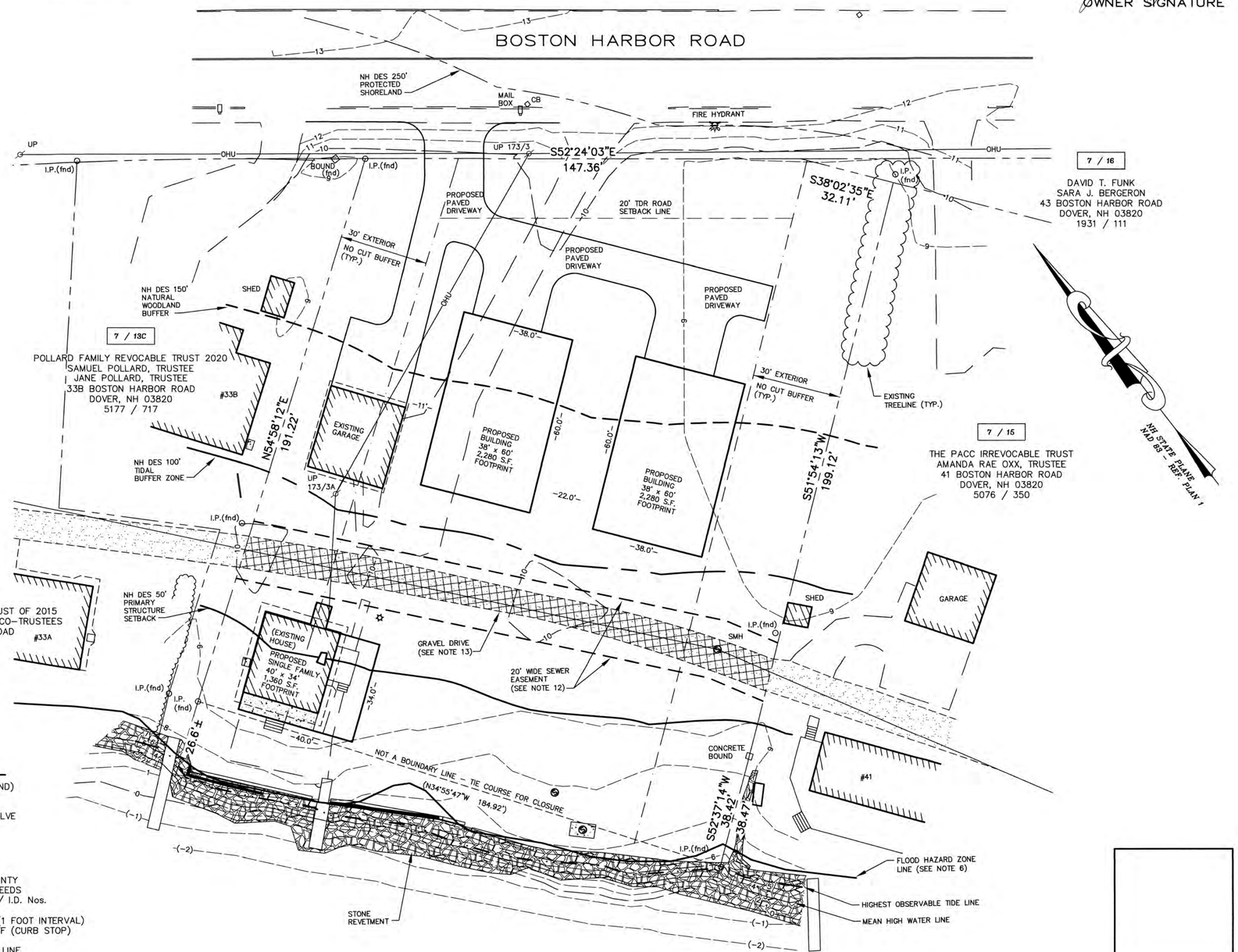


LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) EXISTING CONDITIONS SITE SURVEY FOR WAYNE MCCOOEY TRUST, 35 BOSTON HARBOR ROAD, DOVER, NH 03820. SCALE: 1" = 20'; DATED: APRIL 23, 2024; BY: HALEY WARD.

OWNER SIGNATURE



LEGEND

I.P.(fnd) – IRON PIPE (FOUND)
CB – CATCH BASIN
WV – WATER GATE VALVE
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP 410/5 – UTILITY POLE W/ I.D. Nos.
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WSO – WATER SHUT OFF (CURB STOP)
HYD. – FIRE HYDRANT
W – WATER SERVICE LINE
S – SEWER LINE
SMH – SEWER MANHOLE
OHU – OVERHEAD UTILITIES

NOTES:

1.) OWNER OF RECORD:
TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 5196, PAGE 358

2.) 7 / 14 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA = 42,846 S.F.± / 0.98 Ac. ±

4.) THE INTENT OF THIS PLAN IS TO DEPICT A PROPOSED TDR PLAN CONTAINING THREE (3) SINGLE FAMILY DWELLINGS.

5.) ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20)
DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE (20,000 x 3)	= 60,000 S.F.*
* 170-28.1. RIVERFRONT RESIDENTIAL OVERLAY DISTRICT. THE MINIMUM LOT SIZE SHALL BE THREE TIMES THE MINIMUM LOT SIZE	
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 125 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD TO LINE	= 20 FEET MINIMUM
	= 35 FEET MAXIMUM
SIDE SETBACK	= 20 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET
WETLAND BUFFER	= 50 FEET

TRANSFER OF DEVELOPMENT RIGHTS REGULATIONS:

ABUTTING A ROAD SETBACK	= 20 FEET
ABUTTING A LOT LINE SETBACK	= 10 FEET
STREET SIDES OF UNITS	= 20 FEET
ABUTTING STRUCTURES	= 20 FEET
NO CUT BUFFER FROM EXTERIOR LOT LINE	= 30 FEET

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION PER REFERENCE PLAN No. 1.

8.) ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO ANY WORK BEING PERFORMED. CALL DIGSAFE AT 1-888-344-7233.

9.) NO WETLANDS WERE OBSERVED ON THE SITE PER REFERENCE PLAN No. 1, IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

10.) TDR UNIT CALCULATIONS:

A)	42,846 S.F.-CONSERVATION (0 S.F.)	= 42,846 S.F.
B)	42,846 x 0.85	= 36,419 S.F.
C)	36,419 x 0.85	= 30,956 S.F.
D)	30,958 / 60,000	= 1 UNIT
E)	THE EXISTING SINGLE-FAMILY HOME WHICH HAS THE RIGHT TO COVERT TO A DUPLEX WILL REMAIN A SINGLE-FAMILY UNIT. TWO (2) SINGLE-FAMILY UNITS ARE TO BE PURCHASED UNDER THE TDR REGULATIONS TO FULFILL THE TOTAL DENSITY REQUEST OF THREE (3) UNITS. NO ADDITIONAL UNITS MAY BE CREATED WITHOUT REVIEW AND APPROVAL OF THE PLANNING DEPARTMENT AND/OR PLANNING BOARD WHICHEVER IS APPLICABLE.	

11.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY HALEY WARD WITH AN ERROR NOT GREATER THAN 1 IN 10,000. (REF. PLAN No. 1).

12.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.
THE PARCEL IS SUBJECT TO A SEWER EASEMENT TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. BOOK 1007, PAGE 166.

13.) THE PARCEL IS SUBJECT TO AND BENEFITS FROM A COMMON DRIVEWAY EASEMENT LOCATED OVER THE PARCEL.
S.C.R.D. VOL. 396, PAGE 136, NO WIDTH GIVEN.

14.) THE SOIL TYPE ON THE SITE IS:
Sb SAUGATUCK LOAMY SAND
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

15.) THIS SITE PLAN USES THE TRANSFER OF DEVELOPMENT RIGHTS ORDINANCE WHICH ALLOWS FOR RELIEF TO THE SETBACKS, LOT AREA, FRONTAGE, DENSITY AND INTENSITY OF DEVELOPMENT. THE BOARD GRANTED TDR RELIEF TO PURCHASE TWO (2) UNRESTRICTED UNITS FOR A TOTAL OF THREE (3) UNITS WITHIN THE EXISTING LOT OF RECORD. THE SINGLE-FAMILY HOME MAY NOT BE CONVERTED TO A DUPLEX WITHOUT FURTHER REVIEW AND APPROVAL BY THEW PLANNING BOARD.

16.) A CONDITIONAL USE PERMIT WILL BE REQUIRED FOR THE RECONSTRUCTION OF THE SINGLE FAMILY HOME WITHIN THE CONSERVATION DISTRICT.

17.) THE TWO PROPOSED UNITS WILL BE PURCHASED AS UNRESTRICTED UNITS THROUGH THE TDR ORDINANCE.

TDR PLAN
PREPARED FOR
TRUE NORTH DEVELOPMENT, LLC
TAX MAP 7, LOT No. 14
35 BOSTON HARBOR ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. TRAN 2024-0013

DRAWN BY: RJM	FILE: 2628\DWGS\24-2628 TDR
SCALE: 1" = 20'	DATE: SEPT. 27, 2024

20 10 0 10 20 40 60 80

NO.	DATE	DESCRIPTION	BY	CHK
2	01/23/24	ADD & REVISE NOTES FOR NOD	JJH	KMM
1	10/31/24	MOVE PROPOSED BUILDINGS 10.5' AWAY FROM WATER	RJM	KMM
CNE 24097		REVISIONS		
24-2628		TDR APPR	-	-
PROJECT NO		TYPE	FIELDBOOK & PAGES	

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

STATE OF NEW HAMPSHIRE – No. 661 – KEVIN M. McENEANEY – LICENSED LAND SURVEYOR – SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742-0911

SURVEYING – PLANNING – CONSULTING

24-2628 TDR.dwg 2628 TDR APPR 1/29/2025 14:46:09

DOVER SITE PLAN REVIEW NOTES:

1. THE PROPOSED SITE DESIGN INCLUDES THE DEMOLITION AND RECONSTRUCTION OF THE EXISTING SINGLE-FAMILY HOME, THE CONSTRUCTION OF TWO (2) NEW SINGLE-FAMILY HOMES, GRADING AND DRAINAGE IMPROVEMENTS, UTILITY IMPROVEMENTS, ALONG WITH THE RECONSTRUCTION OF THE PAVED SITE ACCESS. THE TOTAL PROPOSED PROJECT DISTURBANCE IS 29,963 SF, WITH 23,963 SF WITHIN THE NHDES 250'PROTECTED SHORELAND JURISDICTION, AND 6,000 SF WITHIN THE NHDES 100'TIDAL BUFFER ZONE JURISDICTION. THE PROPOSED WORK WITHIN THE 100'TIDAL BUFFER ZONE INCLUDES TEMPORARY IMPACTS ASSOCIATED WITH UNDERGROUND UTILITY INSTALLATION AND PERMANENT IMPACTS ASSOCIATED WITH THE GRADING AND DRAINAGE IMPACTS FROM THE INSTALLATION OF THE CULVERTS, IMPACTS ASSOCIATED WITH THE DEMOLITION AND RECONSTRUCTION OF THE SINGLE-FAMILY HOME, AND IMPACTS ASSOCIATED WITH THE REMOVAL OF AN EXISTING PAVED AREA. A NHDES SHORELAND PERMIT IS PENDING FOR THE WORK WITHIN THE NHDES 250'PROTECTED SHORELAND. THERE IS NO PROPOSED WORK WITHIN THE SPECIAL FLOOD HAZARD AREA.
2. OWNER OF RECORD:
   TRUE NORTH DEVELOPMENT, LLC
   99 COLUMBUS AVE
   DOVER, NH 03820
3. THE PARCEL IS SHOWN ON CITY OF DOVER ASSESSOR'S MAP 7, LOT 14.
4. THE SUBJECT PARCEL CONTAINS 0.98 ACRES OF LAND. THERE IS NO LAND AREA CURRENTLY IN CURRENT USE.
5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5196, PAGE NO. 358.
6. REFERENCE PLANS:
   EXISTING CONDITIONS PLAN PREPARED FOR TRUE NORTH DEVELOPMENT, TAX MAP 7, LOT 14, 35 BOSTON HARBOR ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, PREPARED BY: MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND, DATE:12/11/24, SCALE: 1"=20'
7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE AND SHOWN ON THE PLAN.
8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS:
   ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20) DISTRICT
   ZONING OVERLAY DISTRICTS: RIVER FRONT RESIDENTIAL AND CONSERVATION DISTRICT

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROVIDED
MINIMUM LOT SIZE	20,000 SF	42,846 SF
MAXIMUM LOT COVERAGE	30%	13.8%
MINIMUM LOT FRONTAGE	125 FT.	179.46 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	20 FT.	55.23 FT.
SIDE	20 FT.	11.43 FT.
REAR	30 FT.	N/A
ABUT-A-STREET	20 FT.	N/A
RIVERFRONT RESIDENTIAL OVERLAY DISTRICT:		
MINIMUM LOT SIZE	3X(20,000 SF)	42,846 SF
WATER FRONTAGE	100 FT	189.9 FT.

   CONSERVATION DISTRICT:
   100' SETBACK FROM REFERENCE LINE OF LITTLE BAY.
   SEE SITE PLAN FOR PARKING CALCULATION TABLE.
9. THE PROJECT DOES NOT REQUIRE A WAIVER REQUEST FROM THE BOARD.
10. THE PROJECT DOES NOT REQUIRE VARIANCES OR SPECIAL EXCEPTIONS TO BE GRANTED BY THE ZONING BOARD. SEE "PROJECT VARIANCE / PERMIT SUMMARY" SECTION IF APPLICABLE.
11. THE PROJECT WILL REQUIRE A CONDITIONAL USE PERMIT.
12. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM REFERENCE PLAN 1.
13. AS-BUILT PLANS OF THE PROJECT SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER CITY ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
14. A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.
15. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON NOVEMBER 21, 2024
16. ELEVATIONS ARE BASED ON U.S.G.S. NAVD 1988 DATUM BASED ON REFERENCE PLAN 1.
17. THERE ARE NO WETLANDS ON THE SUBJECT PARCEL.
18. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
19. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
20. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
21. CONTRACTOR SHALL FOLLOW THE CONSTRUCTION SEQUENCING IDENTIFIED WITHIN THE PLANNING BOARD APPROVED PLAN SET. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.
22. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND BE PROVIDED FOR CONSTRUCTION SEQUENCING INCLUDING TEMPORARY MEASURES.
23. 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.
24. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS, AS APPLICABLE.
25. ANY PERMANENT TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
26. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO COMMENCING EARTH DISTURBANCE.
27. 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.
28. 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.
29. HOURS OF SITE WORK MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM. NO SITE WORK SHALL BE DONE ON SATURDAY, SUNDAY, OR FEDERAL HOLIDAYS.
30. BUILDING ADDRESSES, INCLUDING APT AND UNIT NUMBERS (IF APPLICABLE), SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
31. THE PROPOSED USE FOR THE SITE (STRUCTURE) IS SINGLE FAMILY.
32. THE PROJECT REQUIRES A NHDES SHORELAND PERMIT (PENDING)
33. THE PROJECT REQUIRES A NHDES WETLANDS PERMIT (PENDING).
34. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO THE DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR OR THEIR DESIGNEE.
35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

DOVER NOTES CONTINUED:

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.
37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP
38. THE OWNER OF RECORD SHALL RECORD, AT THE REGISTRY OF DEEDS, DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
39. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED, IN ACCORDANCE WITH ALL APPLICABLE CODES, TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
40. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
42. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
43. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM, AS REQUIRED, BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES, AS APPLICABLE.
44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY THE CITY OF DOVER INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.
47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
48. DESIGN ENGINEER OF RECORD SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.
49. REFUSE REMOVAL SHALL BE BY CURB SIDE PICKUP ON BOSTON HARBOR ROAD.

DEMOLITION NOTES:

1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. STONES FROM REMOVED STONEWALLS SHALL REMAIN ON-SITE. STONES SHALL BE REPURPOSED ON-SITE AND SHALL NOT BE USED AS FILL.
9. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
10. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.

SITE NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
3. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
4. SEE DETAILS FOR SIGN LEGENDS.
5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNERS REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE-DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.
7. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
9. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
10. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
11. ALL EXTERIOR DOORS ARE MANUAL AND OPENED FROM THE INTERIOR BY PANIC HARDWARE. ALL EXTERIOR DOORS SHALL COMPLY WITH ADA AND ALL LOCAL BUILDING CODE REQUIREMENTS.
12. OWNER ACKNOWLEDGES, AGREES, AND COVENANTS THAT THE CITY OF DOVER IS NOT RESPONSIBLE OR LIABLE FOR ANY DAMAGE ARISING OUT OF OR IN RELATION TO USE OF THIS PROPERTY'S DRIVEWAY FOR EMERGENCY ACCESS.

GRADING NOTES:

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING.
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA, SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
10. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF THE FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
11. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
12. CONTRACTOR SHALL NOTIFY THE CITY OF DOVER AND THE DESIGN ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF PERMANENT STORMWATER BMP'S TO PROVIDE THE CITY AND THE ENGINEER THE OPPORTUNITY TO WITNESS THE CONSTRUCTION AND MATERIALS.
13. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

    *ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

PROJECT VARIANCE / PERMIT SUMMARY:

1. FEDERAL AND STATE PERMITS:
   NHDES SHORELAND PERMIT — APPROVED 2025-00234 APRIL 29, 2025
   NHDES WETLANDS PERMIT — APPROVED 2025-00783 JUNE 27, 2025
2. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.

   TDR SITE PLAN: APPROVED TRAN-2023-0013 NOVEMBER 12, 2024
   CONDITIONAL USE PERMIT: — PENDING

LEGEND

S.F.	SQUARE FEET	Ⓓ	EXISTING DRAINAGE MANHOLE
Ac.	ACRE	○	EXISTING CATCHBASIN
±	MORE OR LESS	5'R	PAVEMENT RADIUS
(TYP.)	TYPICAL	SBC	SLOPED BITUMINOUS CURB
S.C.R.D.	STRAFFORD REGISTRY OF DEEDS	x 74.00	EXISTING SPOT GRADE
NHHD	NEW HAMPSHIRE HIGHWAY DEPT.		
TBR	TO BE REMOVED	---94---	EXISTING GRADE
ELEV.	ELEVATION	——OHW——	OVERHEAD UTILITIES
INV.	INVERT	——E——	EXISTING ELECTRIC
R.O.W.	RIGHT-OF-WAY	——W——	EXISTING WATER LINE
	EXISTING UTILITY POLE	——S——	EXISTING SEWER LINE
	EXISTING SIGN	——D——	EXISTING DRAINAGE LINE
	EXISTING WATER SHUT-OFF	——UGT——	EXISTING UNDERGROUND TELEPHONE
	EXISTING WATER VALVE		
	EXISTING GAS VALVE	74	PROPOSED FINISH GRADE
	EXISTING HYDRANT	x 74.00	PROPOSED SPOT GRADE
	EXISTING LIGHT/SIGNAL POLE		PAVEMENT WITH CURB
Ⓢ	EXISTING SEWER MANHOLE		SILT BARRIER

——PS——	PROPOSED SEWER
——PW——	PROPOSED WATER
——PUGU——	PROPOSED UNDERGROUND UTILITIES
——PG——	PROPOSED GAS

UTILITY NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
6. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
7. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.
8. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED AND CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER SEWER DEPARTMENT STANDARDS.
9. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
10. ALL ELECTRICAL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
11. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
12. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
13. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
15. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY.
16. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
17. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
18. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
19. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
20. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER.
21. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
22. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
23. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
24. THE PROPOSED STRUCTURE SHALL COMPLY WITH CHAPTER 81, ARTICLE IV, SECTION 81-27 AND THE STATE BUILDING CODES OF THE CODE OF THE CITY OF DOVER.
25. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION.
26. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
27. SEWAGE LOADING (PER NHDES ENV-WQ 1008.03)
    PROPOSED 2 SINGLE FAMILY x 3 BEDROOMS x 150 GPD/BEDROOM = 900 GPD.
    EXISTING SINGLE FAMILY X 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD
    TOTAL = 1,350 GPD

UTILITY CONTACTS

WATER & SEWER: — CITY OF DOVER COMMUNITY SERVICES DEPARTMENT
CONTACT: KEN MAVROGEORGE, PE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)-516-6450
EMAIL: K.MAVROGEORGE@DOVER.NH.GOV

ELECTRIC: — EVERSOURCE
CONTACT: TREVOR EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-7515
EMAIL: TREVOR.EMMONS@EVERSOURCE.COM

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181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6-30-25
1	PER SHORELAND COMMENTS	SJH	3-31-25

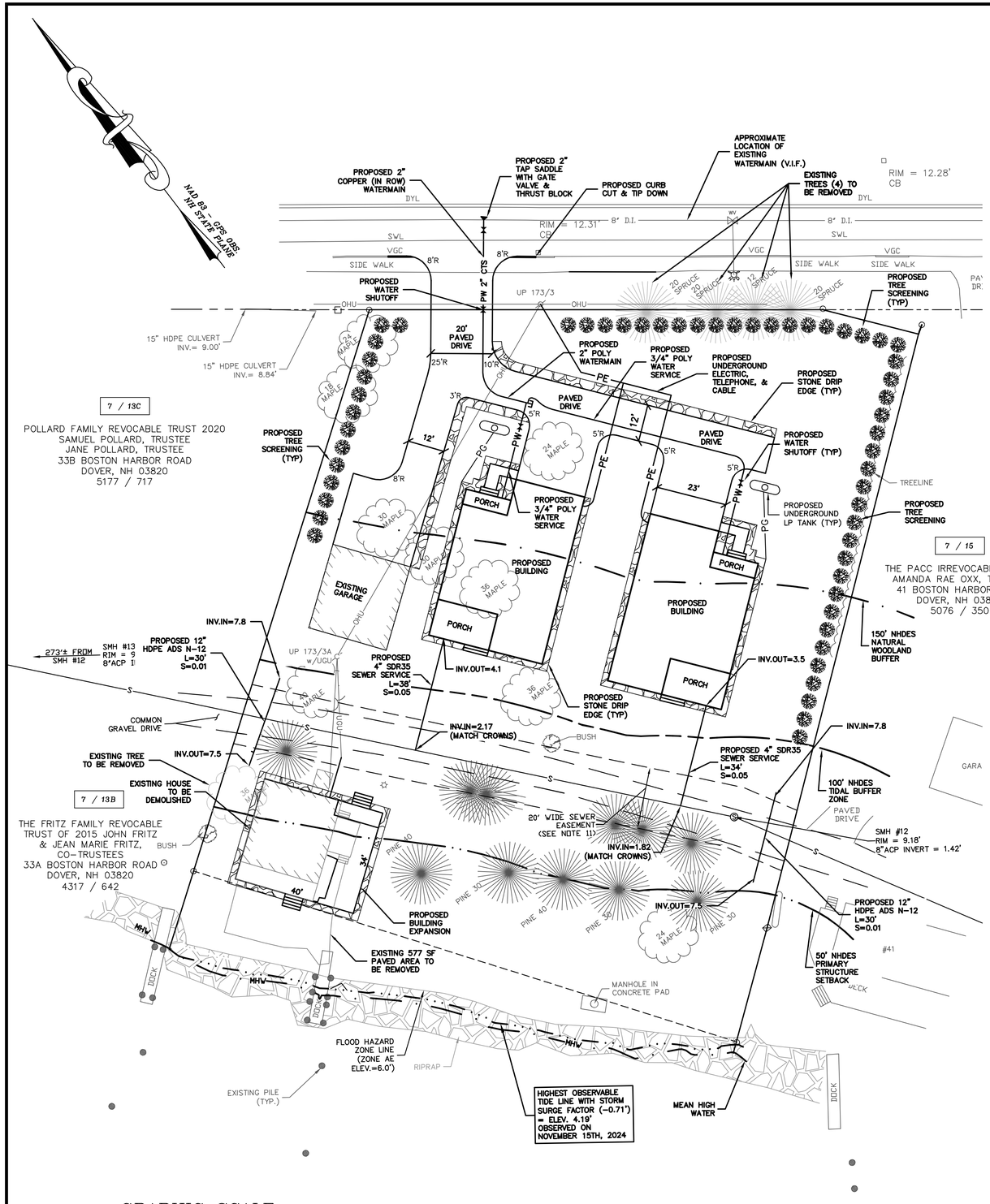
DATE: 1-30-25
SCALE: N/A
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

NOTE SHEET

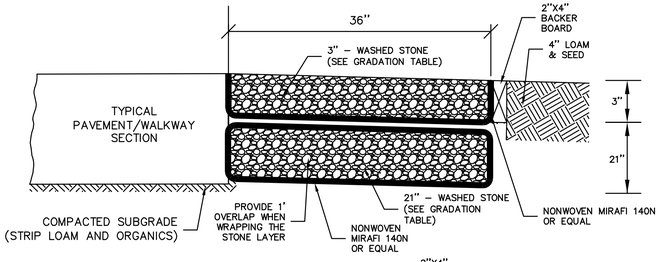
4

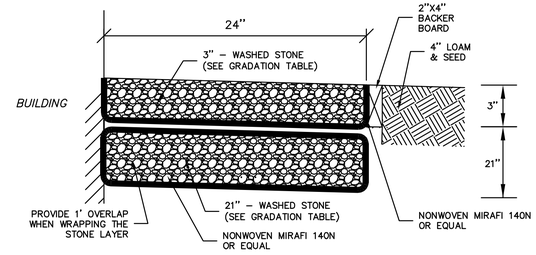


GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)





INSTALLATION NOTES:

1. THE FILTER FABRIC SHALL BE ENTIRELY WRAPPED AROUND THE 21" LAYER OF STONE.
2. A SECOND FILTER FABRIC SHALL BE LAID ON TOP AND ATTACHED TO THE BACKER BOARD TO CREATE A "U". THIS ALLOWS FOR EASY REMOVAL OF TOP 3" OF STONE AND 'U" SHAPED FABRIC, FOR MAINTENANCE.

MAINTENANCE NOTES:

IF PONDING OR SAND/DEBRIS BUILD UP IS NOTICED FOLLOW HE BELOW STEPS

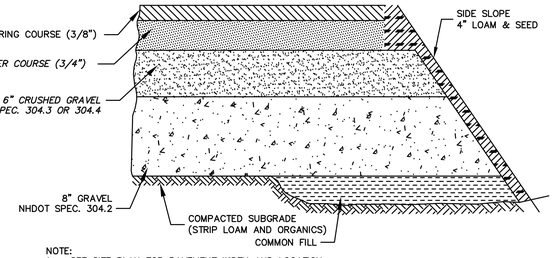
1. REMOVE TOP 3" OF STONE AND THE "U" SHAPED FILTER FABRIC.
2. CLEAN THE TOP OF THE FILTER FABRIC THAT IS WRAPPED AROUND 21" LAYER OF STONE.
3. INSPECT ANY RIPS OR TEARS IN FABRIC, IF ANY, LAY ADDITIONAL FILTER FABRIC OVER THE RIPS OR THE TEARS.
4. CLEAN AND INSPECT THE "U" SHAPED FILTER FABRIC THAT WAS REMOVED. IF THERE IS NO TEARS OR RIPS THE FILTER FABRIC MAY BE REUSED.
5. INSPECT AND REMOVE ANY SAND OR DEBRIS FROM THE TOP 3" LAYER OF STONE.
6. RE-INSTALL FILTER FABRIC AND 3" STONE LAYER

WASHED STONE GRADATION TABLE

SIEVE SIZE	*% FINER BY WEIGHT*
1"	*100*
3/4"	*90 – 100*
3/8"	*20 – 55*
# 4	*0*

STONE DRIP EDGE TYPICAL SECTION

NOT TO SCALE

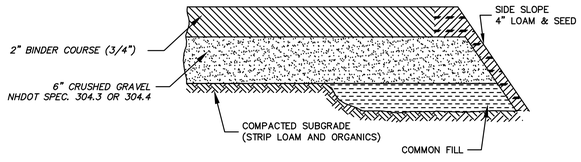


NOTE:

1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. GEOTEXTILE FABRIC MAYBE REQUIRED UNDER THE ROADWAY AND /OR THE PARKING AREAS AS REQUIRED BY THE ENGINEER BASED UPON SITE CONDITIONS.

TYPICAL PAVEMENT SECTION

NOT TO SCALE



TYPICAL WALKWAY SECTION

NOT TO SCALE

LEGEND:

S.F.	SQUARE FEET
PEOP	PROPOSED EDGE OF PAVEMENT
EOP	EDGE OF PAVEMENT
F.F.	FINISH FLOOR ELEVATION
TYP	TYPICAL
V.I.F.	VERIFIED IN FIELD

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

GNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

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DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

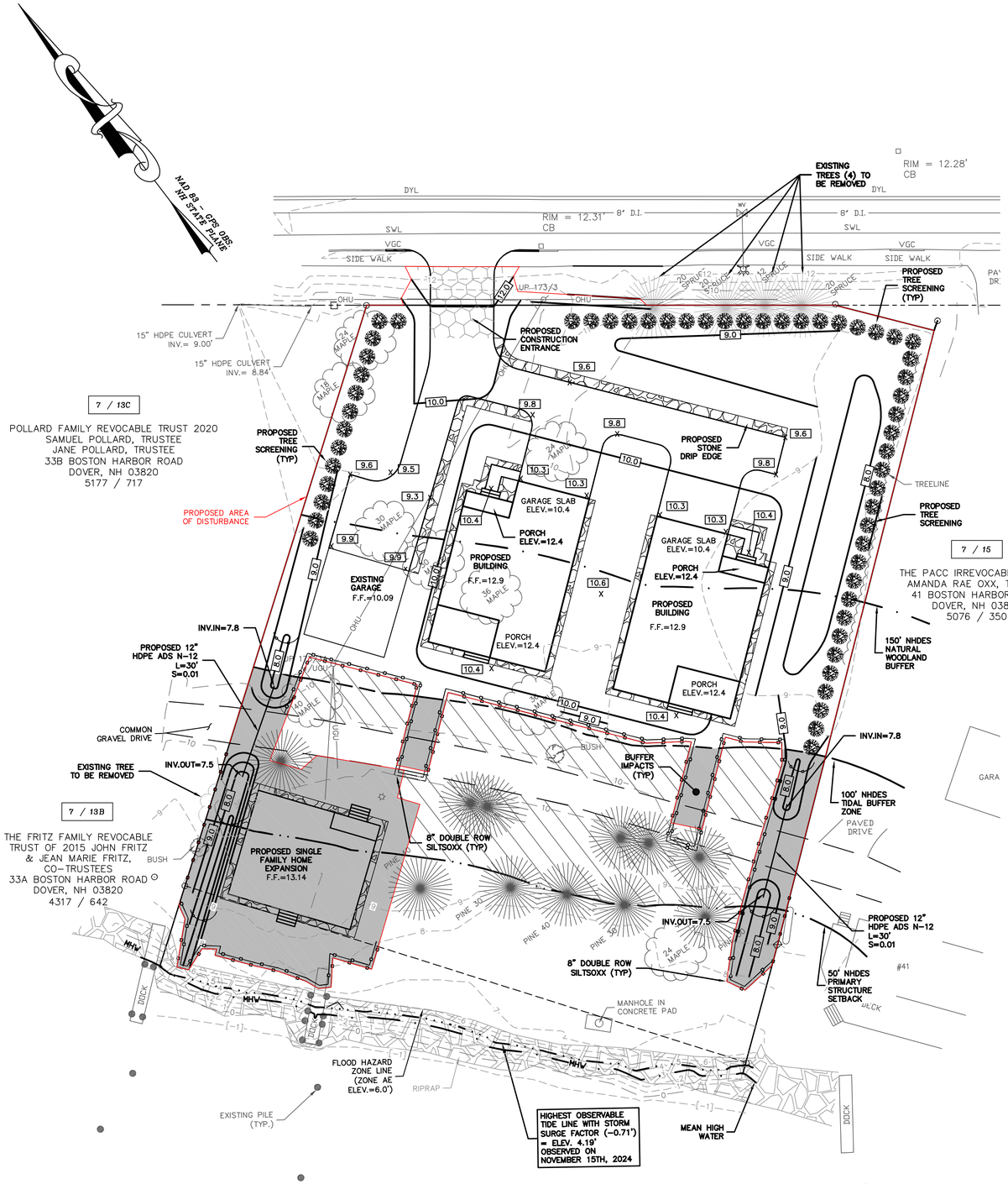
NHDES & CONDITIONAL USE PERMIT PLAN

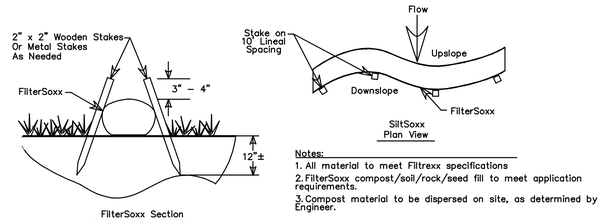
SITE & UTILITY PLAN

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH
DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

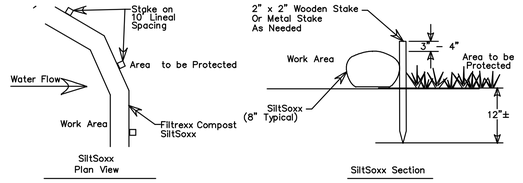
5





Notes:
1. All material to meet Filtrexx specifications
2. FilterSoxx compost/soil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site, as determined by Engineer.

FilterSoxx Staking Details



Notes:
1. All material to meet Filtrexx specifications
2. SiltSoxx compost/soil/rock/seed fill to meet application requirements.
3. SiltSoxx depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer. Compost material to be dispersed on site, as determined by Engineer.

SILTSOXX DETAILS

NOT TO SCALE

SHORELAND CALCULATIONS

	PRE	POST
PRIMARY STRUCTURES (HOUSE W/ ATTACHED DECKS)	1,804 S.F.	6,251 S.F.
PAVED DRIVEWAY, GRAVELED DRIVEWAY, WALKWAY, CONCRETE	4,942 S.F.	5,881 S.F.
TOTAL	6,746 S.F.	12,132 S.F.

TOTAL SHORELAND AREA 250'	= 42,357 S.F.
% PRE-CONSTRUCTION IMPERVIOUS 250'	= 6,746 S.F. (15.9%)
% POST-CONSTRUCTION IMPERVIOUS 250'	= 12,132 S.F. (28.6%)
TOTAL AREA 50' TO 150'	= 18,302 S.F.
AREA BETWEEN 50' TO 150' NATURAL WOODLAND BUFFER	= 12,286 S.F. (67.1%)
AREA BETWEEN 50' TO 150' NATURAL WOODLAND BUFFER TO REMAIN	= 4,999 S.F. (27.3%)
TOTAL AREA 0' TO 50'	= 9,377 S.F.
AREA BETWEEN 0' TO 50' PRE-UNALTERED	= 0 S.F. (0%)
AREA BETWEEN 0' TO 50' POST-UNALTERED	= 0 S.F. (0%)
TOTAL AREA 0' TO 100' (TIDAL BUFFER ZONE)	= 18,600 S.F.
AREA BETWEEN 0' TO 100' PRE-IMPERVIOUS	= 3,752 S.F. (20.2%)
AREA BETWEEN 0' TO 100' POST-IMPERVIOUS	= 3,413 S.F. (18.4%)
TOTAL PROPOSED DISTURBANCE	= 29,963 S.F.
TOTAL DISTURBANCE WITHIN THE 250' PROTECTED SHORELAND	= 23,963 S.F.
TEMPORARY UTILITY DISTURBANCE WITHIN THE 100' TIDAL BUFFER ZONE	= 806 S.F.
PERMANENT DISTURBANCE WITHIN THE 100' TIDAL BUFFER ZONE	= 5,194 SF

SELECTED SEA LEVEL RISE SCENARIO (SLR):

1. THE SELECTED SEA LEVEL RISE WAS DETERMINED UTILIZING THE PORTLAND TIDE STATION DATA OF 1.9 MM/YR (0.65 FT/100 YEARS). SEE CHART BELOW FOR SELECTED SLR SCENARIO AND APPLICABLE SERVICE LIFE.

STRUCTURE:	SERVICE LIFE	SLR SCENARIO	SLR ELEV.	STRUCTURE ELEV.
PROPOSED CULVERTS	25 YEARS	0.15' + ELEV. 6.0'	6.15'	INV.OUT=7.5'
PROPOSED BUILDINGS	50 YEARS	0.30' + ELEV. 6.0' + 1' FREEBOARD	7.3'	F.F.=12.9'
PROPOSED BUILDING EXPANSION	50 YEARS	0.30' + ELEV. 6.0' + 1' FREEBOARD'	7.3'	F.F.=13.14'

TIDE TABLE:

TIDE	ELEVATION
FEMA AE ELEV.	6.0'
HOTL	4.19'
MEAN HIGH WATER	2.95'
MEAN LOW WATER	-3.43
MEAN LOW LOW WATER	-3.68'

LEGEND:

S.F.	SQUARE FEET
PEOP	PROPOSED EDGE OF PAVEMENT
EOP	EDGE OF PAVEMENT
F.F.	FINISH FLOOR ELEVATION
TYP	TYPICAL
8	EXISTING 2' CONTOUR
94	PROPOSED GRADE
855.25 x	PROPOSED SPOT SHOTS
	EROSION CONTROL SOCK
	100' TIDAL BUFFER & 100' CONSERVATION DISTRICT IMPACT
	NATURAL WOODLAND BUFFER TO REMAIN

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NHDES & CONDITIONAL USE PERMIT PLAN

GRADING, DRAINAGE, & EROSION CONTROL PLAN

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH
DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

DESCRIPTION
THE PROPOSED SITE DESIGN INCLUDES THE CONSTRUCTION OF TWO (2) NEW SINGLE-FAMILY HOMES, THE RECONSTRUCTION AND EXPANSION OF THE EXISTING HOME, GRADING AND DRAINAGE IMPROVEMENTS, UTILITY IMPROVEMENTS, ALONG WITH THE RECONSTRUCTION OF THE PAVED SITE ACCESS. THE TOTAL PROPOSED PROJECT DISTURBANCE IS 29,963 SF, WITH 23,963 SF WITHIN THE NHDES 250' PROTECTED SHORELAND JURISDICTION, AND 6,000 SF WITHIN THE NHDES 100' TIDAL BUFFER ZONE JURISDICTION AND CITY OF DOVER CONSERVATION DISTRICT. .

PROJECT NAME AND LOCATION
3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NEW HAMPSHIRE 03820
LATITUDE N43° 07' 35"
LONGITUDE W70° 50' 24"

DISTURBED AREA
±26,719 S.F.

NOTES:
1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

SEQUENCE OF MAJOR ACTIVITIES
1. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
2. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
3. SELECTIVE DEMOLITION.
4. REGRADE SITE TO SUBGRADE.
5. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECCESSARY UNTIL AREAS ARE STABILIZED.
6. SWALES AND PONDS (AS APPLICABLE) SHALL BE CONSTRUCTED EARLY ON IN THE CONSTRUCTION SEQUENCE AND BEFORE ROUGH GRADING OF THE SITE AND ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
7. INSTALL DRAINAGE STRUCTURES AND CONTROLS.
8. INSTALL FOUNDATION FOOTINGS AND WALLS.
9. INSTALL UTILITIES.
10. PLACE GRAVELS AND FINE GRADE.
11. STABILIZE ROADWAYS AND PARKING AREAS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
14. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

DEFINITIONS
AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOMNG HAS OCCURRED.
1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE, AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. SILT BARRIER
1. INSTALLATION
   a. USE SILT BARRIER AS PERIMETER CONTROLS, PARTICULARLY AT THE LOWER OR DOWN SLOPE EDGE OF A DISTURBED AREA.
   b. LEAVE SPACE FOR MAINTENANCE BETWEEN TOE AND SLOPE OF SILT BARRIER.
   c. TRENCH IN THE SILT BARRIER ON THE UPHILL SIDE (6 INCHES DEEP BY 6 INCHES WIDE).
   d. INSTALL STAKES ON THE DOWNHILL SIDE OF THE SILT BARRIER.
   e. CURVE THE END OF THE SILT BARRIER UP-GRADIENT TO HELP IT CONTAIN RUNOFF.
2. SEQUENCE OF INSTALLATION
   a. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
3. MAINTENANCE
   a. SILT BARRIERS SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
   b. SILT BARRIERS HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT BARRIERS SHOULD BE REPLACED PERIODICALLY TO MAINTAIN EFFECTIVENESS.
   c. REMOVE SEDIMENT WHEN IT REACHES ONE-THIRD (1/3) THE HEIGHT OF THE SILT BARRIER.
   d. REPLACE THE SILT BARRIERS WHERE THEY ARE TORN, WORN, OR OTHERWISED DAMAGED AND MONITOR PERFORMANCE TO ENSURE EFFECTIVE PERFORMANCE.
   e. RETRENCH OR REPLACE ANY SILT BARRIER THAT IS NOT PROPERLY ANCHORED TO THE GROUND.
   f. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
   g. SILT BARRIERS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.

B. MULCHING
1. TIMING
   a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
   c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THIS SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
   a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FEET.
   b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWNG SEASON) IT SHALL BE AT A RATE OF 150-200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
   a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
   b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECCESSARY.
   c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
   d. EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING
1. SEEDBED PREPARATION
   a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
   b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
      i) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
      ii) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
   a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
   c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
   d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
   a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING
1. BEDDING - STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERRING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
   a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
   b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITORGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
   c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
      LOW PHOSPHATE (N-P205-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
   RATE:

TYPE	LBS. PER ACRE	LBS. PER 1,000 S.F.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
   a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
   b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
   c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
   a. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
   b. SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
   c. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABALIZATION OF EXPOSED SOILS.
   d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
   e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION
1. SPECIFICATIONS
   a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
   b. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
   a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND-DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
   b. PROTECT ALL INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
   c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMPS.
   d. DESIGN YOUR INLET PROTECTION TO HANDLE THE VOLUME OF WATER FROM THE AREA BEING DRAINED. ENSURE THAT THE DESIGN IS SIZED APPROPRIATELY.
3. MAINTENANCE
   a. INSPECT INLETS BARRIERS FREQUENTLY, BEFORE AND AFTER EACH RAINFALL EVENT AND REPAIR WHEN NECESSARY.
   b. SEDIMENT SHOULD BE REMOVED AND THE STORM DRAIN SEDIMENT BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE BARRIER.
   c. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   d. SWEEP STREETS, SIDEWALKS, AND OTHER PAVED AREAS REGULARLY.
   e. ALL CATCH BASINS AND STORM DRAIN INLETS MUST BE CLEANED AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED

TIMING OF CONTROLS/MEASURES
AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

WASTE DISPOSAL
a. WASTE MATERIALS
   ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
   ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
   ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENACE OF STORMWATER MANAGEMENT FACILITIES
THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PROPERTY OWNER IS RESPONSIBLE AFTER CONSTRUCTION IS COMPLETE.

CATCH BASINS & STORMWATER TREATMENT STRUCTURES
1. CATCH BASINS & STORMWATER TREATMENT STRUCTURES SHOULD BE INSPECTED ON A MONTHLY BASIS AND/OR AFTER A MAJOR RAINFALL EVENT TO ASSURE THAT DEBRIS OR SEDIMENTS DO NOT REDUCE THE EFFECTIVENESS OF THE SYSTEM.

SPILL PREVENTION
A. MATERIAL MANAGEMENT PRACTICES
THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING
1. THE CONSTRUCTION PROJECT:
   a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
   b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
   d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
   e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
   f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
   a. THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
   b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
   c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
   d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
1. PETROLEUM PRODUCTS:
   a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENACE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. FERTILIZERS:
   a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
3. PAINTS:
   a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
4. CONCRETE TRUCKS:
   a. CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.

C. SPILL CONTROL PRACTICES
IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   c. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   d. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OF LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
   f. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
   g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

THE PROJECT PROPONENT IS REQUIRED TO MANAGE CONSTRUCTION TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO CONTROLLING INVASIVE SPECIES AND CONTROLLING FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002.

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

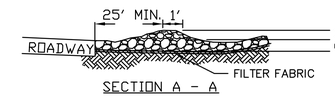
THE RULE, AGR 3800, STATES: NO PERSON SHALL COLLECT, TRANSPORT, IMPORT, EXPORT, MOVE, BUY SELL, DISTRIBUTE, PROPAGATE OR TRANSPLANT ANY LIVING AND VIABLE PORTION OF ANY PLANT SPECIES, WHICH INCLUDED ALL OF THEIR CULTIVARS AND VARIETIES, LISTED IN TABLE 3800.1, NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST'. A COMPLETE COPY OF THE RULES CAN BE ACCESSED ON THE INTERNET AT HTTP://AGRICULTURE.NH.GOV/TOPICS/PLANTS_INSECTS.HTM.

ENV-A 1002 FUGITIVE DUST: PRECAUTIONS TO PREVENT, ABATE, AND CONTROL FUGITIVE DUST.

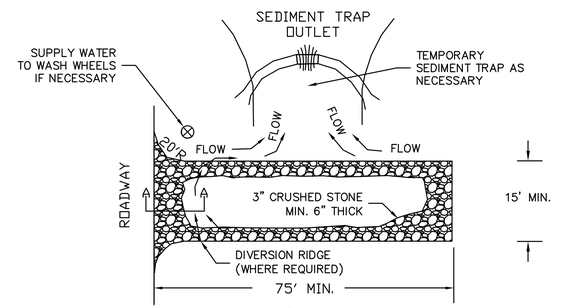
a. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE EMITS FUGITIVE DUST, OTHER THAT THOSE LISTED IN ENV-A 1002.02 (b), SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST.
b. PRECAUTIONS REQUIRED BY (a) ABOVE, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   i) THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
   ii) THE APPLICATION OF ASPHALT, WATER, OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIAL STOCKPILES;
   iii) THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
   iv) THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS; AND
   v) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

WINTER CONSTRUCTION NOTES
1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT.
2. ALL DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

DIVERSION RIDGE REQUIRED
WHERE GRADE EXCEEDS 2%



SECTION A - A



PLAN

A. GENERAL NOTES:

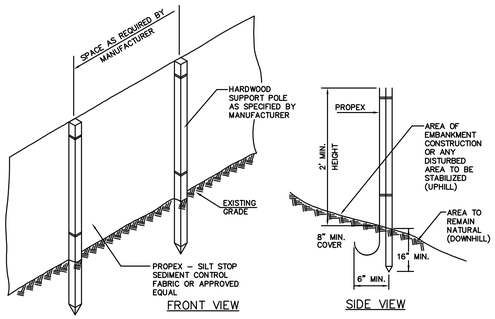
1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORM WATER RUNOFF FROM ROADS
2. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE IS REQUIRED TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
3. LOCATE THE CONSTRUCTION ENTRANCES AND EXITS, A MINIMUM OF 100 FEET FROM INTERSECTIONS, TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES THAT HAVE STEEP GRADES AND ENTRANCES AT CURVES IN ROADS.
4. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL 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 AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.

B. SPECIFICATIONS (TEMPORARY CONSTRUCTION ENTRANCE/EXITS SHOULD MEET THE FOLLOWING REQUIREMENTS).

5. STONE SIZE MINIMUM: USE SHOULD BE 3" CRUSHED STONE.
6. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET.
7. THE MINIMUM WIDTH OF THE PAD SHOULD BE 15 FEET OR THE WIDTH OF THE ENTRANCE, WHICHEVER IS GREATER
8. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
9. THE PAD SHOULD BE AT LEAST 6" THICK.
10. A GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
11. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
12. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

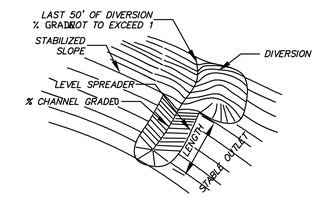
C. MAINTENANCE REQUIREMENTS (THE ENTRANCE/EXIT SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT).

13. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.
14. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT



SILT FENCE DETAIL

NOT TO SCALE



LEVEL SPREADER DETAIL

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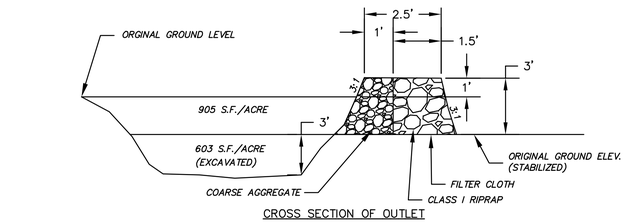
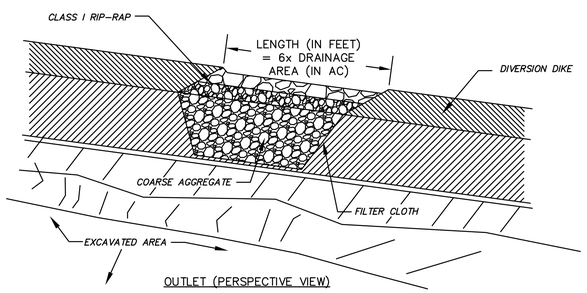




NOTES:
1. COARSE AGGREGATE SHALL MEET NHDOT 304.5 SPECIFICATIONS AND SHALL NOT CONTAIN MORE THAN 5% FINES PASSING THE #200 SIEVE.
2. FILTER CLOTH SHALL BE MIRAFI 700X OR APPROVED EQUAL.
3. CLASS I RIPRAP SHALL MEET NHDOT 583 SS SPECIFICATIONS.
4. THE MAXIMUM CONTRIBUTING AREA TO THE TRAP SHALL BE LESS THAN 5 AC.
5. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED.
6. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

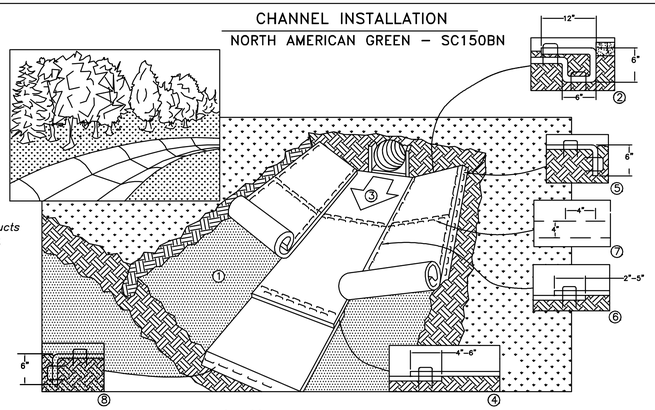
TEMPORARY SEDIMENT TRAP

NOT TO SCALE

CHANNEL INSTALLATION

NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

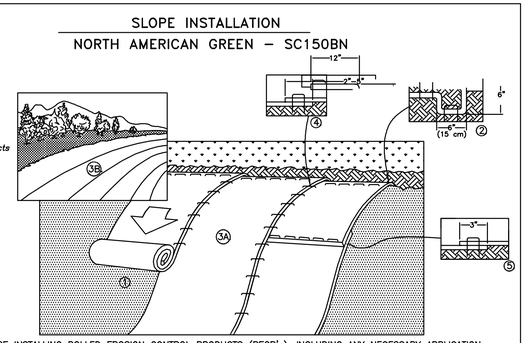
NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

SLOPE INSTALLATION

NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™ , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

NOTE: THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6-30-25
1	PER SHORELAND COMMENTS	SJH	3-31-25

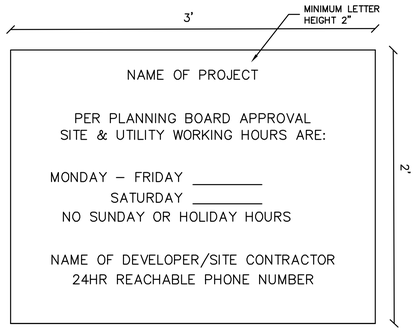
PROJECT NO: 24097
FILE: SITE
DESIGN BY: JRG
DRAWN BY: JRG
SCALE: N/A
DATE: 1-30-25

EROSION CONTROL NOTES

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

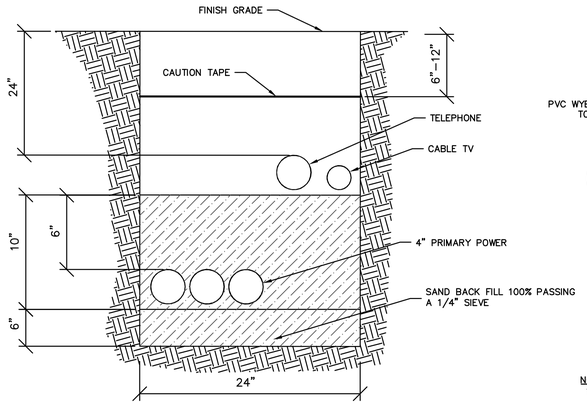
8



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

CITY OF DOVER D–2
CONSTRUCTION SIGN

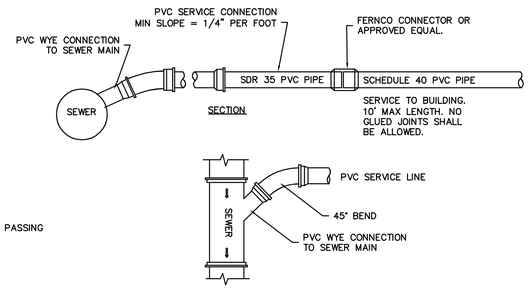
NOT TO SCALE



1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

UTILITY TRENCH

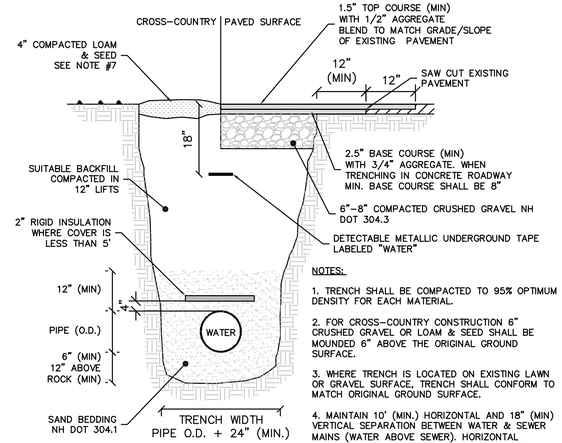
NOT TO SCALE



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

CITY OF DOVER D–17
SEWER SERVICE DETAIL

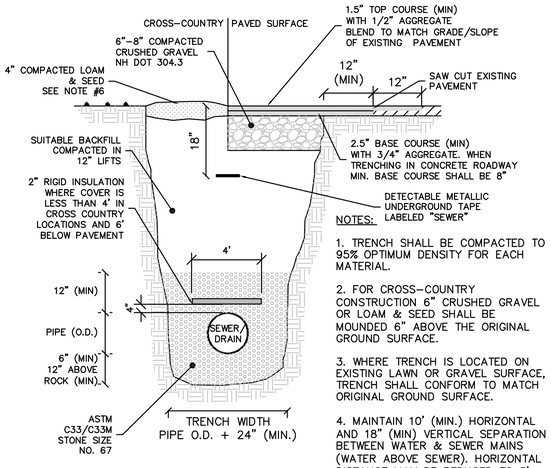
NOT TO SCALE



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. 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.

CITY OF DOVER D–4
WATER TRENCH DETAIL

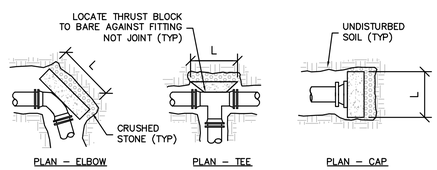
NOT TO SCALE



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.

CITY OF DOVER D–3
SEWER TRENCH DETAIL

NOT TO SCALE



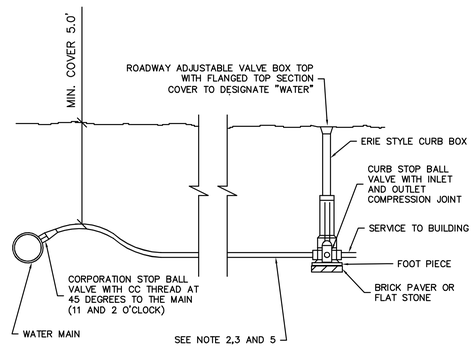
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22–1/2 Degree Bends	*	*	*	*	4.46	7.92
11–1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	System Pressure: 125 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE–CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

CITY OF DOVER D–15
THRUST BLOCK DETAIL

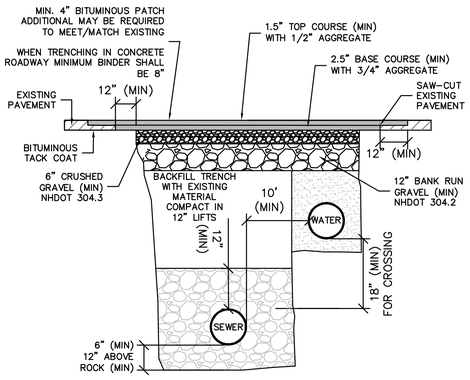
NOT TO SCALE



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. 3/4"– COPPER, CTS
   1"– COPPER, CTS
   2"– CTS, HDPE, IPS

CITY OF DOVER D–13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6–30–25
1	PER SHORELAND COMMENTS	SJH	3–31–25

DATE: 1–30–25
SCALE: N/A
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

DETAIL SHEET

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH
DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0008

Application Type:	Conditional Use Permit
Applicant(s):	Eric Latour
Owner(s):	Eric Latour
Location:	28 Cornerstone Dr. (Assessor's Map B, Lot 18-43)
Meeting Date:	July 22, 2025

INTENT: Proposal is for a Conditional Use Permit (CUP) to construct a garage with mudroom that will result in ±2,435 square feet of impacts to the wetland buffers.

AGENDA ITEM #: 4-H

FILE: COND-2025-0008

APPLICANT/OWNER: Eric Latour

LOTS/UNITS PROPOSED: N/A

ACREAGE: 0.31± ac.

ZONING DISTRICT: R-40, Wetland Protection District

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential (no change)

SURROUNDING LAND USE: Residential

WAIVERS REQUESTED: N/A

ZBA ACTION: N/A

PERMITS REQUIRED: City of Dover CUP

CONSERVATION COMMISSION: Endorsed on 7/14/25.

ATTACHMENTS: Site Plan

Summary of Request and Background:
The applicant is proposing to construct an attached garage and mudroom on the south side of the single-family home at 28 Cornerstone Dr. (Assessor's Map B, Lot 18-43).

There are two identified wetlands onsite and the project is proposed within an overlapping buffer area. Construction activities will create a total of ±2,435 square feet of impacts to the wetland buffers.

The Conservation Commission reviewed and endorsed the application at their July 14, 2025 special meeting. *(minutes attached)*

Consistency with Land Use Regulations – CUP 170-28.F
The Wetlands Protection District ordinance §170-28.F provides for Conditional Use Permits to allow impacts to the Wetlands Protection District if standards related to demonstration that no practicable alternative is available, impact avoidance was considered, impacts were minimized, mitigation has been sought, and approval of the wetlands impact from NHDES Wetlands Bureau has been granted.

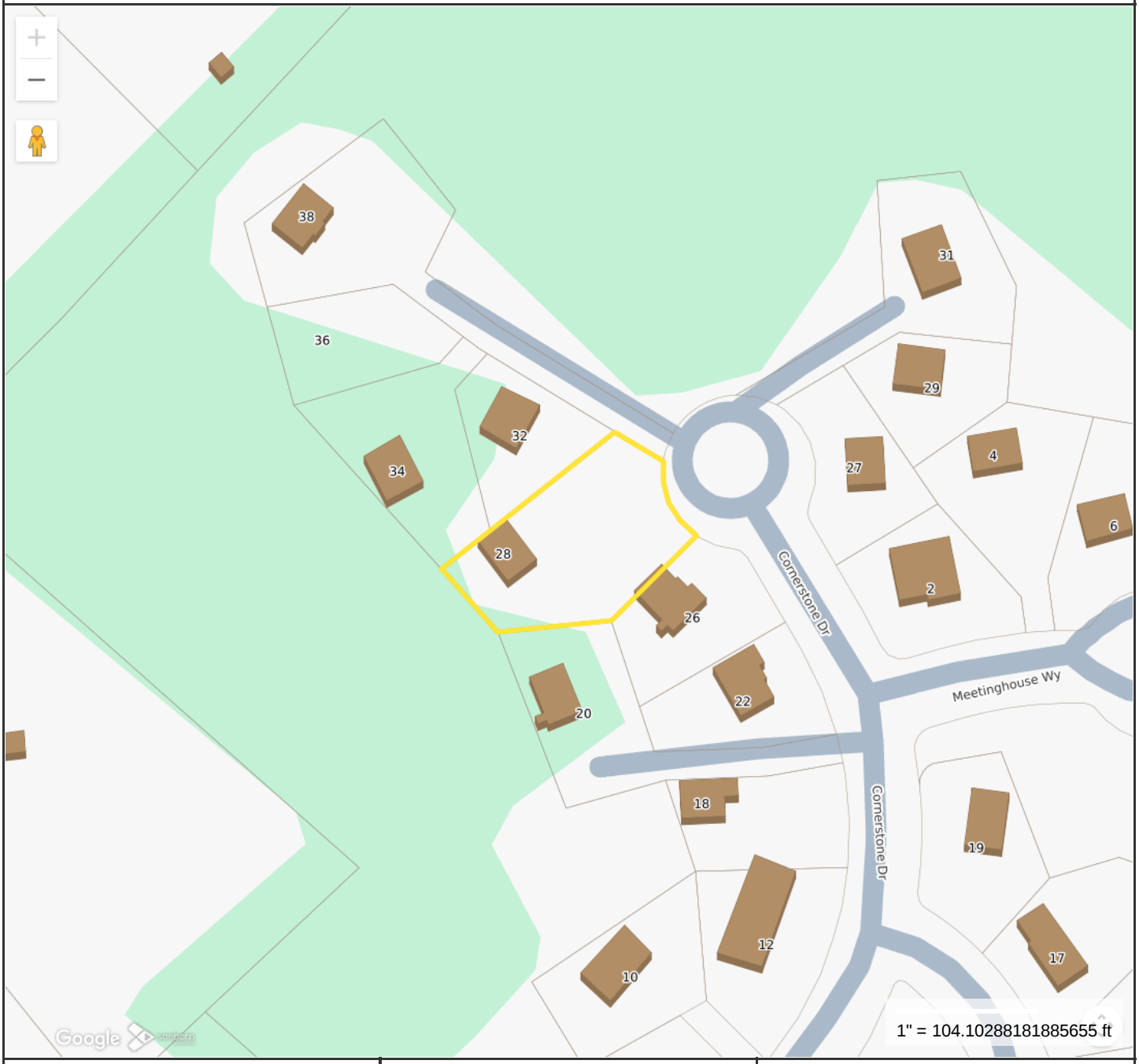
Planning Staff feels that the applicant considered and met all of the criteria as specified in §170-28.F per their narrative. The project avoids direct wetland impacts. There are two overlapping buffer areas with impacts totaling approximately 2,435 square feet. The applicant has sufficiently explained that the proposed placement for the garage and mudroom is in order to comply with zoning setbacks and to avoid direct wetland impacts. The applicant has also proposed reseeding disturbed areas following construction. As there are no wetland impacts, mitigation and NHDES wetlands permitting are not required. However, the proposal was reviewed and endorsed by the Conservation Commission on July 14, 2025.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the conditional use permit with the following subsequent conditions of approval:

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

1. Submit a final site plan to the Planning Department that includes:
   1.1. Building setbacks
   1.2. LLS and CWS stamp and signature.
   1.3. Owner's signature.

COND-2025-0008 28 Cornerstone Drive



Property Information

Location	28 CORNERSTONE DR
Owner	LATOUR ERIC J & MEGAN A TRUSTEES
Land Use	101R
Zoning Code	R-40
Property Id	B0018-043000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 10/30/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2025-0008
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	04/14/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Submitted - Online	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: We would like to add a 24' x 24' garage on to the side of the house (attached). We have wetlands near the location in the front of the house. As part of this project we plan to redirect all water from the garage and driveway to the wetlands in the front of the house.

Parcel: B0018-043000 Main	**Address:** 28 Cornerstone Dr Main Dover, NH	**Zone:** R-40(Residential - Rural)

Owner	Plan Preparer	Applicant	Surveyor
Eric Latour	Eric Latour	Eric Latour	Ashley Rowe
28 Corner Stone Dr	28 Corner Stone Dr	28 Corner Stone Dr	PO Box 249
Dover, NH 03820	Dover, NH 03820	Dover, NH 03820	Rochester, NH 03866
Home: (603) 781-5731	Home: (603) 781-5731	Home: (603) 781-5731	Business: (603) 335-3948
Business: (603) 781-5731	Business: (603) 781-5731	Business: (603) 781-5731	Mobile: (603) 842-2284
Mobile: (603) 781-5731	Mobile: (603) 781-5731	Mobile: (603) 781-5731	

Permit Custom Fields

Select Permit Type	Wetland Protection District	General Purpose	Alteration / Addition	Project Zone	Residential
New Change in Impervious/Paved Area (sq ft)	0	Work	We would like to put in an attached garage on the side of the house and improve drainage along the side of the house (where the garage is going) and also along the driveway so that the water will drain into the wetlands in the front of the house.	permitstatefed	None

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Eric_Latour_4/14/2025.jpg	04/14/2025 17:43	Latour, Eric		Uploaded via CSS
Permit Snapshot Report.pdf	04/14/2025 17:43	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025011988	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-2025011988	$200.00	$200.00
	Grand Total for Permit	**$200.00**	**$200.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			
Confirm application complete v.1	Generic Action		
Conditional Use Review v.1	Receive Submittal		
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		

Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

COND-2025-0008 **28 CORNERSTONE DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
B0018-000000	COUNTY FARM CROSS RD	CORNERSTONE CROSSING HOA		PO BOX 1872	DOVER	NH	03821
B0018-030000	2 MEETINGHOUSE WY	BOGLE WOREEN-ANN &	VERNON JASON	2 MEETINGHOUSE WY	DOVER	NH	03820-6010
B0018-031000	4 MEETINGHOUSE WY	DESHANE KEITH T &	DESHANE DINAH M	4 MEETINGHOUSE WY	DOVER	NH	03820-6010
B0018-032000	27 CORNERSTONE DR	GOODWIN LEWIS H IV &	YOUNG JUSTIN	27 CORNERSTONE DR	DOVER	NH	03820
B0018-033000	29 CORNERSTONE DR	BURKINSHAW JOHN JR	BURKINSHAW MADOKA	29 CORNERSTONE DR	DOVER	NH	03820
B0018-034000	31 CORNERSTONE DR	PONCE GUSTAVO &	PONCE REGINA	31 CORNERSTONE DR	DOVER	NH	03820
B0018-039000	38 CORNERSTONE DR	KINSMAN ERIC M &	KINSMAN DEANNA B	38 CORNERSTONE DR	DOVER	NH	03820-6012
B0018-040000	36 CORNERSTONE DR	MCCAULEY IRYNA &	MCCAULEY JAMES P	36 CORNERSTONE DR	DOVER	NH	03820
B0018-041000	34 CORNERSTONE DR	O BRIEN LIAM		34 CORNERSTONE DR	DOVER	NH	03820
B0018-042000	32 CORNERSTONE DR	PETTINGILL SCOTT		32 CORNERSTONE DR	DOVER	NH	03820
B0018-044000	26 CORNERSTONE DR	LAPOINT JASON		26 CORNERSTONE DR	DOVER	NH	03820
B0018-045000	20 CORNERSTONE DR	GORHAM ROBIN E	GORHAM VANCE J	20 CORNERSTONE DR	DOVER	NH	03820-6012
B0018-046000	22 CORNERSTONE DR	HASKELL CURTIS M &	WESTON CHRISTINE A	PO BOX 871	NEW CASTLE	NH	03854-0871
B0018-047000	18 CORNERSTONE DR	LEBLANC KENNETH P &	LEBLANC JEANNE J	18 CORNERSTONE DR	DOVER	NH	03820
B0018-048000	12 CORNERSTONE DR	SILVA TONYA L		12 CORNERSTONE DR	DOVER	NH	03820
B0018-049000	10 CORNERSTONE DR	GUNDERSEN KURT W		10 CORNERSTONE DR	DOVER	NH	03820
B0018-B00000	190 COUNTY FARM CROSS RD	FLEURY TRAVIS	FUGATT CARYN	190 COUNTY FARM CROSS RD	DOVER	NH	03820-6006
B0018-043000	28 CORNERSTONE DR	LATOUR ERIC J & MEGAN A TRUSTEES	LATOUR ERIC AND MEGAN REVOCABLE LIVING T	28 CORNERSTONE DR	DOVER	NH	03820
		NORWAY PLAINS ASSOCIATES, INC	ASHLEY ROWE	PO BOX 249	ROCHESTER	NH	03866

Conditional Use Permit Request from Eric and Megan Latour for 28 Corner Stone Drive, Dover, NH.

Project Overview This project proposes the construction of a 24' x 24' attached garage on the left (south) side of our residence at 28 Cornerstone Drive, Dover, NH. The design and construction methods have been selected to minimize environmental impact while complying with the City of Dover's wetland regulations. The additional garage, to be constructed by J.R. Heald Builders LLC of Dover, NH, will provide enhanced functionality for our home while respecting the natural features of the property.

Site Characteristics and Wetland Delineation The property contains two identified wetlands:

1. **Wetland A:** Located approximately 10 feet from the front (east side) of the house.
2. **Wetland B:** Identified in 2025 as a low-spot wetland due to water accumulation from a neighboring sump pump at 20 Corner Stone Drive.

Photographs of both areas and the sump pump can be seen in the attached documentation. A thorough wetland delineation was performed in 2025 by Marc Jacobs, CWS, on behalf of Norway Plains Associates, Inc., ensuring that the boundaries and associated environmental features are accurately mapped. This delineation forms the baseline for understanding both temporary and permanent impacts arising from the proposed construction.

Impact Assessment and Work Plan The proposed garage is to be built on the left (south) side of the existing house, with its planned structure positioned approximately 18 feet from Wetland A. During construction, drainage modifications will be required to reroute water from Wetland B into Wetland A. As a result, there will be a temporary impact to Wetland B and its buffer zone. An updated site plan (included) has been prepared that clearly illustrates:

- The location of the proposed garage (indicated by a red square).
- The drainage route (shown as a blue arrow) that redirects water away from Wetland B.
- The area of disturbance within Wetland B and its buffer zone due to these modifications.

The land engineer for J.R. Heald Builders LLC will design the grading and drainage modifications to redirect water from Wetland B under the driveway to Wetland A in a way that maximizes the benefits to Wetland A while providing a long-term sustainable water management solution for our property. We estimate that the disturbance affecting Wetland B and the buffer zone covers approximately 570 square feet. The updated site plan, which is submitted with this narrative, provides detailed measurements and a clear diagram of the affected areas.

Mitigation Measures Recognizing the importance of protecting wetland integrity, the following measures have been integrated into the project design and construction process:

- **Minimized Permanent Impact:** The garage is positioned at a safe distance from Wetland A (approximately 18 feet), eliminating any long-term disturbance to that area.
- **Temporary Impact Management:** Construction activities, particularly those related to drainage redirection, will be closely managed. Sediment control, erosion prevention, and temporary stabilization measures will be implemented to ensure that any disruptions to the wetlands and their buffers are strictly temporary.

- **Restoration:** Following the completion of construction, affected areas within the wetland buffer zones will be restored to mitigate any temporary impact.

Environmental and Regulatory Compliance This narrative, in conjunction with the comprehensive site plan, demonstrates our commitment to adhering to local wetland protection standards and guidelines. All aspects of the proposed work—including the nature and extent of disturbance in both permanent and temporary scenarios—are clearly documented. We are coordinating with Norway Plains Associates, Inc. and J.R. Heald Builders LLC to ensure that the wetland delineation methods used in 2025 are fully integrated into the project planning process. We are submitting this application in anticipation of review by the Conservation Commission and the Planning Board, with the understanding that their approvals will enable us to proceed to the building permit stage.

Conclusion In summary, our proposed attached garage project has been designed with a strong emphasis on protecting, preserving and enhancing the adjacent wetlands. The integration of meticulous planning, a clear demonstration of minimized and temporary impact, and robust mitigation strategies reflects our commitment to environmental stewardship. We respectfully request that the Conditional Use Permit be granted, enabling us to move forward with construction while safeguarding the natural features of our property.

Thank you for your consideration.

Best,

Eric and Megan Latour

Attachments:

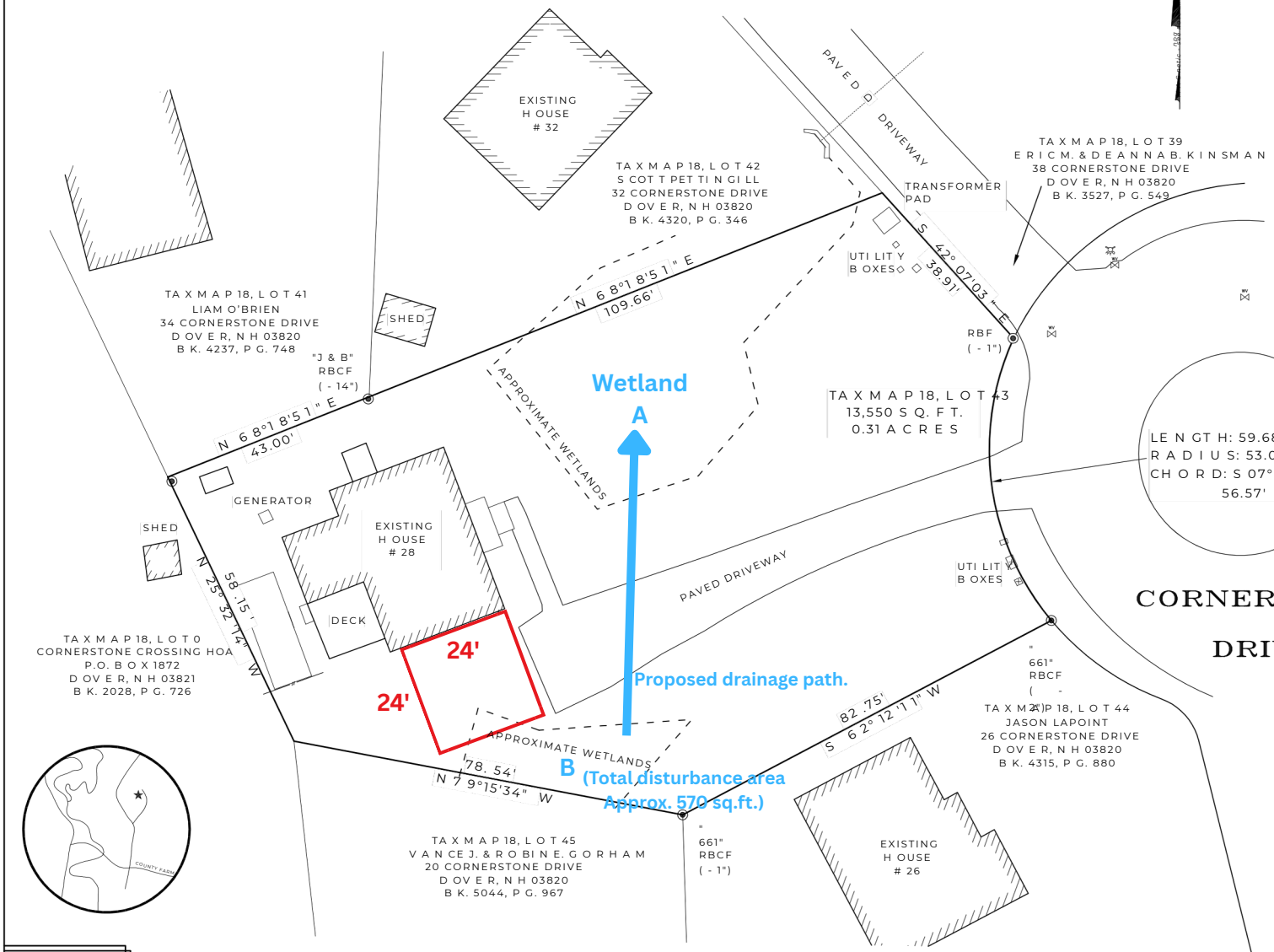
Site images of 28 Corner Stone Drive
Site Plan for 28 Corner Stone Drive

Front of house showing Wetland A.

Side of house showing location where garage will be built.

Side of house showing approximate location of Wetland B.

Outlet of sump pump originating from 20 Corner Stone Drive that is creating Wetland B.



reserved registry of deeds

notes:

1. the purpose of this sketch is to depict the found monumentation of TAX MAP 18, LOT 43.
2. total parcel area: map 18, lot 43 0.31 acres.
3. parcel is zoned: RURAL RESIDENTIAL (R-40).
4. minimum lot requirements: lot size = 40,000 sq ft, frontage = 150 ft.
5. building setbacks:
   PRINCIPAL BUILDING: front yard = 40 ft, side yard = 25 ft, rear yard = 30 ft.
   OUTBUILDING/ACCESSORY USE: FRONT YARD = 40 FT, SIDE YARD = 10 FT, REAR Y
   (Ultimate certification and verification of the zone designation and applicable location of building setback requirements are the sole responsibility of the zoning officer in the subject municipality.)
6. the surveyed parcel IS serviced by the municipal water and sewer system.
7. THE SURVEYED PARCEL IS NOT located within the 100 year flood zone as shown on the flood insurance rate map dated 9/30/2015 community panel # 33017C0302E.
8. HORIZONTAL DATUM: nh state plane, NAD83(2011).
9. FIELD SURVEY PERFORMED ON THE FOLLOWING DATE: MONTH DAY, YEAR - MONTH DAY, YEAR
10. Abutting property information was taken from DOVER tax records. abutting property lines were taken from DOVER tax maps and are for informational purposes only.
11. CORNERSTONE DRIVE is a PRIVATE road, per nh dot.

Reference Plans:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TRUST." dated: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC. recorded: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

tax map 18, lot 43
owner of record:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, n.h.
book 4072, page 911

preliminary plan
28 CORNERSTONE DRIVE
DOVER
STRAFFORD county
new hampshire
for:
ERIC LATOUR

1" = 10' march 2025
graphic scale

10 0 5 10 20

revisions:

FILE NO. 469
PLAN NO.
DWG. NO. 25031

PRINTED ON: mONTHdAY, yEAR

31 MOONEY STREET, ALTON, NH 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948

Conditional Use Permit Request from Eric and Megan Latour for 28 Corner Stone Drive, Dover, NH.

Project Overview

This project proposes the construction of a 24' x 24' attached garage and a 8' x 8' mudroom on the left (south) side of our residence at 28 Cornerstone Drive, Dover, NH. The garage will enhance the functionality and value of our home by providing secure, weather-protected parking and storage space, which is especially important in New Hampshire's climate. Additionally, being able to park automobiles indoors will protect adjacent wetlands and water quality by minimizing the exposure to any runoff of automotive fluids such as oils, greases and solvents.

Site Characteristics and Wetland Delineation The property contains two identified wetlands:

1. **Wetland A:** Located in the front (east side) of the house.

Wetland A Area:	2209 SQ FT
Wetland A Buffer Area:	8682 SQ FT

2. **Wetland B:** Identified in 2025 as a low-spot wetland due to water accumulation from a neighboring sump pump at 20 Corner Stone Drive.

Wetland B Area:	258 SQ FT
Wetland B Buffer Area:	6147 SQ FT

3. **Impervious Details:**

Existing Impervious:	2591 SQ FT (19%)
Existing Asphalt To Be Removed:	207 SQ FT
Proposed Increase:	430 SQ FT
Net Increase:	223 SQ FT

   TOTAL PROPOSED IMPERVIOUS: 2814 SQ FT (21%)

4. **Wetland Buffer Details:**

Buffer Overlap Area:	4409 SQ FT
Existing Buffer Impacts:	2212 SQ FT
Proposed Buffer Impacts:	2435 SQ FT

Impact Assessment and Work Plan

The proposed garage is to be built on the left (south) side of the existing house. Alternative placement of the garage is not feasible due to a required 40-foot setback from other structures, as mandated by local zoning regulations. Relocating the garage elsewhere on the lot would either violate these setbacks or result in greater environmental disturbance. The proposed location was selected to minimize wetland impact while meeting all regulatory requirements and remaining practical and functional to our home. To further avoid environmental impacts, more than one-third of the garage will be built upon existing impermeable surface, displacing 207 square feet of asphalt.

Mitigation Measures

Recognizing the importance of protecting wetland integrity, the following measures have been integrated into the project design and construction process.

- **Permanent Impact:** Approximately 0 square feet of Wetland B will be permanently impacted by the construction of the attached garage. Additionally, 0 square feet of Wetland A will be permanently impacted by the construction of the attached garage. The existing house is 17.5 feet from Wetland A at the closest point. The proposed garage will be 20 feet from Wetland A and 3 feet from Wetland B at the closest points.

- **Managing for Minimized Impacts:** The garage is positioned 20 feet from Wetland A, eliminating any direct disturbance to that area. Wetland B will be protected with sediment control / limit-of-work barrier during construction. Construction activities will be closely managed to ensure that any disruptions to the buffer of Wetland B are strictly temporary. Any exposed soils will be stabilized with grass upon completion of construction. Neither wetland will be used for material storage or parking during construction.

Conclusion

In summary, our proposed attached garage project has been designed with a strong emphasis on protecting, preserving and enhancing the adjacent wetlands. We respectfully request that the Conditional Use Permit be granted, enabling us to move forward with construction while safeguarding the natural features of our property.

Thank you for your consideration.

Best,

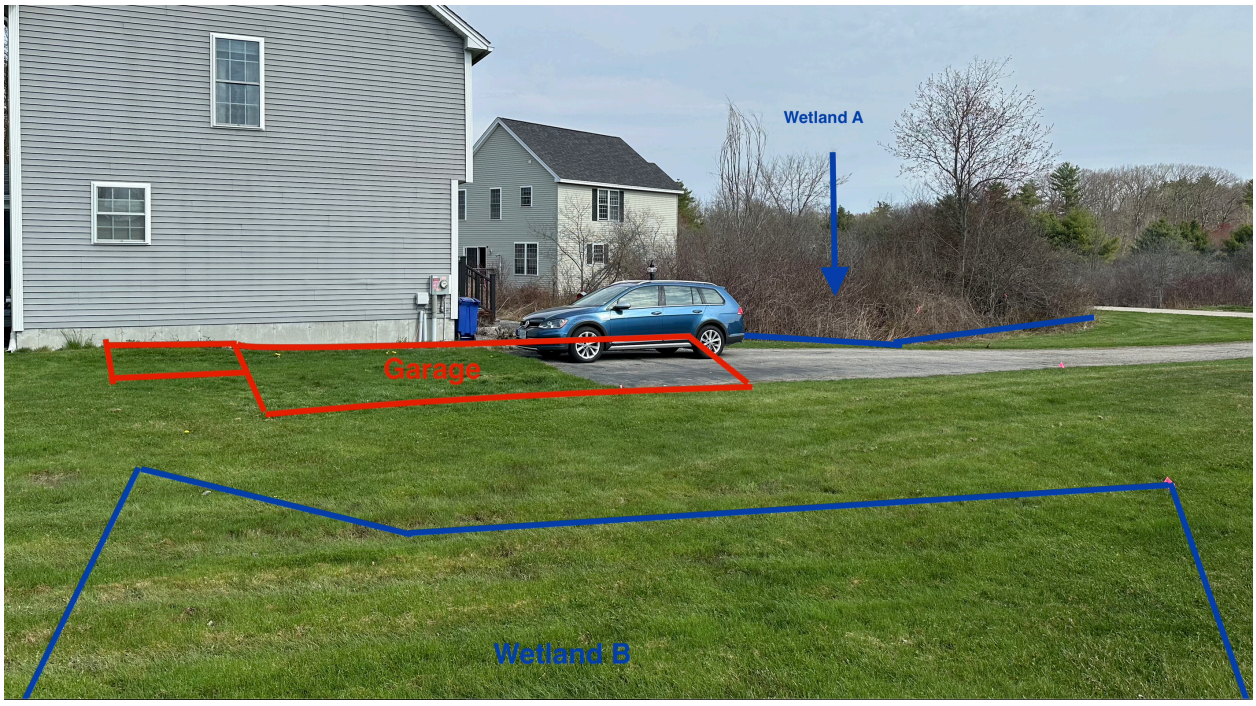
Eric and Megan Latour

Attachments:

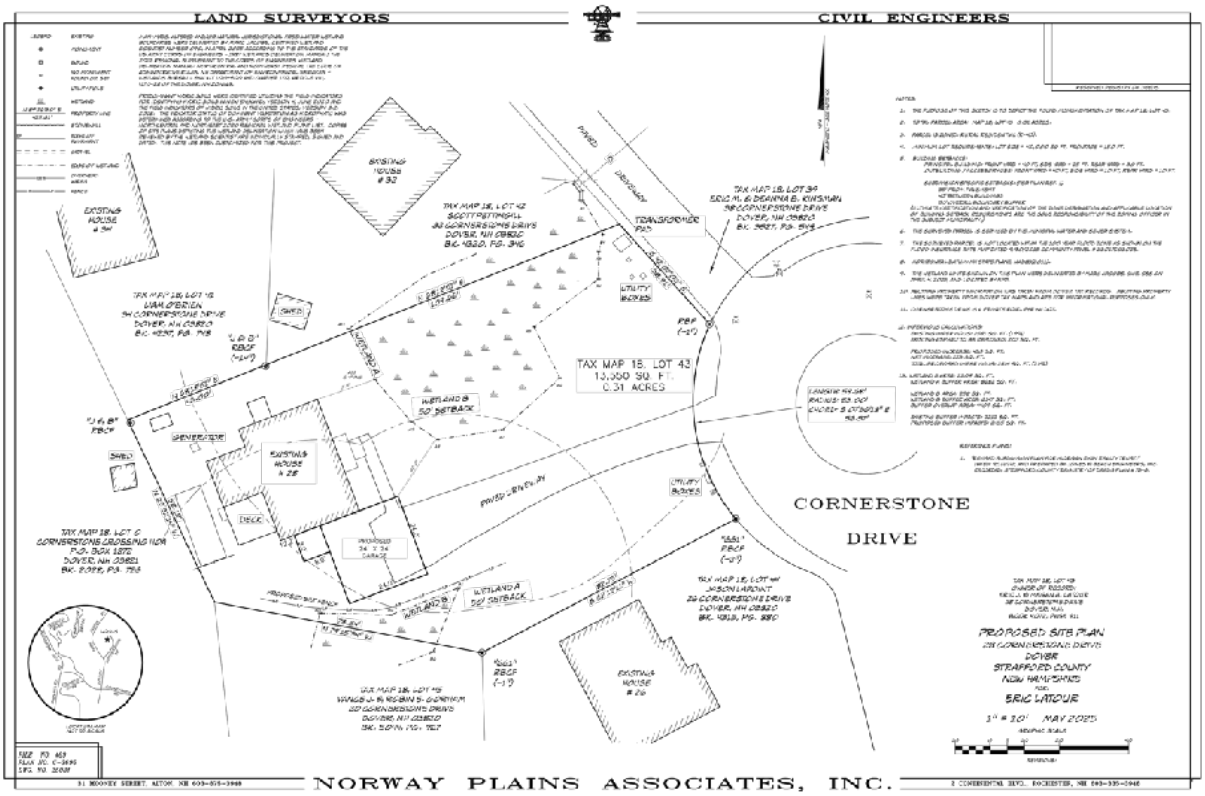
1. Site image of 28 Corner Stone Drive - Front
2. Site image of 28 Corner Stone Drive - Back
3. Site image of 28 Corner Stone Drive - Side
4. 25031 Proposed Site Plan Del01
5. Neighboring sump pump

Site image of 28 Corner Stone Drive - Back

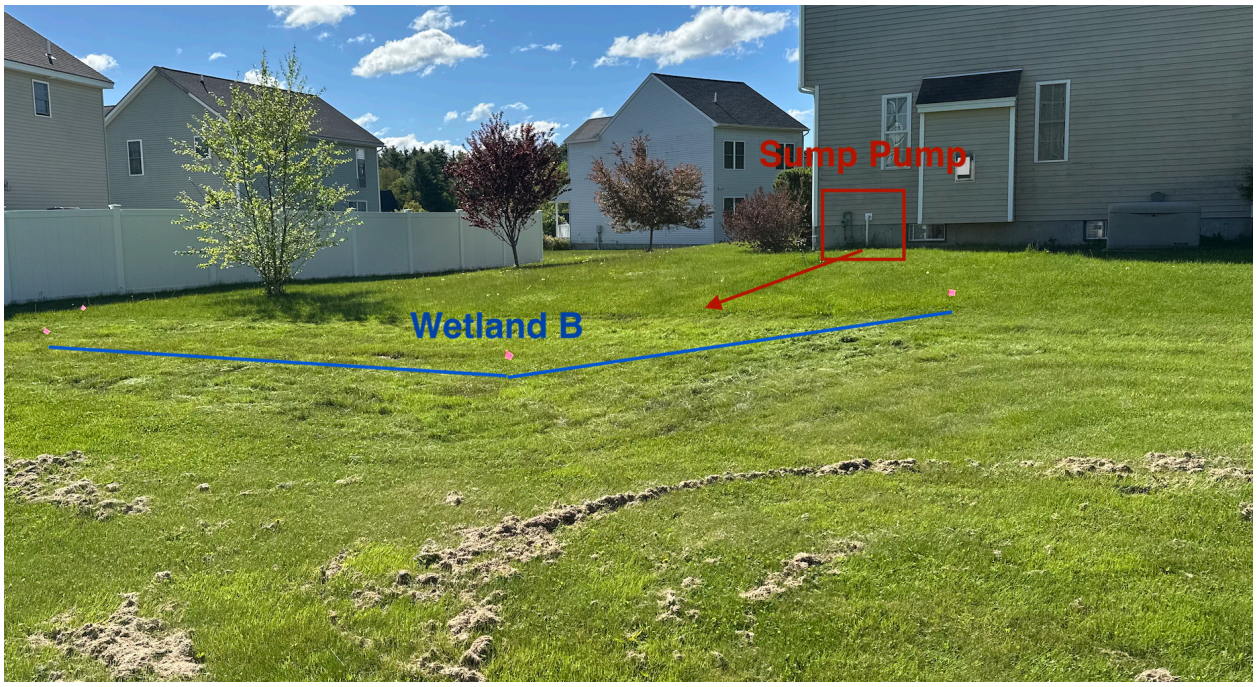
Site image of 28 Corner Stone Drive - Side



25031 Proposed Site Plan Del01



Site image of 28 Corner Stone Drive - Front


Sump Pump
Wetland B

LAND SURVEYORS

CIVIL ENGINEERS

RESERVED REGISTRY OF DEEDS

LEGEND

◉	MONUMENT
⊡	BOUND
○	NO MONUMENT FOUND OR SET
●—	UTILITY POLE
	WETLAND
N 89°56'30" E 425.61'	PROPERTY LINE
	STONEWALL
EP	EDGE OF PAVEMENT
	GRAVEL
	EDGE OF WETLAND
	OVERHEAD WIRES
//	FENCE

MAN-MADE, ALTERED AND/OR NATURAL JURISDICTIONAL FRESHWATER WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, IN APRIL 2025 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - 1987 WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900 AND CHAPTER 170, ARTICLE VIII, §170-28 OF THE DOVER, NH ZONING.

PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, JUNE 2020 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, 2018. THE INDICATOR STATUS OF DOMINANT VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2020 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.

STATE OF NEW HAMPSHIRE
MARC E. JACOBS
No. 090
CERTIFIED WETLAND SCIENTIST

MAGNETIC PER PLAN REF. 1

NOTES:

1. THE PURPOSE OF THIS SKETCH IS TO DEPICT THE FOUND MONUMENTATION OF TAX MAP 18, LOT 43.
2. TOTAL PARCEL AREA: MAP 18, LOT 43 0.31 ACRES.
3. PARCEL IS ZONED: RURAL RESIDENTIAL (R-40).
4. MINIMUM LOT REQUIREMENTS: LOT SIZE = 40,000 SQ FT, FRONTAGE = 150 FT.
5. BUILDING SETBACKS:
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   35' FROM PAVEMENT
   40' BETWEEN BUILDINGS
   50' OVERALL BOUNDARY BUFFER
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6. THE SURVEYED PARCEL IS SERVICED BY THE MUNICIPAL WATER AND SEWER SYSTEM.
7. THE SURVEYED PARCEL IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0302E.
8. HORIZONTAL DATUM: NH STATE PLANE, NAD83(2011).
9. THE WETLAND LIMITS SHOWN ON THIS PLAN WERE DELINEATED BY MARC JACOBS, CWS, CSS ON APRIL 4, 2025, AND LOCATED BY NPA.
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11. CORNERSTONE DRIVE IS A PRIVATE ROAD, PER NH DOT.

REFERENCE PLANS:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TRUST."
   DATED: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC.
   RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

EXISTING HOUSE # 32

EXISTING HOUSE # 34

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4237, PG. 748

TAX MAP 18, LOT 39
ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 3527, PG. 549

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

SHED

"J & B" RBCF (-14")

N 68°18'51" E 109.66'

S 42°07'03" E 38.92'

RBF (-1")

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 @ 4" PVC A11

WETLAND A

WETLAND B 50' SETBACK

TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E 56.57'

N 68°18'51" E 43.00'

"J & B" RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

PAVED DRIVEWAY

N 25°32'14" W 58.15'

UTILITY BOXES

CORNERSTONE DRIVE

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK. 2028, PG. 726

"GG1" RBCF (-2")

TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

B1 B2 B3

WETLAND B

WETLAND A 50' SETBACK

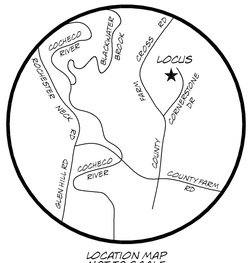
78.54' N 79°15'34" W

82.75' S 62°12'11" W

"GG1" RBCF (-1")

EXISTING HOUSE # 26

TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 5044, PG. 967



LOCATION MAP
NOT TO SCALE

STATE OF NEW HAMPSHIRE
No. 1129
GLENN D. GRISWOLD
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

EXISTING SITE CONDITIONS
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MAY 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO. C-3696
DWG. NO. 25031

SHEET 1 of 2

31 MOONEY STREET, ALTON, NH 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948

RESERVED REGISTRY OF DEEDS

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9. FIELD SURVEY PERFORMED ON THE FOLLOWING DATE: MONTH DAY, YEAR – MONTH DAY, YEAR
10. ABUTTING PROPERTY INFORMATION WAS TAKEN FROM DOVER TAX RECORDS. ABUTTING PROPERTY LINES WERE TAKEN FROM DOVER TAX MAPS AND ARE FOR INFORMATIONAL PURPOSES ONLY.
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NPA
MAGNETIC – SEE NOTE XX

EXISTING HOUSE # 34

EXISTING HOUSE # 32

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

TAX MAP 18, LOT 39
ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 3527, PG. 549

S 42°07'03" E
38.91'

RBF
(-1")

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4237, PG. 748

SHED

"J & B"
RBCF
(-14")

N 68°18'51" E
109.66'

10' ACCESSORY BLDG SETBACK

APPROXIMATE WETLANDS

25' PRIMARY BLDG SETBACK

40' BLDG SETBACK

TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E
56.57'

N 68°18'51" E
43.00'

"J & B"
RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

PAVED DRIVEWAY

50' WETLAND BUFFER

UTILITY BOXES

N 25°32'14" W
58.15'

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK. 2028, PG. 726

10' ACCESSORY BLDG SETBACK

APPROXIMATE WETLANDS

78.54'
N 79°15'34" W

S 62°12'11" W
82.75'

"GG1"
RBCF
(-2")

TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

"GG1"
RBCF
(-1")

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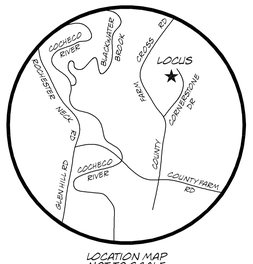
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 5044, PG. 967

EXISTING HOUSE # 26

CORNERSTONE DRIVE



LOCATION MAP
NOT TO SCALE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

PRELIMINARY PLAN
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MARCH 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO.
DWG. NO. 25031

PRINTED ON: MONTH DAY, YEAR

LAND SURVEYORS

CIVIL ENGINEERS

RESERVED REGISTRY OF DEEDS

LEGEND

- EXISTING
- MONUMENT
- BOUND
- NO MONUMENT FOUND OR SET
- UTILITY POLE
- WETLAND
- N 89°56'30" E 425.61' — PROPERTY LINE
- STONEWALL
- EP — EDGE OF PAVEMENT
- GRAVEL
- EDGE OF WETLAND
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- // — FENCE

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STATE OF NEW HAMPSHIRE — MARC E. JACOBS — No. 090 — CERTIFIED WETLAND SCIENTIST

MAGNETIC PER PLAN REF. 1

EXISTING HOUSE # 34

EXISTING HOUSE # 32

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SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

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PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

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SHED

"J & B" RBCF (-14")

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TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

WETLAND A

WETLAND B
50' SETBACK

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 B1 B2 B3

A10 @ 4" PVC

17.5'

20.0'

N 68°18'51" E 43.00'

"J & B" RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

PROPOSED 24' X 24' GARAGE

12.2' 8.0' 8.0' 24.0' 24.0'

N 25°32'14" W 58.15'

PAVED DRIVEWAY

UTILITY BOXES

"GG1" RBCF (-2")

S 62°12'11" W 82.75'

TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

PROPOSED SILT FENCE

S/F

WETLAND B

WETLAND A
50' SETBACK

78.54'
N 79°15'34" W

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TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
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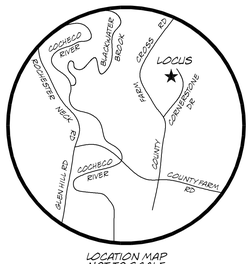

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NOT TO SCALE

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12. IMPERVIOUS CALCULATIONS:
    EXISTING IMPERVIOUS: 2591 SQ. FT. (19%)
    EXISTING ASPHALT TO BE REMOVED: 207 SQ. FT.

    PROPOSED INCREASE: 430 SQ. FT.
    NET INCREASE: 223 SQ. FT.
    TOTAL PROPOSED IMPERVIOUS: 2814 SQ. FT. (21%)
13. WETLAND A AREA: 2209 SQ. FT.
    WETLAND A BUFFER AREA: 8682 SQ. FT.

    WETLAND B AREA: 258 SQ. FT.
    WETLAND B BUFFER AREA: 6147 SQ. FT.
    BUFFER OVERLAP AREA: 4409 SQ. FT.

    EXISTING BUFFER IMPACTS: 2212 SQ. FT.
    PROPOSED BUFFER IMPACTS: 2435 SQ. FT.

REFERENCE PLANS:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TRUST." DATED: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC. RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

STATE OF NEW HAMPSHIRE — No. 1129 GLENN D. GRISWOLD — LICENSED LAND SURVEYOR — SIGNATURE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

PROPOSED SITE PLAN
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MAY 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO. C-3696
DWG. NO. 25031

SHEET 2 of 2

31 MOONEY STREET, ALTON, NH 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948

From: Tanya Davis <T.Davis79@outlook.com>
Sent: Tuesday, July 22, 2025 10:20 AM
To: Planning Board - All <PlanningBoard-All@dover.nh.gov>
Subject: July 22, 2025 hearing concerning 28 Cornerstone Drive Conditional Use Permit #COND-2025-0008
Importance: High

Security Notice: External sender. Use caution with hyperlinks or attachments.

RE: Opposition to Wetlands Disruption and Drainage Concerns Related to Conditional Use Permit #COND-2025-0008, 28 Cornerstone Drive

Dear Members of the Dover Planning Board,

I am writing as a concerned resident of Dover to express my strong opposition to the proposed wetlands disruption associated with **Conditional Use Permit #COND-2025-0008**, concerning the property at **28 Cornerstone Drive**.

The wetlands in this area are essential to the environmental health and safety of our neighborhood. They naturally manage stormwater, control flooding, filter runoff, and support diverse ecosystems. Disturbing them poses serious risks to the surrounding environment and infrastructure.

Of particular concern is the redirection of water drainage toward the front of nearby homes, including my own. If drainage is moved or increased toward the wetlands and adjacent roadways, it will alter the natural water flow and likely cause erosion to both the wetlands and the road in front of these homes. This change could compromise soil stability, damage public roads, and increase the risk of flooding in residential areas.

Draining additional runoff onto the wetlands at 28 Cornerstone Drive would directly change the water dynamics of the area, likely accelerating erosion to both the surrounding land and the roadway near my property. These are not speculative concerns—this type of environmental disruption has measurable and lasting consequences that impact public safety and city infrastructure.

I urge the Planning Board to reconsider the approval of this Conditional Use Permit, protect the wetlands surrounding 28 Cornerstone Drive, and take immediate steps to assess and address drainage-related risks before any work proceeds.

Thank you for your time, consideration, and continued service to the Dover community.

Sincerely,

A concerned neighbor

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0013

Application Type:	Conditional Use Permit
Applicant(s):	Summit Land Development, LLC
Owner(s):	Summit Land Development, LLC
Location:	Littleworth Road (Assessor's Map G, Lot 2)
Meeting Date:	July 22, 2025

INTENT: Proposal is for a Conditional Use Permit (CUP) for the construction of an access way and site grading for the installation of a bioretention pond that will result in wetland buffer impacts of 16,679± square feet.

AGENDA ITEM #: 4-I

FILE: COND-2025-0013

APPLICANT/OWNER: Summit Land Development, LLC

LOTS/UNITS PROPOSED: One light industrial building proposed (includes industrial and office space)

ACREAGE: 5.11± acres

ZONING DISTRICT: Commercial Manufacturing (CM), Wetland Protection District

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Light Industrial/Office

SURROUNDING LAND USE: Commercial, Residential

WAIVERS REQUESTED: Requested relief from §153-14G(1)(f), minimum landscaping along roadway, and §153-14K(1)(a), allowed percentage of parking spaces in front of the building

ZBA ACTION: N/A

PERMITS REQUIRED: City of Dover CUP, NHDES AoT, NHDOT Driveway Permit

CONSERVATION COMMISSION: Endorsed on 7/14/25.

ATTACHMENTS: Site Plan

Summary of Request and Background:
The applicant is proposing to construct an approximately 26,880 square foot light industrial building on a currently vacant property on Littleworth Road (Assessor's Map G, Lot 2).

As part of the proposed construction of the access way, and due to site grading to support the installation of a bioretention pond, there are approximately 16,679± square feet of wetland buffer impacts being proposed. There are two proposed wetland buffer impact areas: approximately 8,010 square feet for the access way and related grading, and approximately 8,669 square feet for installing a bioretention pond for stormwater management. The building and parking areas are proposed to be located upland of the wetlands and wetland buffers. There are no direct wetland impacts.

The Technical Review Committee reviewed the site plan application at their June 12, 2025 meeting. *(minutes attached)*

The Conservation Commission reviewed and endorsed the CUP at their July 14, 2025 special meeting. *(minutes attached)*

Consistency with Land Use Regulations – CUP 170-28.F

The Wetlands Protection District ordinance §170-28.F provides for Conditional Use Permits to allow impacts to the Wetlands Protection District if standards related to demonstration that no practicable alternative is available, impact avoidance was considered, impacts were minimized, mitigation has been sought, and approval of the wetlands impact from NHDES Wetlands Bureau has been granted.

Planning Staff feels that the applicant considered and met all of the criteria as specified in §170-28.F per their narrative. The project avoids direct wetland impacts. There are two buffer impact areas totaling approximately 16,679 square feet, while the building and parking areas are proposed upland of the wetlands and buffer areas. The buffer impacts are limited to a section of the access way, the bioretention pond, and related site grading. The site design uses gentle slopes to reduce grading and disturbed areas will be restored where possible. As there are no wetlands impacts, mitigation and NHDES wetlands permitting are not required. However, the proposal was reviewed and endorsed by the Conservation Commission on July 14, 2025.

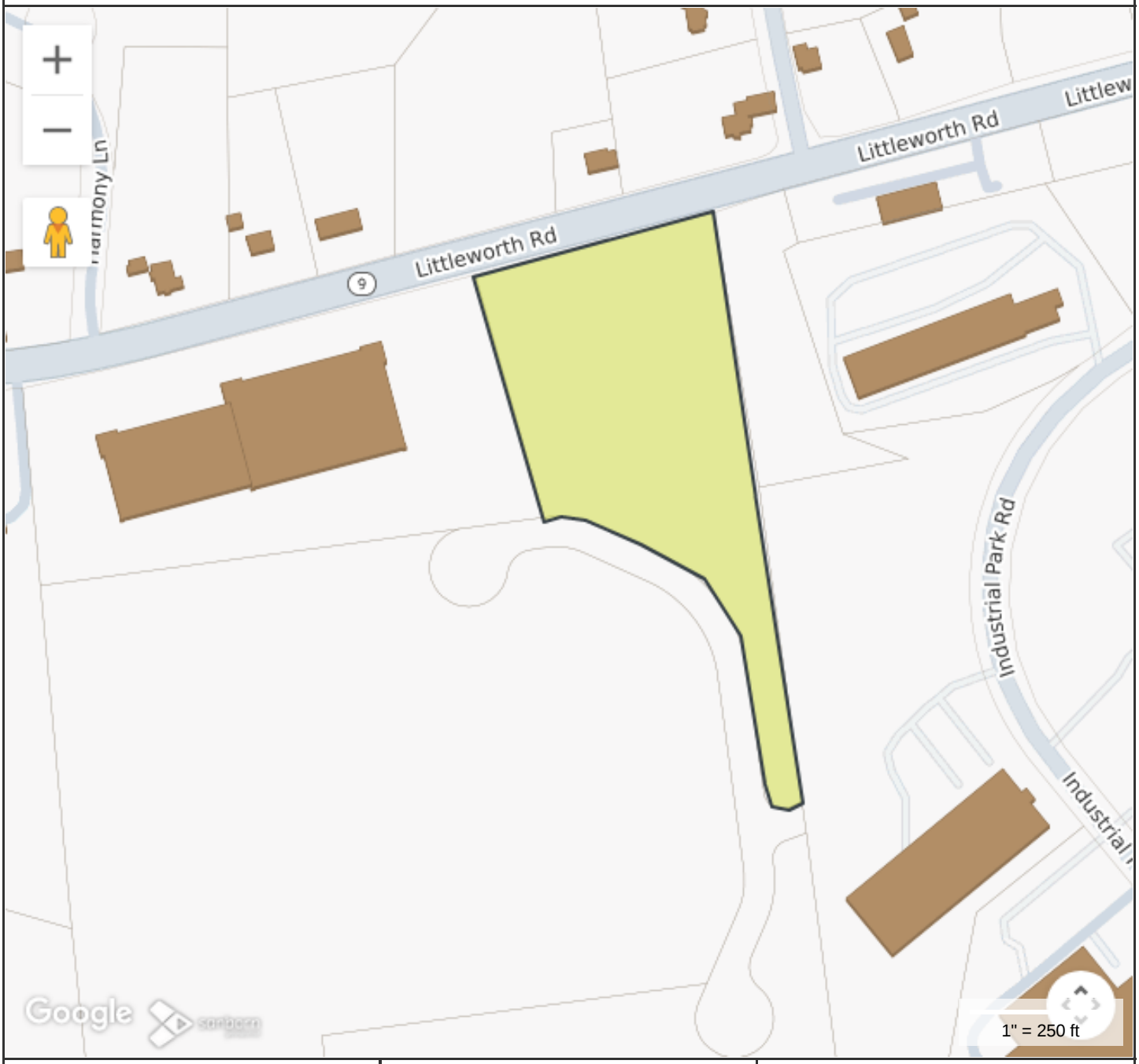
STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the conditional use permit with the following subsequent conditions:

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

1. Approval of SITE-2025-0007;
2. Plan note added to specify seed mix types for all buffer areas proposed for restoration.

COND-2025-0013 LITTLEWORTH



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 10/30/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2025-0013
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	06/24/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Edgecomb, Makayla	**Approval Expire Date:**	

Description: For impact to 16,679 sf of wetland buffer associated with the construction of an access way and installation of a retention pond.

Parcel:	**Address:**	**Zone:**
G0002-000000 Main	Littleworth Rd Main Dover, 03820	CM(Non-Residential - Commercial Manuf

Plan Preparer	Applicant	Owner
Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Summit land Development 340 central ave 202 dover, NH 03820 Business: (603) 749-2300

Permit Custom Fields

Select Permit Type	Wetland Protection District	General Purpose	New Construction	Project Zone	Non-Residential
What is the parcel zoned?	CM	Work	To allow impacts to the wetland buffer, totaling 16,679 s.f. for the construction and grading of the access way, and grading associated with the installation of a bio-retention pond with internal reservoir.	permitstatefed	NH DES Alteration of Terrain (pending) NH DOT Driveway Permit (pending)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_6/24/2025.jpg	06/24/2025 17:54	Haight, Steve		Uploaded via CSS
Permit Snapshot Report.pdf	06/24/2025 17:55	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
2025.7.14_RevisedConservationCommission.Agenda.pdf	07/08/2025 12:16	Blonigen, Rachel		ConCom Agenda

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013031	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2025013031	**$200.00**	**$0.00**
	Grand Total for Permit	**$200.00**	**$0.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	In Review	06/25/2025	07/23/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	In Review	06/25/2025	07/23/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/25/2025 11:06	
Confirm application complete v.1	Generic Action		06/25/2025 11:07
Conditional Use Review v.1	Receive Submittal	06/25/2025 0:00	
Planning Board v.1			
Planning Board Agenda v.1	Task		

PERMIT SNAPSHOT REPORT (COND-2025-0013)

Invoice for Notices v.1	Task
Send Notices v.1	Task
Planner Creates Staff Recommendations v.1	Permit Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Summit Land Development, LLC Telephone # 603-749-2800

Address of Applicant: 340 Central Avenue, Suite 202 Dover, NH 03820

E-Mail Address: chad@summitlanddev.com

Name of Property Owner (if different from applicant): Westfield, LLC Telephone # 603-749-2800

Address of Property Owner: 340 Central Avenue, Suite 202 Dover, NH 03820

PROPERTY INFORMATION

Assessor's Map # G Lot(s) # 2

Address of Property: Littleworth Road

Zoning District(s) CM Overlay District(s) N/A

Existing Use of Property: Vacant

CONDITIONAL USE PERMIT INFORMATION

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

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

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

To allow impacts to the wetland buffer, totaling 16,679 s.f. for the construction and grading of the accessway, and grading associated with the installation of a bio-retention pond with internal resevoir.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status:
NH DES Alteration of Terrain (pending)
NH Department of Transportation Driveway Permit (pending)

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH PE #7978 E-mail address: shaight@civilworksne.com

SIGNATURES

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

Signature of Property Owner: _____ Date: 5/29/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 5/29/25

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
G	2	Westfield, LLC	340 Central Ave, Ste 202 Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Chad Kageleiry	Summit Land Development, LLC	340 Central Ave Ste 202 Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	PO Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

COND-2025-0013 **LITTLEWORTH ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
F0026-000000	LITTLEWORTH RD	PUBLIC SERV CO OF N H		PO BOX 330	MANCHESTER	NH	03105-0330
F0026-A00000	69 LITTLEWORTH RD	NUGENT LISA A		69 LITTLEWORTH RD	DOVER	NH	03820
F0027-000000	67 LITTLEWORTH RD	RAVELING DAVID L		16 FORD DR	BARRINGTON	NH	03825
F0028-A00000	73 LITTLEWORTH RD	SHOCKLEY LUANNE K &	HARVEY DAVID MICHAEL	73 LITTLEWORTH ROAD	DOVER	NH	03820
G0002-000000	LITTLEWORTH RD	WESTFIELD LLC		340 CENTRAL AVE STE 202	DOVER	NH	03820
G0003-A00100	80 INDUSTRIAL PARK RD	RECON REALTY LLC		80 INDUSTRIAL PARK DR	DOVER	NH	03820
G0003-D00002	62 LITTLEWORTH RD	IWORX REAL ESTATE LLC		62 LITTLEWORTH RD	DOVER	NH	03820
G0004-E00000	92 INDUSTRIAL PARK RD	WILLMANCH CORP	C/O BT-NEWYO LLC ATTN CORP REAL ESTATE	55 GLENLAKE PARKWAY NE	ATLANTA	GA	30328
G0040-000000	61 LITTLEWORTH RD	TATE DAREL CLINTON		61 LITTLEWORTH ROAD	DOVER	NH	03820
G0041-000000	LITTLEWORTH RD	BT-NEWYO LLC	ATTN CORP REAL ESTATE DEPT TAX MRG	55 GLENLAKE PARKWAY NE	ATLANTA	GA	30328
G0002-002000	64 LITTLEWORTH RD	BLUEBIRD DOVER LLC		125 OCEAN RD	GREENLAND	NH	03840
		CIVILWORKS NEW ENGLAND	STEPHEN HAIGHT, PE	PO BOX 1166	DOVER	NH	03821
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY, LLS	PO BOX 1166	DOVER	NH	03821

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday July 14, 2025
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Russ Warnock, Kristen Murphy, Brianna Group (Alternate), Robert Atwood (Secretary)
Absent (Excused): Steve Fellows (Vice Chair), Abigail Lyon
Absent (Unexcused):
STAFF PRESENT: Makayla Edgecomb (Conservation Planner)
OTHERS PRESENT:

1. **CALL TO ORDER AND ROLL CALL**
   The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM**
   None

3. **APPROVAL OF THE PRIOR MEETING MINUTES** (SPECIAL MEETING) JUNE 16TH, 2025

R. Atwood moved to approve the minutes of June 16th. R. Warnock seconded. Vote: 4 in favor with 1 abstention

4. **OLD BUSINESS:**
   None

5. **NEW BUSINESS**

   A. City of Dover Conditional Use Permit for Dover Development, LLC, Assessor's Map 40, Lot 25, zoned C, located at 52 Old Rochester Road. Proposal seeks to allow 44.15% impervious surface coverage within the Secondary Groundwater Protection District where 20% is allowed.

Christopher Berry, Berry Surveying and Engineering presented and explained the proposal highlighting the soils on site, existing uses on site, existing impervious surface coverage, location and surroundings.
He explained the proposal to create a small parking lot and three mixed-used buildings. He gave details regarding drainage, pavement areas, storm water changes and improvements, and porous areas.

Mr. Berry clarified additional information for the commission members relating to treatment areas, landscaping plan, ownership and maintenance responsibilities, porous/impervious drive areas and regulations for future oversight.
The members discussed following the ordinance verses the technologies that have come since some of the regulations were put in place.

R. Warnock moved to endorse the CUP as presented. K. Murphy seconded. Vote: 5 in favor

   B. City of Dover Conditional Use Permit for McDonald's USA LLC (c/o Bohler), Assessor's Map H, Lot 4-3, located at 30 Grapevine Drive. Proposal seeks to allow construction of a new McDonald's restaurant and parking with impacts within the Wetland Protection District. The proposed activity results in approx. 7,630 s.f. of re-contouring and grading of land and the construction of parking lots within the 50' wetland buffer. There are no direct wetland impacts proposed.

DRAFT

Connor Ennis, Bohler Engineering, presented the item highlighting background information of the existing conditions on site, and details of the proposed new restaurant with drive-thru. These included parking, landscaping, impacts to wetlands/buffers and storm water management.

The members discussed details of drainage and storm water with the applicant. Additional discussion occurred about the proposed small paving area over the wetlands buffer, traffic patterns, and snow storage.

K. Murphy moved to endorse the CUP with the condition that the snow storage be relocated outside the buffer. R. Atwood seconded. Vote: 4 in favor with 1 opposed.

> **C**. City of Dover Conditional Use Permit for True North Development, LLC Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Rd. Proposal seeks to allow Conservation District impacts for the construction of two single-family homes. Proposal includes temporary impacts related to underground utility installation and permanent impacts due to grading and drainage improvements totaling approx. 6,000 s.f. [NHDES approvals were received and provided as part of this application per previous conditions set by the Conservation Commission]

Joe Griffin, CivilWorks presented and explained the proposal highlighting the existing conditions and details of the proposal including impacts to shore land and buffer. The item was before the Commission in February, and the applicant was asked to address three items:

- Wetlands Bureau feedback
  - DES endorsed all applications
- City Engineer and abutters agree and approve of the proposed culverts
  - Storm water treatment
- Review sea level rise scenario based on UNH predictive trends
  - Review done and explained

Additional details were given to the members relating to location of the culverts and scenarios used in the models. The Chair noted it appears the request of the Commission in February has been met.

R. Atwood moved to endorse the CUP as presented. R. Warnock seconded. Vote: All in favor

> **D.** City of Dover Conditional Use Permit for Eric Latour, Assessor's Map B, Lot 18-43, zoned R-40, located at 28 Cornerstone Drive. Proposal seeks to allow wetland buffer impacts for the construction of a garage and small mudroom that will result in approx. 2,435 s.f. of buffer impacts from two overlapping wetland buffers. There are no direct wetland impacts proposed.

Eric Latour, owner, presented the item and explained the request by highlighting the existing site, proposed garage and mudroom details, and description of wetlands. Stating that one wetland was not naturally occurring.

R. Warnock made a motion to endorse the CUP as presented. Seconded by R. Atwood. Vote: All in favor

> **E.** City of Dover Conditional Use Permit for Tina M. Sawtelle Assessor's Map B, Lot 1-C, zoned R-40, located at 476 Sixth Street. Proposal seeks to allow wetland buffer impacts and conservation district impacts for the expansion of an existing single-family home with approx. 216 s.f. of permanent wetland buffer impacts and approx. 150 s.f. of temporary buffer disturbance. There are no direct wetland impacts proposed.

DRAFT

As no applicant was present to address the item, the item was not heard and will go to the August meeting upon applicant request.

> **F.** City of Dover Conditional Use Permit for Summit Land Development, LLC, Assessor's Map G, Lot 2, zoned CM, located at Littleworth Road. Proposal seeks to allow approx. 16, 678 s.f. of wetland buffer impacts for the construction of an accessway and grading for the installation of a bioretention pond with internal reservoir. Applicant is proposing the CUP as part of the construction of a light industrial building. There are no direct wetland impacts proposed.

Joe Griffin, CivilWorks presented and explained the proposal highlighting site location, details of the proposed building, required permits, impacts, required storm water management practices (bioretention reservoir), drainage.

Details were clarified for the members relating to access, location, and plans for temporary impact areas.

A member reiterated a comment he made last month noting the mismatch of priorities for this area of the City. This area is the single largest hot spot of un-conserved land with the highest priority value for natural resources, yet it's zoned industrial and it's getting built over.

Additional conversation occurred regarding the poor soils in the area and seed specification for the temporary impact areas not being included in the information packet provided.

B. Group made a motion to endorse the CUP as presented with the condition that a note is added to the plan indicating seed specification. Seconded by K. Murphy. Vote: All in favor

Additional conversation occurred expounding on options for preserving and conserving land in that area.

- Land owner initiative
- Zoning changes
- Request to Open Lands Committee for a discussion

6. REPORT FROM THE CHAIR

a. Review of Correspondence Received from NH Department of Environmental Services

None

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

- Ash Tree Info Walk recap
  - Another one planned for August
  - Need better marketing and more advanced marketing
  - Feedback from participants

B. Other:

- Board member handbook is being revised
- Workshop tentative for July 21st

8. ADJOURNMENT

R. Warnock moved and R. Atwood seconded to adjourn. Vote: U/A
The meeting was adjourned at 7:13 PM.

DRAFT

CONDITIONAL USE NARRATIVE
§170-27.1
WETLAND PROTECTION DISTRICT
CONDITIONAL USE APPROVAL REQUIREMENTS
for
Summit Land Development, LLC & Westfield, LLC
LIGHT INDUSTRIAL FACILITY
Tax Map G, Lot 2, Littleworth Road

F. Conditional use approval.

(a) Conditional use approval may be granted by the PLANNING BOARD (RSA 674:21II) after proper public notice and public hearing, for construction within the Wetland Protection District or buffer. Said construction may include but is not limited to a road or other accessway, utility right-of-way, communication lines, power lines and pipelines, structures, and parking lots provided that the proposed construction complies with the following standards: Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area.
The site design will not impact any wetlands. The site design incorporates unique site characteristics including existing slope, depth to estimated seasonal high water, and soil type to minimize wetland buffer impacts and maximize stormwater treatment for pollutant removal. The site layout is designed to limit the wetland buffer impacts for the construction of site access and associated grading, and stormwater treatment practices. Additionally, the area disturbed within the wetland buffer will be loamed and seeded with a conservation mix.

(b) Avoidance: The potential impacts have been avoided to the maximum extent practicable. The APPLICANT will demonstrate by plan and example that the proposed construction represents the least impacting alternative.
The proposed site design locates the building and parking areas upland of wetlands and wetland buffers. The wetland buffer impacts, totaling 16,679 s.f., are limited for the construction of site access and associated grading, and stormwater treatment practices.

(c) Minimization: Any unavoidable impacts have been minimized. No reasonable Alternative to the proposed construction exists which does not impact a wetland, or which has less detrimental impact on a wetland. Design, construction, and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and include restoration of the site as nearly as possible to its original grade.
All impacts have been minimized to the greatest extent practicable, including the use of 3:1 slope to help minimize grading within the wetland buffer. The wetland buffer impacts are limited for the construction of site access and associated grading, and stormwater treatment practices.

(d) Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.
Mitigation is not required. There will be no impact on wetlands.

(e) Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3), below.
There will be no impact on wetlands.

G. Specific provisions.

(1) Wetland Buffers.

(a) Buffers Established. Buffers are hereby established around and encircling all wetlands other than those that were created as legally permitted sedimentation/detention basins or roadside drainage ditches. The minimum width of the wetland buffers shall be fifty (50) feet horizontal distance as measured outward from the perimeter edge of the wetland. Wherever a permit to fill a wetland has been issued by either the New Hampshire Department of Environmental Services (NHDES) or the U.S. Army Corps of Engineers (USACOE), the perimeter of the wetland shall be deemed to be the new edge between the fill as placed in accordance with the permit and the remaining wetland. If there is no remaining wetland, there is no buffer. All other wetland edges shall be determined in accordance with Section D (1) above.
There are no proposed impacts to wetlands. A 50-foot wetland buffer is shown on the site plan, a portion of which will be impacted by the project design, for site improvements associated with the construction of the site access and stormwater treatment practices.

(b) Natural Conditions to be Maintained within Buffers. Where wetland buffer disturbance is allowed pursuant to a state or federal permit, or a conditional use permit, restoration of the disturbed area is required. Restoration is defined as filling ruts or excavated areas with similar soils while maintaining original grade. Applications for a City of Dover BUILDING permit that includes a temporary disturbance of wetlands buffers, pursuant to Section G (1) (e) (iv) below, shall include a "Wetlands Buffer Encroachment and Restoration Plan." Said plan shall be submitted, reviewed, and approved by Building Inspector, in consultation with City staff, prior to the disturbance. Replanting to restore buffers shall be with native non-invasive species specified in the "Wetlands Buffer Encroachment and Restoration Plan". Implementation of the plan shall include the clear delineation of the boundaries of wetland buffers in the field using construction tape or other clear marking devise. Mowing to maintain an existing lawn or field within a wetland buffer area is allowed without a permit, as specified in Section G (1)(e), below, provided the roots of the vegetation are not disturbed and the ground is frozen or sufficiently dry to avoid making ruts.
The wetland buffer impact for this project will be primarily of a permanent nature as allowed by obtaining a Conditional Use Permit. Some areas being impacted by typical grading around the site will be restored as much as is practical as a maintained lawn area.

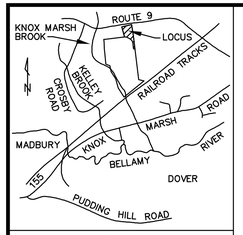
(c) Certain Uses Prohibited in Buffers. The following uses and activities are prohibited within a wetland buffer: DOVER CODE P 170-107 (i) The establishment or expansion of salt storage, JUNKYARDs, resource recovery facilities, transfer stations, landfills, or solid or hazardous waste facilities; (ii) The BULK storage of chemicals, petroleum products, or toxic and hazardous materials; (iii) The dumping or disposal of snow and ice collected from roadways and parking LOTs;
Not applicable.

(d) Uses Allowed Only with a Conditional Use Permit. The following uses and activities are allowed within a wetland buffer only if a conditional use permit is obtained in accordance with Section F above: (i) All uses not specifically prohibited in Section G (1) (c) above or specifically exempted in Section G (1) (e) below. (ii) The erection or construction of a BUILDING or STRUCTURE, excluding FENCEs that meet the requirements of 170-33, or the construction of parking LOTs or loading areas. (iii) Timber harvesting, except as conducted in accordance with the terms and provisions of RSA 227-J, Timber Harvesting. (iv) The removal of stumps and roots (grubbing), the recontouring or grading of the land, or the placement of impervious surfaces or creation of storm water detention ponds. (v) The installation of water, sewer, or buried electrical or telecommunications cables. (vi) The installation of water supply wells.
A Conditional Use Permit is being requested to allow for construction of site access and stormwater management practices, and associated grading within the wetland buffer for this project.

(e) Uses Allowed Without a Conditional Use Permit. The following uses and activities are allowed within a wetland buffer with the noted conditions: (i) Activities within wetlands jurisdictional areas that are allowed without a State of New Hampshire Dredge and Fill Permit, in accordance with NHDES Rules Env-Wt 308.01(a) and 308.02 – repair of an existing legal STRUCTURE; or successor rules. (ii) The removal of vegetation in accordance with NHDES Rules Env-Wt 303.05(b), or successor rules, provided the roots of the vegetation are ZONING P 170-108 not disturbed, and the ground is frozen or sufficiently dry to avoid making ruts. (iii) The installation of monitoring or test wells or geotechnical borings completed in accordance with NHDES Rules Env-Wt 309.02(i) or successor rules. (iv) Temporary disturbance of the wetland buffer to facilitate construction activities completed under a valid City of Dover BUILDING permit, provided the temporary disturbance is restored in accordance with Section G (1) (b) above.
Not applicable.

(2) No septic tank or leach field may be constructed or enlarged closer than seventy-five (75) feet to any Wetland Protection District. In new subdivisions approved subsequent to adoption of this section, there must be sufficient LOT size to place a house, a state-approved septic system, where applicable, and a state-approved well, where applicable, without locating them in a wetland. This provision can be waived if conditional use approval is obtained from the PLANNING BOARD. **Not applicable.**

(3) A state dredge and fill application shall be submitted for any proposed change to a wetland (RSA 482-A). **Not applicable.**



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - GPS OBS.

WESTFIELD ROAD
50' WIDE R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9
VARIABLE WIDTH R.O.W.

PROPOSED 8" SINGLE ROW SILTSOXX (TYP)

PROPOSED 8" DOUBLE ROW SILTSOXX (TYP)

PROPOSED 8" DOUBLE ROW SILTSOXX (TYP)

PROPOSED 8" SINGLE ROW SILTSOXX (TYP)

PROPOSED CHECK DAM (TYP)

PROPOSED HEADWALL INV.OUT=115.50'

PROPOSED HEADWALL INV.OUT=116.50

WETLAND BUFFER IMPACT "A"

WETLAND BUFFER IMPACT "B"

DRAINAGE DITCH (TYP.)

EDGE OF WETLAND (TYP.)

24" HDPE CULVERT
INV. IN = 102.15'
INV. OUT = 101.66'

48" HDPE CULVERT
INV. IN = 101.72'
INV. OUT = 101.34'

24" HDPE CULVERT
INV. IN = 102.9'
INV. OUT = 102.6'

50' WIDE EASEMENT S.C.R.D. 5064/604

F.F.=119.25

TC 112.02
BC 111.52

TC 111.03
BC 110.53

TC 111.27
BC 110.77

TC 113.05
BC 112.55

TC 110.50
BC 110.0 (L.P.)

TC 110.80
BC 110.30

TC 112.08
BC 111.58

TC 112.32
BC 111.82

TC 111.10
BC 110.60

TC 111.69
BC 111.19

TC 113.50
BC 113.00

TC 112.42
BC 111.92

TC 113.25
BC 112.75

TC 113.55
BC 113.05 (H.P.)

TC 114.75
BC 114.25

TC 113.80
BC 113.30

TC 112.78
BC 112.28

TC 111.00
BC 110.50

TC 110.65
BC 110.15

TC 115.40
BC 114.90

TC 115.35
BC 114.85

TC 115.55
BC 115.05

TC 115.10
BC 114.60

TC 115.47
BC 114.97

TC 119.10
BC 118.60

TC 118.80
BC 118.30

TC 118.45
BC 117.95

TC 118.65
BC 118.15

TC 118.35
BC 117.85

TC 118.15
BC 117.66

TC 118.07
BC 117.57

TC 117.95
BC 117.45

TC 120.91
BC 120.41

TC 118.35
BC 117.85

TC 118.17
BC 117.67

TC 119.10
BC 118.60

~123.14

~123.4

122.80

~123.82

119.00
H.P.

113.95
H.P.

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
SMH – SEWER MANHOLE
– WATER SHUT-OFF
– WATER GATE VALVE
– FIRE HYDRANT
92 – CONTOUR LINE – 1' INTERVAL
– EDGE OF WETLAND
– WETLAND
– WETLAND BUFFER
92.0 – PROPOSED FINISH GRADE
x 92.0 – PROPOSED SPOT ELEVATIONS
PD – PROPOSED DRAIN LINE

CONDITIONAL USE PERMIT
WETLAND BUFFER IMPACTS

IMPACT	AREA
A	8,010 S.F.
B	8,669 S.F.
TOTAL	16,679 S.F.

– PROPOSED WETLAND BUFFER IMPACTS

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

PLANNING FILE NO.: SITE

GRADING & EROSION CONTROL PLAN

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

7

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2025-0007

Application Type:	Site Plan
Applicant(s):	Summit Land Development, LLC
Owner(s):	Summit Land Development, LLC
Location:	Littleworth Road (Assessor's Map G, Lot 2)
Meeting Date:	July 22, 2025

INTENT: Proposal is for the construction of a 26,880± square foot light industrial building.

AGENDA ITEM #: 4-J

FILE: SITE-2025-0007

APPLICANT/OWNER: Summit Land Development, LLC

LOTS/UNITS PROPOSED: One light industrial building proposed (includes industrial and office space)

ACREAGE: 5.11± acres

ZONING DISTRICT: Commercial Manufacturing (CM), Wetland Protection District

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Light Industrial/Office

SURROUNDING LAND USE: Commercial, Residential

WAIVERS REQUESTED: Requested relief from §153-14G(1)(f), minimum landscaping along roadway, and §153-14K(1)(a), allowed percentage of parking spaces in front of the building

ZBA ACTION: N/A

PERMITS REQUIRED: City of Dover CUP, NHDES AoT, NHDOT Driveway Permit

CONSERVATION COMMISSION: Endorsed on 7/14/25.

ATTACHMENTS: Site Plan

Summary of Request and Background:
The applicant is proposing to construct an approximately 26,880 square foot light industrial building on a currently vacant property on Littleworth Road (Assessor's Map G, Lot 2).

Along with the construction of the proposed industrial building and associated 41 parking spaces, the proposed site improvements include site clearing, grading, drainage, and utility installation. The site is proposed to have a single driveway access point on Littleworth Road. Littleworth Road is a state highway (Route 9) and the applicant has applied for a NH Department of Transportation Driveway Permit for the proposed access way.

As part of the proposed construction of the access way and due to grading and onsite stormwater management, there are approximately 16,679± square feet of wetland buffer impacts being proposed. There are no direct wetland impacts. The applicant has also applied for a related City of Dover Conditional Use Permit (CUP) for these buffer impacts.

Two waivers are also being proposed as part of this project requesting relief from the minimum required landscaping along the roadway, (ten trees where eleven trees are required), and the allowed percentage of parking in front of the building, (over 50% of parking is proposed in the front of the building).

The Technical Review Committee reviewed the application at their June 12, 2025 meeting. *(minutes attached)*

The Conservation Commission reviewed and endorsed the application at their July 14, 2025 special meeting. *(minutes attached)*

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

1. §153-14G(1)(f), Minimum landscaping along roadway
2. §153-14K(1)(a), Allowed percentage of parking spaces in front of the building

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

(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

See reverse →

waiver will properly carry out the spirit and intent of the regulations."

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

STAFF RECOMMENDATION - Waivers/Relief:
The Planning Department recommends that the Planning Board accept the applications as complete, note they are not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to grant the waiver with the following subsequent condition:

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

1. Add a note that the Planning Board found the criteria of Chapter 153-21 have been met and the Board approved the following waivers:
   §153-14G(1)(f), Minimum landscaping along roadway
   §153-14K(1)(a), Allowed percentage of parking spaces in front of the building

Consistency with Land Use Regulations – Site Plan
§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 that the Planning Board makes the necessary and supporting findings of fact, and vote to approve the site plan with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Approval of COND-2025-0013;
2. Revised current use plan submitted to the City Assessor;
3. Demonstrate that the project meets the solar/green roof requirements in accordance with Chapter 170 or variance is granted. If amended, applicant shall work with the Planning Department to address compliance with the current standard;
4. Confirm with the City Engineer the water main extension sizing, location, and final design details;
5. Confirm with the Building Official that the design of EV spaces meets ADA compliance requirements;
6. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   6.1. Owner's signatures;
   6.2. Professional stamps and signatures;
   6.3. Plan note specifying seed mix types for all buffer areas proposed for restoration;

Subsequent Condition to Be Met Prior to Construction:

7. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;
8. Wetland buffer placards are installed;

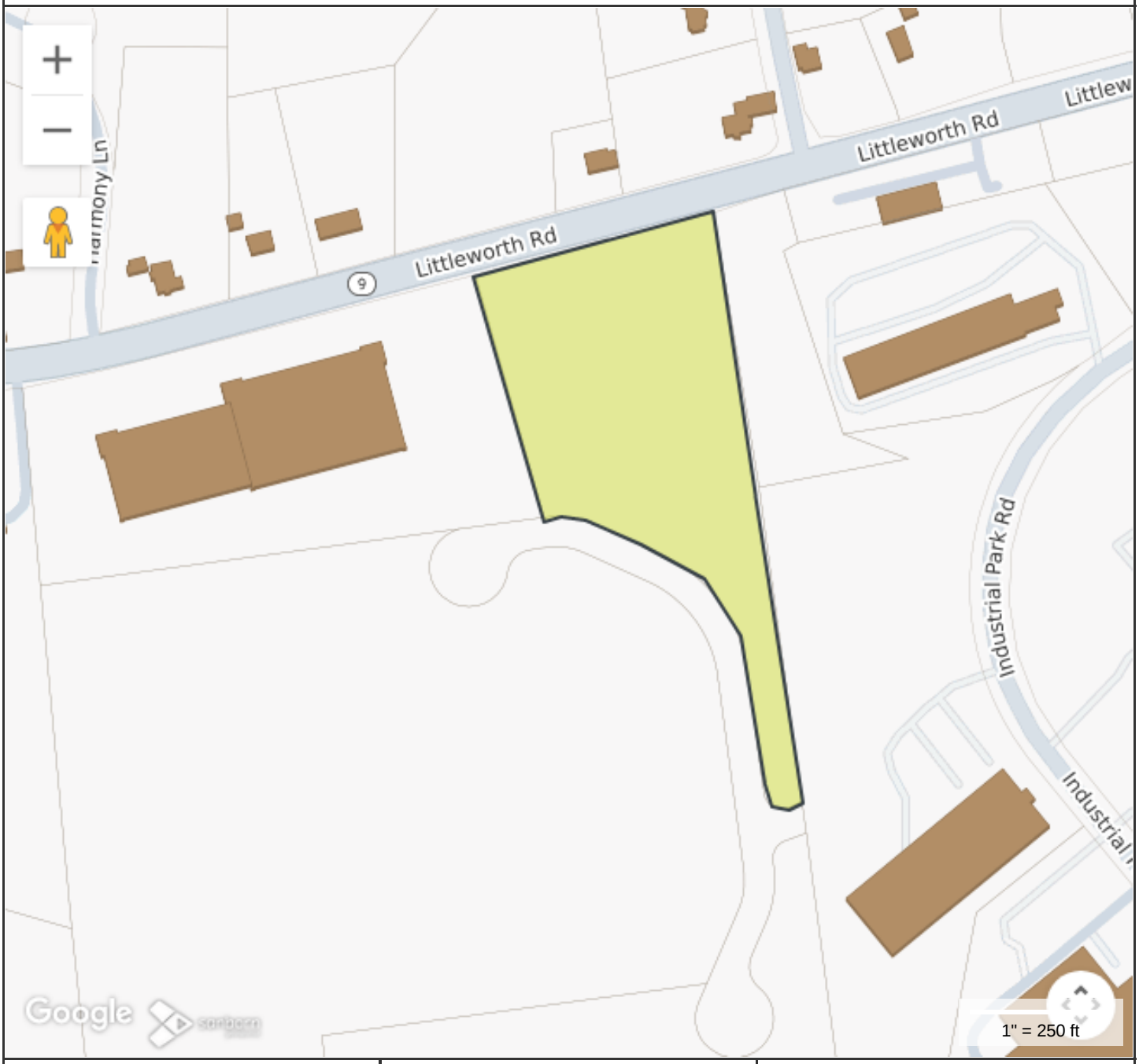
Subsequent Conditions to Be Met Prior to Building Permit:

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

Subsequent Conditions to Be Met Prior to Occupancy:

10. Satisfy any owed Land Use Change Tax obligations, or shall provide written documentation from the City Assessor confirming an alternative timeline has been reached to address any outstanding fees;
11. Issuance of Certificate of Occupancy;
12. Surety or other form of security acceptable to the City is provided for any unfinished work;
13. Wetland buffer placards are still in place or replaced per the plan;
14. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

SITE-2025-0007 LITTLEWORTH ROAD



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 10/30/2023
Data updated Daily

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

PLAN SNAPSHOT REPORT SITE-2025-0007
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	05/29/2025
Work Class:	New Construction	**District:**	None	**Exp Date:**	08/02/2025
Status:	Fees Paid	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	
Description:	Light Industrial 26,880 s.f. building				

Parcel:	G0002-000000 Main	**Address:**	Littleworth Rd Main Dover, 03820	**Zone:**	CM(Non-Residential - Commercial Manuf

Engineer
Civilworks New England
Steve Haight
181 Watson Road PO Box 1166
Dover, NH 03820
Business: (603) 749-0443
Mobile: (603) 817-6651

Architect
TW Designs, LLC
254 Drake Road
Strafford, NH 03884
Business: (603) 664-2181

Surveyor
McEneaney Survey Associates
P.O. Box 1166
DOVER, NH 03821
Business: (603) 742-0911

Soil Scientist
BAG Land Consultants
43 Rockingham Street
Concord, NH 03301
Business: (603) 228-5775

Owner
Summit Land Development
Chad Kageleiry
840 Central Avenue 202
Dover, NH 03820
Business: (603) 749-2800

Plan Custom Fields

Total	0	Total2	0	Total3	37117
Total4	1	Total5	0	Total6	0
Total7	0	Total8	26880	Total9	26880
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	41	Water Service	Municipal
Sewer Service	Municipal	Total Acres (GIS)	58.91	Deed Book	4733
Total SQFT	2.56612e+006	Deed Page	471	Deed Date	20200212
Proposed Property Use	Light Industrial	Area of Parcel to be Developed (SQFT)	159947	Number of Parking Spaces Existing	0
Number of Parking Spaces Proposed	41	Number of Employees Total	40	Type of Building to be Built	Light Industrial; commercial, steel frame, metal sided
Estimated Construction Value	450000.00	Refuse Removal	Public	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
2025.06.12_PlanningTechnicalReviewCommittee.Agenda.pdf	06/04/2025 11:46	Blonigen, Rachel		TRC Agenda
2025.06.12_PlanningTechnicalReviewCommittee.LittleworthRoad_SITE-2025-00	06/13/2025 15:40	Blonigen, Rachel		TRC Draft minutes

PLAN SNAPSHOT REPORT (SITE-2025-0007)

07.pdf

Invoice No.	Fee		Fee Amount	Amount Paid
INV-2025012661	Planning General Application Fee		$200.00	$200.00
		Total for Invoice INV-2025012661	$200.00	$200.00
NOT INVOICED	Planning Non-Residential - Lodging		$35.00	$0.00
	Planning Impervious Paved Area Fee		$2,598.19	$0.00
		Total for Invoice NOT INVOICED	$2,633.19	$0.00
		Grand Total for Plan	**$2,833.19**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	06/12/2025	Technical Review Committee Meeting

Meeting Custom Fields

TRC Meeting Next Steps	Resubmit for 2nd TRC

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	06/04/2025	06/11/2025	06/13/2025	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	06/04/2025	07/02/2025	06/10/2025

Comments: The site plan project narrative does not appear to have been submitted. Please provide.
The building dimensions on the site plan (240' x 112') and architectural drawings (200' x 125') don't match. Please update as necessary.
The architecturals allocate more space between the stairs for loading docks than the site plan – is the current plan adequate for loading docks?

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	06/04/2025	06/11/2025	06/13/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Bassegio, Erin	Requires Re-submit	06/04/2025	07/02/2025	06/13/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Crouser, Paul	Requires Re-submit	06/04/2025	06/11/2025	06/13/2025

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Planning / Inspection Services	Maxfield, Jim	Requires Re-submit	06/04/2025	06/11/2025	06/11/2025

Comments: 1) FDC should be on front of structure
2) Indicate the nearest fire hydrant- discuss access to water

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Coordinator	Police	Speidel, Marn	Requires Re-submit	06/04/2025	06/11/2025	06/13/2025

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		05/29/2025 14:09	
Confirm application complete v.1	Generic Action		05/29/2025 14:09
Technical Review Committee Meeting Agenda v.1	Task	05/29/2025 14:09	06/04/2025 11:48
Land Use Plan Technical Review v.1	Receive Submittal	06/04/2025 0:00	06/13/2025 15:43
Land Use Plan Technical Review v.2	Receive Submittal	06/13/2025 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	06/04/2025 11:47	06/13/2025 15:43
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		

PLAN SNAPSHOT REPORT (SITE-2025-0007)

Send Notices v.1	Task
Planner Creates Staff Recommendations v.1	Plan Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Plan Activity
NOD Sent to Applicant v.1	Create Report
Final Plan v.1	
Land Use Plan Stamped and Signed v.1	Generic Action
Recording v.1	Task
Document Archival v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Building Official Notifies Address v.1	Generic Action
Pre-Con Meeting v.1	Hold Meeting
Create/Link to Records v.1	
Create / Link to Permit - Building Major v.1	Create Sub Permit
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Summit Land Development, LLC Telephone # 603-749-2800

Address of Applicant: 340 Central Avenue, Suite 202 Dover, NH 03820

E-Mail Address: chad@summitlanddev.com

Name of Property Owner (*if different from applicant*): Westfield, LLC Telephone # 603-749-2800

Address of Property Owner: 340 Central Avenue, Suite 202 Dover, NH 03820

PROPERTY INFORMATION

Address of Property: Littleworth Road

Assessor's Map # G Lot(s) # 2

Zoning District(s) CM Overlay District(s) N/A

Size of Parcel: 222,795 sq. ft. 5.11 ac. Property Deed: Book 4733 Page: 471

Existing Use of Property: Vacant

SITE PLAN INFORMATION

Describe Proposed Use: Light Industrial

Area of Parcel to be Developed: _____ 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 41

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

Number of Employees Total: 40± In Maximum Shift: 1

Disposition of Parcel:

Building Footprint 26,880 sq. ft.

Total Building Area 26,880 sq. ft.

Paved Area 37,715 sq. ft.

Building Setbacks:

Front Yard 35 ft.

Rear Yard 10 ft.

Side Yard: Right 10 ft. Left 10 ft.

City Water? X Yes ___ No How far is city water from the property? easement on site

City Sewer? X Yes ___ No How far is city sewer from the property? easement on site

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION N/A

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

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

Relief sought (Check All That Apply):

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

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

BUILDING INFORMATION

Type of Building to be Built: commercial, steel frame, metal sided

Height of Building: 25' ± Finished Floor Elevation: 119.25

Number of Seats (where applicable) N/A

Estimated value of construction: $450,000 Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: Article IV 153-14.K(1)(a) Parking Location

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

See attached Waiver Request

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney - McEneaney Survey Associates

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH LLS #661 E-mail address: kevin@surveynh.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Stephen J. Haight, PE - Civilworks New England

Address PO Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: NH PE #7978 E-mail address: shaight@civilworksne.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) John M. Tuttle, AIA- T-W Designs, LLC

Address 254 Drake Hill Road Strafford, NH 03884 Telephone #: 603-664-2181

Professional License #: NH AIA # 4015 E-mail address: john@tw-designs.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Romy Maurer - Terrain Planning & Design, LLC

Address 311 Kast Hill Road Hopkinton, NH 03229 Telephone #: 603-746-3512

Professional License #: Romy N. Maurer, PLA #86 E-mail address: romy@terrainplanning.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Bruce A. Gilday, CSS, CWS - BAG Land Consultants

Address 43 Rockingham Street Concord, NH 03301 Telephone #: 603-228-5775

Professional License #: NH CSS#012, NH CWS#088 E-mail address: bagilday@comcast.net

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: N/A

SIGNATURES

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

Signature of Property Owner: _____ Date: 6/30/2025

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 6/30/2025

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 6/30/2025

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

CERTIFICATION OF FEES

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

Signature of Property Owner: _____ Date: 6/30/2025

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
G	2	Westfield, LLC	340 Central Avenue, Suite 202 Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Summit Land Development, LLC		340 Central Avenue, Suite 202 Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	PO Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

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: Summit Land Development, LLC File Number: _____

PROJECT TITLE: Light Manufacturing Facility

PROPERTY LOCATION: Littleworth Road Tax Map: G Lot: 2

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the engineered/surveyed plan layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	X	
6. Waiver requests to the Site Plan Review Regulations, with written justification	X	
7. Conditional Use Permit applications	X	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	X	
9. A colored architectural plan showing all sides of buildings	X	
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:	X	
Location map at appropriate scale	X	
Proposed Project name and title and Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners and/or applicants	X	
Signature & stamp of NH licensed land surveyor and/or engineer	X	
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	X	
Location and widths of existing & proposed easements & right of ways	X	
Location and width of existing and proposed access/egress ways	X	

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

REVIEWED BY: _____ DATE_____ TRC DATE_____

Summit Land Development, LLC
Westfield, LLC
340 Central Avenue, Suite 202
Dover, New Hampshire 03820

May 27, 2025

City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: LETTER OF APPLICANT/OWNER AUTHORIZATION
Site Plan Review & Conditional Use Permit Applications & Approvals
Littleworth Road – Tax Map G, Lot 2

I, Chad Kageleiry, authorize Civilworks New England and McEneaney Survey Associates to represent all applications made on behalf of me as Member of both Summit Land Development, LLC (APPLICANT) and Westfield, LLC (OWNER) to the City of Dover Planning Board and any other Dover Board or Committee, as well as any State of NH departments, as necessary, relative to the pursuit of approvals and permits for the development of the subject parcel.

Sincerely,

Chad Kageleiry, Member
Summit Land Development, LLC
& Westfield, LLC

SITE-2025-0007 **LITTLEWORTH ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
F0026-000000	LITTLEWORTH RD	PUBLIC SERV CO OF N H		PO BOX 330	MANCHESTER	NH	03105-0330
F0026-A00000	69 LITTLEWORTH RD	NUGENT LISA A		69 LITTLEWORTH RD	DOVER	NH	03820
F0027-000000	67 LITTLEWORTH RD	RAVELING DAVID L		16 FORD DR	BARRINGTON	NH	03825
F0028-A00000	73 LITTLEWORTH RD	SHOCKLEY LUANNE K &	HARVEY DAVID MICHAEL	73 LITTLEWORTH ROAD	DOVER	NH	03820
G0002-000000	LITTLEWORTH RD	WESTFIELD LLC		340 CENTRAL AVE STE 202	DOVER	NH	03820
G0003-A00100	80 INDUSTRIAL PARK RD	RECON REALTY LLC		80 INDUSTRIAL PARK DR	DOVER	NH	03820
G0003-D00002	62 LITTLEWORTH RD	IWORX REAL ESTATE LLC		62 LITTLEWORTH RD	DOVER	NH	03820
G0004-E00000	92 INDUSTRIAL PARK RD	WILLMANCH CORP	C/O BT-NEWYO LLC ATTN CORP REAL ESTATE	55 GLENLAKE PARKWAY NE	ATLANTA	GA	30328
G0040-000000	61 LITTLEWORTH RD	TATE DAREL CLINTON		61 LITTLEWORTH ROAD	DOVER	NH	03820
G0041-000000	LITTLEWORTH RD	BT-NEWYO LLC	ATTN CORP REAL ESTATE DEPT TAX MRG	55 GLENLAKE PARKWAY NE	ATLANTA	GA	30328
G0002-002000	64 LITTLEWORTH RD	BLUEBIRD DOVER LLC		125 OCEAN RD	GREENLAND	NH	03840
		CIVILWORKS NEW ENGLAI	STEPHEN HAIGHT, PE	PO BOX 1166	DOVER	NH	03821
		MCENEANEY SURVEY ASS	KEVIN MCENEANEY, LLS	PO BOX 1166	DOVER	NH	03821

Site Plan Review
PROJECT NARRATIVE

for
Summit Land Development, LLC
& Westfield, LLC
LIGHT INDUSTRIAL FACILITY
Tax Map G, Lot 2 - Littleworth Road

PROJECT OVERVIEW & SITE CHARACTERISTICS

The Proposed Development Site Plan is for a Light Industrial Facility located on Tax Map G, Lot 2, Littleworth Road, a 5.11-acre parcel within the Commercial Manufacturing (CM) District. The lot is currently undeveloped.

The proposed site design includes the construction of a proposed 26,880 square foot light industrial building and will consist of the following general improvement plan:

- Clear the site, as necessary, for construction.
- Construction of the light industrial building with associated parking.
- Construction of on-site stormwater detention and treatment system, grading, and other drainage requirements.
- Site utility construction & installation.
- Stabilize the remaining areas with loam and seed.

Site Plan Review and a Condition Use Permit is being sought from the Planning Board.

DRIVEWAY AND PARKING LOT

The proposed development will have one (1) driveway entrance on Littleworth Road. The driveway entrance is designed for fire vehicle ingress and egress. Littleworth Road is a NH DOT controlled roadway, and this driveway location provides adequate site distance.

WETLAND PROTECTION DISTRICT SETBACK & IMPACT

There is a wetland located on the adjacent Bluebird Storage lot with a wetland buffer extending onto the project parcel. The proposed driveway will impact this wetland buffer along with wetland buffer impacts at the rear and side of the site for grading and construction of a bio-retention pond with internal storage reservoir. A Conditional Use Permit will be sought for these wetland buffer impact areas totaling 16,679 s.f. There are no proposed wetland impacts.

DRAINAGE

The project proposes the construction of a 26,880 square foot light industrial building along with 37,715 square feet of pavement for access and parking. To mitigate development run-off, the proposed drainage system incorporates deep sump catch basins, a bio-retention pond with internal storage reservoir, and riprap protection at all outfalls of culverts. The proposed stormwater system captures, treats, and stores the stormwater run-off from the site and redirects it to the existing discharge points. The proposed stormwater drainage structures will be maintained by the project proponent as outlined within the Stormwater Management document. The stormwater system has been designed to achieve the required pollutant removal set fourth in the stormwater regulations; calculations are included in the drainage analysis.

TRAFFIC

A traffic assessment was completed for the project and is attached as a report to this submittal. The traffic assessment indicates that this proposed project will increase the ADT on Littleworth Road only by 1.79 percent. Overall, there is a minimal increase in traffic as a result of the proposed development. An NH DOT Driveway Permit has been filed.

UTILITIES

The proposed project will connect to the existing City of Dover water and sewer lines located within separate water and sewer easements present on the project site. Existing electrical and communication services are also located on site. Building and utility connections will be made per the City's Community Services Utility Division and Fire Department requirements and standards.

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2025-0007

Application Type:	Site Plan
Applicant(s):	Summit Land Development, LLC
Owner(s):	Westfield, LLC
Location:	Littleworth Road (Tax Map G, Lot 2)
Date:	June 12, 2025

INTENT: Proposal is for the construction of a 26,880 s.f. Light Industrial/Office building.

UNITS/LOTS PROPOSED: One (1) Commercial Unit

AGENDA ITEM #: 1

ACREAGE: 5.11± ac

ZONING DISTRICT: CM

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Light Industrial/Office

SURROUNDING LAND USE: Commercial

ZBA ACTION: None.

PERMITS REQUIRED: Environmental CUP needed for wetland buffer impact to the northwest of the property, NHDES AoT, NHDOT Driveway Permit

WAIVERS REQUESTED:
§153-13(12) – Landscape plan

ATTENDANCE:
Erin Bassegio, Planning
Paul Crouser, Zoning
Jim Maxfield, Inspection Services
Marn Speidel, Police Department
Ken Mavrogeorge, Engineering
Craig Chabot, Fire Department
Christopher Parker, Business Development
Tom Clark, Planning Board

Others:
Chad Kageleiry, Owner
Joe Griffin, Civilworks NE
Issac LaPointe, Civilworks NE

Approval of minutes from June 5, 2025:
P.Crouser moved to approve the June 5, 2025 minutes. Seconded by M.Speidel. Vote: U/A.

PLAN REVIEW:
Planning:

- Reminder: water and sewer investments fees
- Please provide floor plan to verify layout of office to industrial for parking calculation
- Please add one more sconce light on the east side of the building.
- Waivers needed for:
  - Parking lot in the back - Uniformity ratio is too low and minimum in darkest spot is too bright. (.3-.5)
  - Parking lot landscaping
  - Parking in the front in excess of 50%
- Reminder of Solar/Green Roof standard for 25,000 s.f. + buildings.
- Provide copy of NHDOT driveway permit
- Revise plan set to:
  - Fix typo on title
  - Revise site construction note to indicate no site work on Saturdays or Federal Holidays
  - Use masonry to dress up building. This building is on busy Route 9. Consider using the blue on top with masonry on bottom portion.

Engineering:

- Water main should be looped to Littleworth Rd.
- Add a hydrant close to the intersection with Littleworth Rd.
- Proposed grading appears close to wetland but no flags are provided on the plans. Applicant to provide updated wetland flagging on the relevant plans.
- Defer to IS regarding EV charging station configuration for accessible parking.
- Confirm if new culvert is proposed at driveway and if the existing culvert parallel to Littleworth will be removed.
- Label stormwater best management practice on grading and erosion control plan

- Confirm with IS if FDC is required to be on building front
- Traffic memo references public transit in close proximity to site. It does not appear to be walkable from site to Route 34 pickup.
- Pre and post areas do not match in drainage study

Police:

- Note sheet 4, Dover note 26, site construction hours are contradictory regarding Sundays, clarify.
- Traffic Assessment Memorandum: Public Transit section mentions the COAST stop but does not provide a distance.

Inspection Services:

- FDC should be on front of structure
- Indicate the nearest fire hydrant- discuss access to water

Fire Department:

- Front parking lot area appears to be greater than 150' in length, turn around requirement?

Business Development:

- The building dimensions on the site plan (240' x 112') and architectural drawings (200' x 125') don't match. Please update as necessary.
- The architecturals allocate more space between the stairs for loading docks than the site plan – is the current plan adequate for loading docks?

Planning Board:

- Please submit a proper Waiver request with narrative for justification.
- Correct drainage report credentials.

Next Steps: Revise plans per comments above and resubmit for Conservation Commission review and informal TRC.

Meeting paused at: 10:44 a.m.

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

July 1, 2025

RECEIVED
Planning Office
JUL - 1 2025
Dover, New Hampshire

City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: SITE-2025-0007: Littleworth Road, Tax Assessor's Map G, Lot 2
Response to Technical Review Committee Comments, dated June 12, 2025

Dear Planning Board:

In response to Technical Review Committee minutes – SITE-2025-0007, by TRC dated June12, 2025, we submit the following responses in bold beneath the review comments in italic.

Planning:

1. *Reminder: water and sewer investments fees*
   Acknowledge. The applicant is aware of all impact and investment fees.
2. *Please provide a floor plan to verify layout of office to industrial for parking calculation*
   Revised architectural plans have been provided.
3. *Please add one more sconce light on the east side of the building.*
   The lighting plan has been updated.
4. *Waivers needed for:*
   - *Parking lot in the back - Uniformity ratio is too low and minimum in darkest spot is too bright. (.3-.5)*
     The lighting plan has been updated, no waiver required.
   - *Parking lot landscaping*
     The landscaping plan has been updated, no waiver required.
   - *Parking in the front in excess of 50%*
     A waiver for parking in front has been submitted.
5. *Reminder of Solar/Green Roof standard for 25,000 s.f. + buildings.*
   The applicant is aware of the standard and will work with Planner to address the requirement.
6. *Provide copy of NHDOT driveway permit*
   The driveway permit will be provided once issued.
7. *Revise plan set to:*
   - *Fix typo on title*
     Correction has been made.
   - *Revise site construction note to indicate no site work on Saturdays or Federal Holidays*
     The note has been revised to indicate no work on Sundays or Federal Holidays.
   - *Use masonry to dress up building. This building is on busy Route 9. Consider using the blue on top with masonry on bottom portion.*
     The applicant has provided a rendering of the building facade he intends to construct.

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

Engineering:

1. *Water main should be looped to Littleworth Road.*
   The waterline, with a proposed shut off valve, has been extended to the Littleworth Road ROW.
2. *Add a hydrant close to the intersection with Littleworth Rd.*
   A hydrant has been provided at the entrance drive to the parking in front of the building.
3. *Proposed grading appears close to wetland but no flags are provided on the plans. Applicant to provide updated wetland flagging on the relevant plans.*
   Wetland lines have been highlighted on the plan for clarity. Wetland flagging will be reestablished in the field prior to construction to ensure no wetland disturbance.
4. *Defer to IS regarding EV charging station configuration for accessible parking.*
   Acknowledged.
5. *Confirm if new culvert is proposed at driveway and if the existing culvert parallel to Littleworth will be removed.*
   The existing culvert will remain. The plans have been updated to include the proposed addition of headwalls to the existing cross culvert.
6. *Label stormwater best management practice on grading and erosion control plan*
   Stormwater BMP has been labeled.
7. *Confirm with IS if FDC is required to be on building front*
   FDC has been provided on front of the building.
8. *Traffic memo references public transit in close proximity to site. It does not appear to be walkable from site to Route 34 pickup.*
   Traffic Assessment Memorandum has been revised to indicate COAST does not provide service on Littleworth Road, per conversation with COAST.
9. *Pre and post areas do not match in drainage study*
   The post area accounts for the increased runoff area associated with a portion of the offsite road that connects Westfield Road to Industrial Park Drive.

Police:

1. *Note sheet 4, Dover note 26, site construction hours are contradictory regarding Sundays, clarify.*
   The note has been revised to indicate no work on Sundays or Federal Holidays.
2. *Traffic Assessment Memorandum: Public Transit section mentions the COAST stop but does not provide a distance.*
   Traffic Assessment Memorandum has been revised to indicate COAST does not provide service on Littleworth Road, per conversation with COAST.

Inspection Services:

1. *FDC should be on front of structure*
   FDC has been provided on front of the building.
2. *Indicate the nearest fire hydrant- discuss access to water Fire Department:*
   A hydrant has been provided at the entrance drive to the parking in front of the building.
3. *Front parking lot area appears to be greater than 150' in length, turn around requirement?*
   The firetruck movement plan has been updated to show turning movements in the front parking area.

Business Development:

1. *The building dimensions on the site plan (240' x 112') and architectural drawings (200' x 125') don't match. Please update as necessary.*
   Revised architectural plans have been provided.
2. *The architecturals allocate more space between the stairs for loading docks than the site plan – is the current plan adequate for loading docks?*
   Revised architectural plans have been provided.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

Planning Board:

1. *Please submit a proper Waiver request with narrative for justification.*
   The landscaping plan has been updated, no waiver required. A waiver request for parking in front of the building has been submitted with a narrative for justification.
2. *Correct drainage report credentials.*
   The drainage report has been revised accordingly.

CIVILWORKS NEW ENGLAND
Sincerely,

Stephen J Haight, PE

WAIVER REQUEST

for

SITE REVIEW APPLICATION

Light Industrial Facility
Tax Map G, Lot 2
Littleworth Road

Dover Site Review Regulations: Section 153-14. K (1) (a)

(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%

Waiver request: To allow more than 50% of the parking spaces to be in front of the building.

The parcel consists of 5.11 acres located on Littleworth Road within the CM District. The topography of this parcel plays a significant role in the design layout of this project, as well as the utility easements located within it.

The building is situated slightly forward on the parcel due to the topography of the site. The majority (78%) of the parking spaces (32) are located in front of the building while the remainder of the spaces (9) are located at the back of the building. Parking spaces on the sides of the building are not feasible due to numerous easements to the west and inaccessibility due to slopes and drainage on the east. The grade slopes down approximately 4± feet towards the rear of the building. Additional parking in this area would interfere with the loading docks, truck-turning areas. Beyond the edge of pavement of the back access drive, the grade continues to drop off at a three to one slope, approximately 7± feet, to where the drainage components for this project are located.

This design layout makes the best use of the parcel area given its unique shape and topography and the location of the utility easements burdening it. Granting this waiver would be in general conformance with the intent of the Site Review Regulations as it pertains to other requirements for this use and location.

WAIVER REQUEST

FOR

LIGHT INDUSTRIAL FACILITY

SITE PLAN REVIEW APPLICATION

Tax Map G, Lot 2 - Littleworth Road

ARTICLE IV

Site Design and Development Criteria

§ 153-14 G. (1) (f)

(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.

We are seeking relief to allow a reduction of the number of trees required for the landscape design along the street by one tree. The regulation for landscape design requires one tree per every 35 lineal feet to maintain an attractive streetscape. The frontage for this project is 408± lineal feet and has a 60-foot Eversource easement along one side of the project parcel. We are unable to provide trees within this easement due to overhead utilities. We have proposed the number of trees for a frontage reduced by the width of this easement (408' – 60' = 348') providing 10 trees, where 11 would be required.

BAG

LAND CONSULTANTS

May 25, 2025

Steven Haight, PE
Civilworks New England
181 Watson Road
Dover, NH 03820

RE: Westfield, LLC Project [Map G; Lot 2]
64 Littleworth Road, Dover, NH (56 Ac.+/-)

Dear Steve:

Site Specific Soil Survey Technical Letter Report

At your request, we revisited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed (on campus) building improvement project. Below is a summary report that details the standards utilized, soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-Specific Soil Mapping Standards for New Hampshire and Vermont*, Version 7.0, July 2021. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-Specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 200', with contour intervals of two (2') feet, and ground control indicators provided with details of Knox Marsh Brook (perennial stream), existing road frontage and railroad tracks, 100' wide Eversource Easement, and existing open

field ditch locations. Topographic & boundary survey information was compiled onto our base map by your Civilworks New England, Dover, NH office.

Location

The study site is located on the south side of Littleworth (NH Route 9) Road, north side of the Amtrak railroad tracks, and 300' west of Industrial Park Road in City of Dover, NH. The majority of all areas consist of open agricultural fields. The project study area is approximately 56.0 Ac.+/- and any proposed land improvements, on this project, will be greater than ½ mile from Bellamy River.

Geomorphology

The site is situated in an area of predominant lowlands of glaciomarine and/or glaciolacustrine parent materials. We did encounter very small soil areas that contained moderately-well drained soils in the higher elevations on the site. There were somewhat poorly drained areas on topographic terraces and scattered as isolated upland patches within the majority of soils that were poorly drained.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
32B	Boxford	B	Moderately Well Drained
62B	Charlton	B	Well Drained
232B	Buxton	C	Moderately Well Drained
953B	Boxford	C	Somewhat Poorly Drained
233B/P	Scantic	D	Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%

Limiting Soil Features
Attachment: NCSS Soil Sketch Plan

Most of the entire property is Scantic **[233B]** series which consist of very deep, poorly drained [/P] soils formed in glaciomarine or glaciolacustrine deposits. These soil substratum horizons have silt clay loam textures, massive structure, and firm consistency. These soils have very slow

infiltration rates when thoroughly wetted. They are labeled with a HSG 'D' category. The soil is not suitable for any subsurface sewage disposal systems but can be used for placing clean compacted fill and supporting large (weight distributed) concrete slabs. These soils are still suitable for stormwater treatment structures that can be placed on the landscape in large, shallow, gravel retention basin designed areas.

There were isolated pockets of somewhat poorly drained Boxford **[953]** which have slow infiltration rates and would be labeled as HSG 'C'. On the higher elevations of the property, we encountered a moderately well drained soil series we mapped as Buxton **[232].** These soils had more sandy loam material in a very thick topsoil A-horizon. These soils have a HSG 'C' label. The highest elevation near road frontage is mapped **[62]** Charlton which is well drained, glacial till soil material with no restrictive layers in the subsoil horizons.

Soil profiles observed onsite (12-8-22):

Scantic - 0 -10" 10YR 4/2 Silt Loam texture, Friable consistency, Granular structure
10-32" 2.5Y 4/2 Silt Clay Loam, Massive, Firm [5YR 5/8 Redox @ 12" Many, Prominent]

Boxford - 0 -12" 10YR 2/2 Silt Loam, Granular, Friable
12-36" 2.5Y 4/2 Silt Loam, Subangular, Blocky, Friable [Saturation @ 14' & Water @ 20"]

Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist

BAG:3555B

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

Jase Gregoire

From: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Sent: Wednesday, May 28, 2025 12:42 PM
To: Jase Gregoire
Cc: Steve Haight; Joseph Griffin; Nadeau, Mike
Subject: RE: CNE#18043B-Littleworth Road Lot 2, Dover, NH 03820 Tax Map G, Lot 2

Jase,

Water and Sewer are both available at this location.

Please let me know if you have any questions.

Regards,

Ken

Ken Mavrogeorge, PE
City Engineer
City of Dover, NH
271 Mast Rd.
Dover, NH 03820-4169
e: k.mavrogeorge@dover.nh.gov
p: 603.516.6454 | f: 603.516.6463

Dover: First in New Hampshire, First with you!
http://www.dover.nh.gov

****Click here to read the latest City of Dover Engineering Monthly Report!****

From: Jase Gregoire <jgregoire@civilworksne.com>
Sent: Wednesday, May 28, 2025 12:23 PM
To: Mavrogeorge, Kenneth <K.Mavrogeorge@dover.nh.gov>
Cc: Steve Haight <shaight@civilworksne.com>; Joseph Griffin <jgriffin@civilworksne.com>
Subject: CNE#18043B-Littleworth Road Lot 2, Dover, NH 03820 Tax Map G, Lot 2

Security Notice: External sender. Use caution with hyperlinks or attachments.

Good afternoon Ken,

Summit Land Development, LLC and Westfield, LLC are proposing to build a 26,880 SF building off Little Worth Road on Tax Map G, Lot 2. The building will contain a mix of light manufacturing and office space as follows:

Building:

- **3,276 sf office space → 5 gpd/100 sf = 164 gpd**
- **21,724 sf warehouse → 10 gpd/empoyee = 410 gpd**
- **Approximate total number of eployees = 41**

Total = 574 GPD

These design flow rates are based on NHDES Env-Wq 1008.03 Table 1008-1 Design Flow figures: for unspecified office space (5 GPD/100 SF) and employees in factories without cafeteria or showers (10 GPD/employee). This factory flow rate is the same for any warehouse space.

Attached is a draft utiltiy plan to depict the location, site layout of the building, and draft utiltiy services.

Please advise on the availability of sewer and water to this project.

If you have any questions or require additional infomration please contact me directly.

Best

Jase

Jase Gregoire, EIT
Project Engineer
Direct: (603) 749-0443 x104

Civilworks New England
P.O. Box 1166 Dover, NH 03821
181 Watson Road Dover, NH 03820
Office: (603) 749-0443
https://civilworksne.com

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EVERSOURCE ENERGY

May 28, 2025

1700 Lafayette Road
Portsmouth, NH 03801

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

Westfield, LLC
340 Central Avenue, Suite 202
Dover NH 03820

Dear Westfield, LLC,

I am responding to your request to confirm the availability of electric service for the proposed Littleworth Road, Tax Map G, Lot 2 project being constructed for/by Summit Land Development, LLC.

The proposed project consists of (1) 25,000 square foot light manufacturing building to be fed with a predicted 400-600amp service. The proposed development will be constructed along Littleworth Road.

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

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

The attached drawing titled "Draft Utility Plan" dated xx-xx-xxxx, shows transformer locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements for Electric Supply" (pending).

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

Respectfully.

Trevor Emmons
NH Eastern Regional Engineer, Eversource

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

Unitil
Northern Utilities, Inc.

May 29th, 2025

Civilworks New England
181 Watson Road
Dover, NH 03820

Natural Gas to Light Manufacturing Building at Tax Map G Lot 2, Littleworth Rd., Dover NH

To Whom it May Concern,

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for Natural Gas service.

Unitil hereby confirms that natural gas is available for the proposed development for Tax Map G Lot 2 off Littleworth Rd. in Dover NH.

If you have any questions, please contact me at 603-264-2033.

Sincerely,

Josh Wilk
Senior Business Development Rep
Unitil
T 603.227.4628
M 603.264.2033
F 603.294.5264
Email wilkj@unitil.com

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443

TRAFFIC ASSESSMENT MEMORANDUM

Revised 06/30/25

INTRODUCTION

Civilworks New England has prepared this revised traffic-assessment memorandum (TAM) in regard to the development project proposed on Tax Map G, Lot 2 on Littleworth Road, NH Route 9, in the City of Dover, NH.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit *(subject of revision)*
- sight distances at the proposed driveway
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that:

- relevant sight distances at the Littleworth Road/proposed driveway intersection will be adequate.
- The proposed project is not anticipated to add significant new traffic to the area.

EXISTING SITE DESCRIPTION

The site:

- is along the southerly side of Littleworth Road just east of the Bluebird Storage facility
- has an area of 5.11 acres.
- is presently vacant, open field land.

PROPOSED PROJECT DESCRIPTION

The project will provide :

- one building with a total floor area of about 26,880 square feet (sf) as follows:
  - 24,000 sf of light industrial
  - 2,880 sf of office space.
- one unsignalized 30-foot-wide driveway intersecting Littleworth Road that will provide access to the off-street parking and loading areas of the building.

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ROAD DESCRIPTION

Littleworth Road:

- is under the jurisdiction of the State of New Hampshire.
- in the vicinity of the site has a relatively straight horizontal alignment oriented about east-west.
- has minor vertical grades.
- has bituminous concrete pavement in overall good condition.
- has one travel lane per direction, with a pavement width of 32 ft.
- is marked with a solid double yellow centerline marking (no passing zone) and lane "fog" side lines in the vicinity of the site.
- has a posted speed limit of 40 MPH.
- has no sidewalks on either side.
- streetside parking is not observed.
- has a total average daily traffic (ADT) volume of 10,722***** vehicles (5,376 eastbound and 5,346 westbound) as reported by the NHDOT for 2023.
  [***** actual reported volume = 9,696 vehicles which is not the sum of EB and WB traffic]
- includes existing utility services.

PUBLIC TRANSIT

Collaborative Alliance for Seacoast Transportation (COAST) Route 34 provides bus service along Knox Marsh Road. A bus stop is located just west of Littleworth Road approximately 5,900 feet (1.12 miles) from the Project site. COAST has reported that they have no service on Route 9 in the vicinity of the site.

SIGHT DISTANCES

The project site is on a relatively straight section of Littleworth Road that has limited elevation change so sight distance in both directions is optimized. Several driveways, both commercial and residential, exist along this stretch of roadway along with Columbus Avenue about 550 feet to the east.

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for appropriate sight distances in terms of stopping sight distance (SSD) for vehicles on the main road reacting to existing traffic, and intersection sight distance (ISD) for left turn movements from a stop. For a 40 mile per hour roadway, AASHTO has established the SSD to be 305 feet and ISD to be 445 feet. The available sight distance to the north and south at the proposed project driveway are on the order of 600 feet or more which is suitable for ISD at 55 miles per hour.

Therefore, ample stopping and intersection sight distances are provided and are adequate to provide a safe means of egress. Sight distance from the access drive will not be impeded by the unobstructed nature of the streetside, and with the absence of streetside parking, the opportunity to maintain these sightlines unhindered throughout the year is provided.

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CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual*.[1] This authoritative guide for calculating site traffic includes vehicle trip information for Light Industrial (Land Use Code 110) based on floor area[2] and General Office Building (Land Use Code 710) based on floor area.[3] Table 1 shows calculated vehicle trip ends due to the light industrial portion of the proposed development project while Table 2 shows the calculations for the general office building portion of the proposed development. The total vehicle trips generated by the project are calculated to be:

- Daily (weekday) = 193 total trips (96.5 into site and 96.5 out of site)
- AM peak hour (weekday) = 28.1 total trips (24.7 in and 3.4 out)
- PM peak hour (weekday) = 23.1 total trip (3.5 in and 19.6 out)

Table 1: Trip Generation - Light Industrial

			Vehicle Trips*		
Weekday Period	Avg. Trips / 1,000 sf	Proposed s.f. (1,000)	Total	In	Out
Daily	4.87	24	140	70	70
AM - Peak Hour of Adjacent Street Traffic	0.74	24	20.1	17.7	2.4
PM - Peak Hour of Adjacent Street Traffic	0.65	24	14.4	2	12.4

* ITE, *Trip Generation Manual,* General Light Industrial - Land Use Code 110

Table 2: Trip Generation - General Office Building

			Vehicle Trips*		
Weekday Period	Avg. Trips / 1,000 sf	Proposed s.f. (1,000)	Total	In	Out
Daily	10.84	2.88	53	26.5	26.5
AM - Peak Hour of Adjacent Street Traffic	1.52	2.88	8	7	1
PM - Peak Hour of Adjacent Street Traffic	1.44	2.88	8.7	1.5	7.2

* ITE, *Trip Generation Manual,* General Office Building - Land Use Code 710

[1] ITE, *Trip Generation Manual,* 11th edition (Washington DC, September 2021).

[2] ITE, *Trip Generation Manual,* Volume 3, General Urban/Suburban and Rural (Land Uses 000-399), pages 30 to 35.

[3] ITE, *Trip Generation Manual,* Volume 4, General Urban/Suburban and Rural (Land Uses 400-799), pages 707 to 711.

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TRIP DISTRIBUTION/ASSIGNMENT

All project-related trips will access the site from Littleworth Road. The calculated vehicle trip generation for the development project is so low, especially at peak hours, that area traffic operations are not sensitive to trip distribution/assignment of project vehicle trips.

POTENTIAL TRAFFIC IMPACTS

The calculations show less than 200 weekday vehicle trips and less than 30 peak-hour trips, due to the proposed project. More specifically, tabulated trip generation is:

- 193 total daily vehicle trips.
- 23 to 28 total peak hour vehicle trips.
- These totals are split between vehicles entering and vehicles exiting the site.

The increase in weekday trips represents only 1.79 percent of the ADT on Littleworth Road as counted in 2023. Therefore, the proposed project is not anticipated to add significant new traffic to the surrounding area, nor impact such.

CONCLUSION

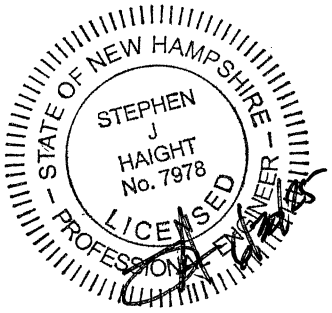
In conclusion:

- Sight distances at the Littleworth Road/proposed driveway intersection will be adequate.
- The proposed project is not anticipated to add significant new traffic to the area.

CIVILWORKS NEW ENGLAND

Sincerely,

Stephen J. Haight, PE



Cc: Westfield LLC

Landscape Best Management Practices
Operations and Maintenance Plan

Commercial Site

Littleworth Road
Dover, New Hampshire 03820

Prepared for:
Summit Land Development LLC
340 Central Avenue
Suite 202
Dover, NH 03820

Prepared by:
Terrain Planning & Design, LLC
311 Kast Hill Road
Hopkinton, NH 03229

Landscape Maintenance

Introduction:

The landscape enhancements proposed for the proposed residential development will require modest maintenance at various times throughout the year. For the site plantings, maintenance is most important during the first 1-2 years following installation when plants are becoming established. Anyone involved in the upkeep of the facility should become familiar with the landscape and its features. Identified below are basic, at minimum, maintenance tasks:

Weekly Tasks:

1. Prune back any shrubs overhanging curbs or sidewalks.
2. Remove litter from plants bed.
3. Remove broken or fallen branches from trees.
4. Prune sucker growth from tree trunks.
5. Remove weeds larger than 2 inches high or wide from plant beds. Weeds 2 inches and larger must be removed, not just killed. **The application of herbicides such as Roundup is discouraged.**
6. Any invasive species seedlings observed should be removed and disposed of properly.
7. Replace bark mulch that may have been washed out of planting beds. Smooth mulch layer if it has been disturbed.
8. Check plants for signs of stress, pests, or disease and notify Owner for authorization to replace.
9. If a significant decline in plant health is attributed to an insect pest, **apply an organic product and/or process** to control the pest.
10. Water plants that are dry and stressed.
11. Notify Owner for authorization to replace dead plants at the appropriate time (see annual tasks, September).
12. Identify other tasks listed on the Annual and Monthly checklist of tasks.

Annual Tasks

Early Spring:

1. Prune winter damage such as broken tree branches that interfere with public safety.
2. Trim dead perennial foliage left in the fall for winter interest to within six inches of the ground.
3. Add new mulch to plant beds where the mulch depth has been reduced to less than 2 inches. Mulch depth shall not exceed two inches (top dressed). Mulch is not required where shrubs or groundcover completely hide the soil surface from view.
4. Gently prune shrubs at appropriate time of year based on species, for shape and form. **Do not shear.**
5. Energize the irrigation system, repair damaged components, test the system, adjust heads, and update programing.
6. Conduct a soil test to measure at a minimum, pH, phosphorus, potassium, calcium, and magnesium.

Follow the recommendations provided with the soil test results.

7. Apply fertilizer only when required. A single application of fertilizer per year before Memorial Day is encouraged.

Monthly Tasks

June:

No additional items

July:

No additional items

August:

No additional items

September:

1. Inventory all plant materials, including an exact count of all shrubs and trees.
2. Replace any dead or missing plants.
3. Aerate lawn areas.
4. Apply pelletized lime at a rate of 80 lbs/1,000 square feet or as soil test dictates.

October:

1. Winterize irrigation system.

November:

1. Remove leaves from lawn areas and planting beds.
2. Remove perennial vegetation that has died back for the season.
3. Apply “WILT-PRUF” to broadleaf evergreens, according to label instructions, to protect shrubs from winter die back.

December:

1. Prune any tree branches that interfere with public safety.
2. Prune street and parking lot trees yearly to encourage strong growth the following growing season. Trees adjacent to pedestrian sidewalks shall have branches pruned to 6-foot height.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Replace dead or dying plants			X				
Remove weeds	X		X	X	X		
Cut down grasses			X				
Remove accumulated leaves, litter, and plant debris		X					X

Stormwater Detention Facilities

Introduction:

The stormwater facilities are used to attenuate flow and treat stormwater. The stormwater treatment areas consist of a large bioretention pond and linear swales seeded with a variety of native, adaptable, and rugged perennial grasses, and sometimes additional flowering plants. There are maintenance tasks associated with stormwater facilities.

Erosion:

The soil in the facility and in areas draining to the facility shall be inspected for erosion. Eroded areas shall be filled with soil or mulch and seeded with the approved seed mix for the location.

Sediment Accumulation & Clogging:

The accumulation of sediment within the facility may reduce its infiltration capacity and impair performance. The facility shall be inspected for accumulation of sediment and excessive sediment shall be removed with the area re-mulched and replanted as appropriate and necessary.

Outlet Structure Maintenance:

The facility outlet structure requires monitoring. Periodically, the orifice on the outlet pipe may clog with debris. Any found debris should be removed and appropriately disposed of off-site.

Debris & Litter:

Debris and litter should be removed monthly to maintain aesthetic appearance and public acceptance.

Plant Maintenance:

Healthy vegetation contributes to the optimal operation of the stormwater facility. Planting area maintenance tasks include the removal of accumulated leaves, litter, and plant debris as needed. During the first 1-2 years after planting, the facility should be monitored for invasive species and weeded as needed and appropriate.

Well-established facility vegetation should be mowed annually in the fall.

Snow Storage:

Snow shall not be dumped directly onto the facility.

Chlorides:

The stormwater facility is not suitable for treating chlorides. Chloride use on source surface areas tributary to the facility should be avoided if possible. In these locations, it would be prudent to eliminate or reduce application of chloride-containing deicing compounds, use alternative deicers, or apply clean sand as needed. Aggressive sweeping in these areas, along with pretreatment sumps and filter strips, will minimize the negative impact of the sand on the facility.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Inspect for erosion. Rake and redistribute/replenish any soil, rap, or mulch that has eroded		X					X
Inspect for standing water							X
Remove accumulated leaves, litter, and plant debris		X					X
Weed plant material		X					
Mow plant material					X		

Stormwater Management System Inspection & Maintenance Plan

LIGHT INDUSTRIAL FACILITY

Tax Map G, Lot 2
Littleworth Road
Dover, New Hampshire
Strafford County

MAY 2025

Prepared for:

SUMMIT LAND DEVELOPMENT, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

Owner of Record:

WESTFIELD, LLC
340 Central Avenue, Suite 202
Dover, New Hampshire 03820

Prepared By:

CIVILWORKS NEW ENGLAND
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks New England has prepared the following Stormwater Management System Inspection & Maintenance Plan for **Westfield, LLC.** The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will also help to minimize potential environmental impacts to the areas surrounding the developed site. By following the enclosed procedures, the property owners, and maintenance personnel will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

This plan also requires the Owner/Operator to prepare and implement a salt minimization plan to reduce salt usage on-site and ultimately within the watershed. This plan will allow the owner/operator to monitor and modify how much salt is needed, when it should be applied, where it needs to be applied, with the ultimate goal of reducing salt-use without compromising safety. It is expected that salt-use reduction will lead to long-term cost-savings as a result of purchasing less salt and reduced impacts on vegetation (e.g., landscaping) and corrosion of infrastructure.

The salt minimization plan should include the retention of a contractor who has completed the Green SnowPro Training course and obtained NHDES Salt Application Certification.

It is anticipated that this be a living document that will be updated at regular intervals (recommend updating annually in advance of the winter season in order to facilitate adjustments).

Owner:

Westfield, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party; transfer shall be documented to NH DES in writing.

Contact / Responsible Party:

Summit Land Development, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

Chad Kageleiry
Phone: (603) 749 2800
Email: chad@summitlanddev.com

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NHDES in writing.

Management Company:

Westfield, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

The contact information for the Management Party shall be kept current.

Inspection Schedule / Record Retention

Inspection frequency should, at a minimum, be in accordance with the New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NHDES. See the Inspection and Maintenance Plan for frequency requirements. Inspections shall include a photograph of each practice that is subject to the I&M requirements each time it is inspected. A copy of the completed Stormwater Management System's Inspection & Maintenance Log, inspection photographs, and Deicing Salt Quantity Use Log shall be maintained, kept on-site, and be made available to local, state, or federal regulators as applicable by law. All Inspection and Maintenance records must be provided to NHDES upon request and to the City of Dover Community Services Department annually before Dec 15th.

Stormwater Management System Components

The Stormwater Management System associated with the project is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Energy Dissipation Structures (Rip Rap)
- Bioretention Basin w/ Internal Storage Reservoir (ISR)
- Drain Manholes
- Pre-Treatment Structures
  - Pre-Treatment Swale
  - Deep Sump Catch Basins
  - Rain Guardian (Ferguson Waterworks)
- Pavement
- Litter / Trash Removal

Design elements are identified in the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

During maintenance activities, check for the presence of invasive plants and remove in a safe manner. Invasive plants shall be controlled to prevent them from reproducing, spreading, or re-growing. See the University of New Hampshire – Cooperative Extension's "Method for Disposing Non-Native Invasive Plants", included at the end of this manual, for guidance on the removal and disposal of invasive species.

Inspection and Maintenance Plan

By implementing the following procedures, the owners will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff.

PIPES/CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

OUTLET STRUCTURE(S):

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

ENERGY DISSIPATION STRUCTURES (RIP RAP):

- Inspect at least once a year.
- Inspect for sediment accumulation.
- Remove all debris immediately.
- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas, they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.

BIORETENTION BASIN W/ ISR:

- Inspection, by a **qualified professional**, of the Bioretention Basin at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection. If the Bioretention Basin systems do not drain within 72-hours following a rainfall event, a **qualified professional** should assess the condition and determine measures required to restore filtration practice (as applicable).
- Inlet and outlet pipes, inlet and outlet structures, containment structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Vegetation should be inspected at least annually and maintained in healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed at least once annually. The vegetation should be maintained in a healthy condition, as appropriate to the function of the facility and type of vegetation, to prevent the establishment of woody vegetation.
- Pretreatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually.

- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

DRAIN MANHOLES:

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6".
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

PRE-TREATMENT STRUCTURES:

PRE-TREATMENT SWALE:

- Inspect once per year.
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4" stand of vegetative growth.

DEEP SUMP CATCHBASINS:

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6".
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

RAIN GUARDIAN (FERGUSON WATERWORKS):

- Common maintenance needs include periodic removal of accumulated leaves (and other organic debris) and garbage from the internal grate and sediment and fine debris from the concrete and metal dry filter box. Contributing watersheds with high sediment concentrations may require up to monthly or twice monthly visits to satisfy maintenance needs.
- If sediment accumulates beyond an acceptable level in the system, it will be necessary to remove. This can be done by manual removal with a shovel or vacuum device. The filter screen can be cleaned manually through brushing or with pressurized water.

PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Clean periodically (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS:

- To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends that the Owner/Operator develop a Road Salt and Deicing Minimization Plan for the parking lots and roadways. The plan should develop the policies that the development will keep in place to minimize salt and other deicer use after the project has been completed. The plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. (See Deicing Salt Quantity Use Log).
- Use sand as primary agent for driveway and access way safety during ice and snow conditions.
- Minimize the use of salt during the winter.
- Use de-icing or anti-caking agents, added to enhance performance and application characteristics of sand mixtures, only as necessary and at minimum application rates.
- Recommend using a certified Winter Operator (Green SnowPro Trained) for applying de-icing agents.
- Monitor weather and apply de-icing agents based on weather conditions and temperatures.

ANTI-ICING AND SALT MINIMIZATION:

- Owner to develop a Road Salt and Deicing Minimization Plan.
- Provide a written policy that the “Development” will keep in place to minimize salt and other deicer use after the project has been completed.
- Use the attached form to track the use of salt and other deicers for each storm event and compiling salt use data annually.

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structure(s)	Annually	• Inspect once per year. • Inspect for clogging and sediment accumulation. • Remove all debris immediately and sediment accumulations ≥ 2 inches.	≥ 2 in. sediment Remove immediately
Energy Dissipation (ED) Structures (Rip Rap)	Annually	• Check for erosion • Check for displaced stones • Check for woody vegetation • Check for sediment accumulation	≥ 3 in. sediment Remove annually Replace/ reset Dislodged stones immediately
Bioretention Basin w/ ISR • Inlet/Outlet Piping • Pond • Sediment • Drawdown • Trash/Debris • Vegetation (Veg.) • Embankments	Bi-Annually “ “ Annually Periodically “ “ “ “	• Check for erosion, settlement, seepage, etc. • Check for sediment accum. in pond • Check drainage time • Check for and remove trash/debris • Maintain >75% veg. (pond & slopes) Maintain healthy stand of veg.	Repair immediately ≥ 2 in sediment >72 hours Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Drain Manholes	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 6” sediment depth or ½ sump depth Remove all floatables Remove immediately
Pre-Treatment Structure: Pre-Treatment Swale	Annually	• Check for sediment accumulation • Check for erosion • Ensure Swale is stabilized • Maintain healthy stand of veg., 4” minimum • Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind Mow twice per year Remove/Dispose of accordingly
Pre-Treatment Structure: Deep Sump Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 6” sediment depth or ½ sump depth Remove all floatables Remove immediately
Pre-Treatment Structure: Rain Guardian	Periodically	• Check for trash, debris, and accumulated sediments in grate • Check sediment level	Remove debris and veg. periodically ≥ 3 in. sediment depth shovel sediment
Pavement: • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As required 1 - 2 x’s Year Periodically	• Minimize use to prevent tracking issues • RECORD APPLICATION RATES • Sweep or vacuum to prevent tracking issues • Check for trash/debris	Sweep to prevent issues Minimize (as required) Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	• Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

The following pages contain a blank copy of the Stormwater Management System's Inspection & Maintenance Log and a Deicing Salt Quantity Use Log. These forms are provided to assist the owners with the inspection and maintenance of the aforementioned Stormwater Management System.

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance_____ Inspector:_____

System Component / BMP	Cleaning / Repair Needed (List Items / Comments)	Date of Cleaning/Repair	Performed By

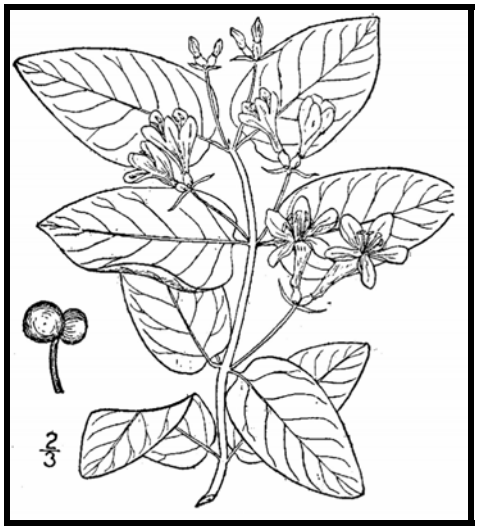
Deicing Salt Quantity Use Log

Date	Amount of Material Applied	Comments

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

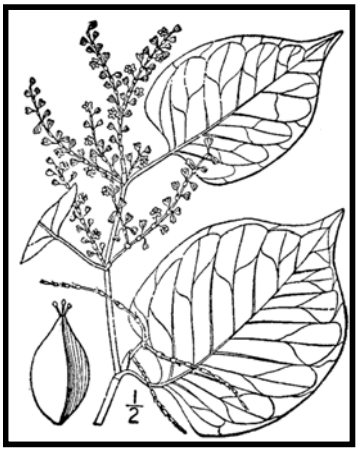
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
 </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

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SITE DEVELOPMENT DESIGN CRITERIA NARRATIVE
§153-14
STORMWATER MANAGEMENT
for
Summit Land Development, LLC & Westfield, LLC
LIGHT INDUSTRIAL FACILITY
Tax Map G, Lot 2, Littleworth Road

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. **The proposed development has been designed in accordance with City of Dover's Stormwater management regulations to include the treatment of stormwater runoff utilizing deep sump catch basins, a bio-retention pond with internal storage reservoir, and outlet protection.**

(b) Minimizing the contribution of a pollutant for which a water body is impaired to the maximum extent practicable (MEP). **The proposed development has been designed in accordance with City of Dover's Stormwater management regulations to include the treatment of stormwater runoff utilizing deep sump catch basins, a bio-retention pond with internal storage reservoir, and outlet protection.**

(c) Causing no discharge of runoff to an adjacent property in excess of runoff discharge in the existing developed or undeveloped condition. **The proposed stormwater BMPs will effectively mitigate stormwater runoff and there will not be an increase of stormwater runoff to abutting properties.**

(d) Encouraging the use of low-impact development (LID) strategies. **The project proposes the use of deep sump catch basins, a bio-retention pond with internal storage reservoir, and outlet protection.**

(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: **The project does not qualify for the redevelopment standards and will create greater than 4,000 square feet of impervious, as such, the stormwater standards apply.**

[1] The minimum protections and management standards shall apply to all projects. **The design incorporates these standards.**

[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. **The design incorporates these standards.**

[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. **The redevelopment standards are not applicable to this project.**

(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. **The project will require a NPDES CGP, and NH DES AoT permitting.**

(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. **The project complies with the City's design and stormwater requirements.**

[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. **The proposed project has been designed to limit the wetland buffer impacts to the greatest extent possible. The disturbance has been limited for the stormwater BMP construction and associated grading. There is no proposed work within a wetland.**

[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. **The proposed stormwater management is designed per City of Dover's requirements and the NHDES Stormwater Manual. LID strategies were implemented to the maximum extent practicable, however the on-site soils are not conducive for infiltration practices.**

[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. **The project incorporates stormwater BMPs designed in accordance with NH DES requirements. A stormwater I&M is also provided.**

[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). **The project does not propose the storage of the referenced materials onsite.**

[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. **The project does not propose the storage of deicing materials onsite.**

[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. **The project I&M manual directs the owner/operator to produce a salt minimization plan as part of the winter maintenance of the site.**

[8] Impervious surfaces for parking areas and roads shall be minimized to the extent possible. **The project design minimizes impervious areas to the extent practicable. All aspects of the design including the required number of parking spaces, drive aisle width, and turning areas were evaluated.**

[9] Stormwater runoff from new impervious surfaces shall be directed to a best management practice for flow mitigation, treatment and/or infiltration. **The proposed development has been designed in accordance with City of Dover's Stormwater management regulations to include the treatment of stormwater runoff utilizing deep sump catch basins, a bio-retention pond with internal storage reservoir, and outlet protection.**

(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. **The development includes 1.51 acres of new impervious area, of which 0.62 acres is roof area and .89 acres of pavement. The entire impervious area is being treated in a Wet Extended Detention Pond. The proposed stormwater mitigation system is able to provide the required pollutant removal per City of Dover standards.**

[2] Rainfall amount shall be based on current extreme precipitation estimates obtained from the Northeast Regional Climate Center. **The design incorporates NRCC precipitation amounts and the associated storm distribution data.**

[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. **The proposed design mitigates post-development peak rate runoff of the 2, 10 ,25, and 50-year storm events.**

[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. **The on-site soils are not conducive for infiltration practices. Stormwater runoff is not anticipated to cause any downstream flooding. The post development stormwater is routed to the existing drainage ways on-site, which discharge to the wetlands and stream channel under the railroad bed.**

[5] Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14. **NHDES rules preclude the use of infiltration practices therefore groundwater recharge practices are not proposed.**

[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. **Stormwater conveyance practices are designed to pass the 50-yr, 24-hour storm events without overtopping.**

[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. **The project is located outside of the 0.2 percent annual chance floodplain. The project does not propose permanent or temporary disturbance or alteration of terrain within the flood plain.**

[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. **The project has accounted for and provided drainage ways for offsite and upgradient stormwater runoff.**

[9] Seasonal high-water table elevations must be accounted for in all BMP design criteria. **Seasonal high-water table was accounted for in the design of a bio-retention pond with internal storage reservoir, and detention pond. If test pits are conducted for pavement or building design, a copy of the logs will be provided to Community Services.**

[10] Access for maintenance of stormwater facilities must be included as part of the design, where necessary. Access easements may be required. **Stormwater facilities for the proposed project are included on subject parcel and the property owner is responsible for maintenance of same.**

[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. **Acknowledged, a landscape plan has been prepared.**

(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. **The project does not meet redevelopment requirements, and this section is Not Applicable (N/A).**

[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. **N/A**

[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: **N/A**

> [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

[b] Implement other LID techniques on site to the MEP to provide mitigation and treatment for at least 50% of the entire site area.

[3] The owner/applicant may utilize off-site mitigation to meet the redevelopment requirements when the following standards have been met. **N/A**

[a] The owner/applicant shall demonstrate, to the satisfaction of the Planning Board, that on-site treatment has been implemented to the MEP.

[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.

[c] Off-site mitigation shall be equivalent to no less than the total area of pervious cover not treated on site.

[d] The owner/applicant shall submit a full design of the proposed off-site measures for review and approval.

[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.

(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: **The plan includes temporary and permanent sediment and erosion control practice notes and details meeting erosion control standards.**

[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. **The sediment and erosion control details provided in the plan set are designed in accordance with the NH Stormwater Manual.**

[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. **Acknowledged, a copy of the SWPPP inspections will be provided to Community Services.**

[3] Stripping of vegetation shall be done in a manner that minimizes soil erosion. Whenever practical, natural vegetation shall be retained, protected, or supplemented. **The Erosion Control Notes in the provided plan set indicate that the smallest practical area shall be disturbed during construction.**

[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. **The Erosion Control Notes outline measures that the contractor is to take to ensure that the smallest practical area shall be disturbed during construction.**

[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. The integrity of downstream drainage systems shall be maintained. **Direction to ensure that stormwater conveyance practices shall be stabilized prior to receiving stormwater runoff is included on the Erosion Control Notes sheet provided as part of this submittal.**

[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. **Construction scheduling and inspections will be discussed with Community Services at the required pre-construction meeting.**

[7] Perimeter site controls shall not be placed within wetland areas, stream channels or wetland buffers. The project proposed disturbance within a wetland buffer. **Erosion control measures are proposed along the downslope side of all construction and will be doubled up within wetland buffer to ensure protection to the onsite wetlands and abutting properties.**

[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. **The definitions of, and direction for, stabilization of the site are provided on the Erosion Control Notes sheet provided as part of this submittal.**

[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. **The erosion control inspection scheduling requirements are identified on the Erosion Control Notes sheet provided as part of this submittal.**

[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. **The NH DES AoT winter construction notes are identified on the Erosion Control Notes sheet provided as part of this submittal.**

[11] Special stabilization details shall be provided with the submission for any land disturbance on slopes equal to or steeper than 3:1. **Slopes greater than 3:1 require erosion control matting and/or armoring and those details are provided in the plan set.**

[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. **Temporary practice details identify the need to remove sediment and/or stabilize the area once the practices have been removed.**

[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 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. **The project does not propose the disturbance of greater than 10 acres of area. A temporary sediment trap detail, designed with a maximum contributing area of 5 acres, has been provided in accordance with NH DES AoT design requirements.**

[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. **Temporary sediment basin locations, if constructed, will be discussed with Community Services prior to the construction of the practices.**

(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. **Community Services access and inspection requirements will be discussed at the pre-construction meeting.**

[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. **The project notes provide direction to the contractor that they shall notify the design engineer and the Community Services Department as required.**

[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. **A letter can be provided if requested. If required, this requirement will be discussed at the pre-construction meeting.**

[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. **The project notes provide that the inspector shall be qualified and for all reports to be submitted to the Community Services Department.**

[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. **The project notes identify the owner as the responsible party for ensuring that stormwater management and erosion control measures are installed as approved.**

(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. **The SWMP is a comprehensive set of documents that include, at a minimum, a drainage report, plan set, and Stormwater I&M Manual. These documents each serve a role in presenting the necessary information to the appropriate audience. The information required in this section is provided within the SWMP documents.**

[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. **This information is provided within the Erosion Control Notes on the plan set.**

[b] Proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns. **This information is provided within the drainage report and the Pre/Post Development Watershed Plans.**

[c] Description of LID proposed measures. **This information is provided in the drainage report and throughout the plan set and details.**

[2] For projects requiring new development or redevelopment standards, a drainage report that contains the following items shall be submitted: **This information is provided in the drainage report and throughout the plan set and details.**

[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. **This information is provided in the drainage report and throughout the plan set and details.**

[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. **This information is provided in the drainage report and throughout the plan set and details.**

[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. **This information is provided in the drainage report and throughout the plan set and details.**

[d] Description of existing drainage patterns, receiving water bodies or drainage infrastructure and soil types for recharge potential. **This information is provided in the drainage report and throughout the plan set and details.**

[e] Watershed area limits, including any off-site and upstream areas contributing flow to shared drainage channels and/or infrastructure. **This information is provided in the drainage report and throughout the plan set and details.**

[f] Description of proposed changes in impervious cover areas and any changes in pre- and post-development drainage patterns. **This information is provided in the drainage report and throughout the plan set and details.**

[g] Methods and assumptions used to calculate pre- and post-development runoff volume, peak discharge, and discharge velocity for the specified design storm events. **This information is provided in the drainage report and throughout the plan set and details.**

[h] Methods and assumptions used to calculate the pollutant load removal. **This information is provided in the drainage report and throughout the plan set and details.**

[i] Description of LID measures that are proposed to limit the development footprint, preserve existing vegetation and mimic existing hydrology to the extent feasible. **This information is provided in the drainage report and throughout the plan set and details.**

[j] If not used, provide rationale why LID measures are not practical for the site. **N/A**

[k] Describe measures and calculations for proposed practices used to achieve no net increase in runoff volumes leaving the site. **This information is provided in the drainage report and throughout the plan set and details.**

[l] Provide calculations for the infiltration or exfiltration system. **This information is provided in the drainage report and throughout the plan set and details.**

[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. **Stormwater runoff is not anticipated to cause any downstream flooding. The post development stormwater is routed to the existing drainage ways on-site, which discharge to the wetlands and stream channel that passes under the railroad bed.**

[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. **This information is provided in the drainage report and throughout the plan set and details.**

[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. **N/A**

[p] Proposed schedule for the inspection and maintenance of all erosion control measures on site prior to achieving final site stabilization. **This information is provided in the drainage report and throughout the plan set and details.**

[q] Describe procedures for removing temporary erosion control measures and removal of accumulated sediment captured by such measures. **This information is provided in the drainage report and throughout the plan set and details.**

[r] Any other specific study, calculation, or investigation as requested by the City. **Additional information is provided as requested and may include traffic studies, structural designs, septic/sewer designs, geotechnical reports, etc. These documents are provided on an as needed basis and as requested by the City.**

[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. **The Stormwater I&M Manual includes the implementation of a salt minimization plan.**

[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. **A Stormwater I&M Manual is provided as part of the submission.**

[u] Provide copies of pertinent state and federal permits. **Copies of permits will be provided to the City, as applicable.**

(g) Long-term operation and maintenance. The owner shall be responsible for continued inspection and maintenance requirements. **An I&M Manual that identifies the owner's responsibilities has been provided as a part of the submission.**

[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. **The Owner, and Responsible Party are identified in the I&M Manual.**

[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. **Inspection requirements and maintenance thresholds are identified in the I&M Manual.**

[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. **The I&M Manual requires the use of a Green SnowPro contractor.**

[d] Deicing log to track amount and type of deicing material applied. **The I&M Manual requires the implementation of a salt minimization plan that also requires the owner or operator to track salt usage onsite through a quantity usage log.**

[e] A site plan clearly identifying the locations of all stormwater practices to be inspected and maintained. **The approved Grading and Drainage Plan is included in the I&M Manual.**

[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. **The I&M Manual identifies this requirement.**

[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. **Not Applicable.**

DRAINAGE ANALYSIS

LIGHT INDUSTRIAL FACILITY
TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

MAY 2025
REVISED: JULY 2025

Prepared For:

Summit Land Development, LLC
340 Central Ave Suite 202
Dover, NH 03820

Prepared By:

Civilworks New England
PO Box 1166
181 Watson Road
Dover, NH 03821

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1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel located on Littleworth Road, Dover, NH. The 5.11± acre lot is identified as the Tax Map G, Lot 2. The lot is currently undeveloped. The ground cover primarily consists of grass and pavement and is bounded by commercial/industrial lots to the northwest and east, Littleworth Road to the North, and the Boston and Maine Railroad to the south. The 5.11± acre subject parcel is part of a larger, more complex subdivision of land. As such, this analysis incorporates the larger subdivision such that the overall development of the original tract of land will be analyzed in accordance with the NHDES AoT and City of Dover requirements.

The project proposes the construction of a 26,880-sf commercial/industrial building with site improvements associated with site access, driveways, paved parking, grading, drainage, and utilities. The proposed building incorporates seven (7) catch basins, one roof drain, and one bio retention pond. The proposed stormwater system captures, treats, and stores the stormwater runoff from the site and redirects to existing discharge points. The proposed stormwater drainage structures will be maintained by the project proponent as outlined within the Stormwater Management System Inspection & Maintenance Manual (Stormwater I&M Manual) in Appendix C.

To effectively analyze the pre-development subject parcel (to analyze the overall development), 59.66± acres (on and offsite areas) was analyzed as three watersheds, A, B, and C. Watershed C was then further divided into (5) subcatchments that are routed to the same discharge point, C. Watershed A drains to wetlands along the northwest side of the site, Watershed B drains off the southwest side of the site, and Watershed C drains into wetlands on the southern side of the site along the Boston and Maine Railroad. Soil characteristics were obtained utilizing web soil survey and information from Bruce Gilday, Certified Soil Scientist. The area is a mix of HSG B, C, and D soils. Topography information was obtained from an on-site survey.

For the post development, the overall area of the three watersheds is 59.70± acres and includes an additional 0.04± acres in Watershed C. This area accounts for the offsite area of the access road that will be captured by the proposed stormwater BMP's as part of this project. The site is further divided into twenty-three (23) subcatchments that are routed to the same discharge points A, B, and C, as defined in the pre-development model. This analysis indicates that the proposed stormwater measures and stormwater management plan will effectively treat and mitigate stormwater runoff in general accordance with The City of Dover's stormwater regulations. The proposed development of the site in conjunction with the implementation of the Stormwater I&M Manual will have a minimal impact on the watershed.

2.0 DRAINAGE ANALYSIS

A comprehensive hydrologic study of this site has been performed utilizing nationally recognized runoff estimating techniques developed by the USDA, Soil Conservation Services (SCS). The technique and runoff models are described in various SCS publications and references as follows:

"Stormwater Management and Erosion Sediment Control Handbook for Urban and Developing Areas in New Hampshire"

"New Hampshire Stormwater Manual Volume 2 - Post-Construction Best Management Practices Selection & Design"

"Civil Engineering Reference Manual, Fifth Edition"

"Open-Channel Hydraulics" Chow.

"Stormwater Modeling System" HydroCAD Ver. 10.10

2.1 DRAINAGE DESIGN PARAMETERS

A brief review of the procedures and parameters used in the drainage study follows:

2.1.1 Watersheds

The watershed was delineated using on site topographic and as built survey data field located by McEneaney Survey Associates of New England.

2.1.2 Soils

Soil types were determined utilizing the NRCS Web Soil Survey (WSS) mapping tool at http://websoilsurvey.nrcs.usda.gov and information from Bruce Gilday, Certified Soil Scientist. The soil survey area is Strafford County, NH, the soil survey data is Version 24, dated Aug 22nd, 2023 and the aerial images are dated June 19th to September 20th, 2020.

Hydrologic Drainage Class B:

Map Unit Symbol	Map Unit Name
32B	Boxford
62B	Charlton

Hydrologic Drainage Class C:

Map Unit Symbol	Map Unit Name
232B	Buxton
953B	Scantic

Hydrologic Drainage Class D:

Map Unit Symbol	Map Unit Name
233B/P	Scantic

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center were utilized in this analysis. The analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 3.60", 5.44", 6.88", and 8.21" rainfall depths respectively.

2.1.4 Runoff Curve Numbers

The SCS runoff curve numbers were used and are summarized within each sub-catchment drainage summary in Appendix A.

2.2 EXISTING CONDITIONS

For the purposes of this analysis, the subject parcel was analyzed as a single watershed that discharges to an abutting property in the predevelopment condition.

2.2.1 Table A – Existing Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Pre-Development Volume (af)**	**Pre Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.201	1.68	3.62	5.17	6.56
B	0.196	1.44	2.90	4.03	5.04
C	7.280	29.83	55.33	74.68	91.95

2.3 DEVELOPED CONDITIONS

The post development model analyzes runoff to the post development discharge point, which is the wetlands located along the Boston and Maine Railroad.

2.3.1 Table B – Developed Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Post-Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.062	0.55	1.01	1.37	1.68
B	0.157	1.24	2.35	3.21	3.97
C	7.976	28.56	54.42	73.90	90.87

2.4 HYDROLOGIC COMPARISON

The analysis indicates that the proposed project will have negligible impact on the watershed.

2.4.1 Table C – Pre/Post Development Comparison (2, 10, 25, and 50-year storm events)

Watershed	Pre/**Post-Development Volume (af)**	Pre/**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.201/**0.062**	1.68/**0.55**	3.62/**1.01**	5.17/**1.37**	6.56/**1.68**
B	0.196/**0.157**	1.44/**1.24**	2.90/**2.35**	4.03/**3.21**	5.04/**3.97**
C	7.280/**7.976**	29.83/**28.56**	55.33/**54.42**	74.68/**73.90**	91.95/**90.87**

2.5 STORMWATER DESIGN

The project incorporates best management practices to mitigate runoff as well as treat and convey stormwater.

2.5.1 Stormwater Best Management Practices

The proposed project incorporates seven (7) catch basins, one roof drain, and one bio retention pond for pre-treatment. See Appendix B-1 for Best Management Practice design forms.

2.5.2 Pollutant Removal

The development includes 1.47 acres of new impervious area, of which 0.62 acres is roof and 0.85 acres is pavement. The entire impervious area is being treated in a Bio-Retention Pond with ISR, an approved NHDES Best Management Practice. The proposed stormwater mitigation system is able to provide the required pollutant removal per City of Dover standards.

The stormwater management system utilized a Bio-Retention with ISR to achieve 90% TSS, 75% TN, & 76% TP pollutant removal. Below are the NHDES published pollutant removal efficiencies. See Appendix B-2 for additional information.

	TSS	TN	TP
Bio-Retention with ISR:	90%	75%	76%

2.5.3 Outlet Protection

NHDES BMP outlet protection has been sized to accommodate the 50-year, 24-hour storm event. The proposed rip-rap applications for PDMH5 and BR1 shall

consist of a minimum stone of d50=6” with a stone layer thickness of 12” (min.) on a fabric layer or a 6” thick (min.) gravel base. The proposed rip-rap application for PCB7 shall consist of a minimum stone of d50=9” with a stone layer thickness of 18” (min.) on a fabric layer or a 6” thick (min.) gravel base. See Appendix B-3 for the design sheets and supporting data and the plan set for rip rap locations and the drainage details for additional information.

APPENDIX A

HYDROLOGIC CALCULATIONS

Extreme Precipitation in New York & New England

An Interactive Web Tool for Extreme Precipitation Analysis

About this Project | Data & Products | Daily Monitoring | Documentation

Select Product

- Extreme Precipitation Tables - HTML
- Extreme Precipitation Tables - Text/CSV
- Partial Duration Series - by Point
- Partial Duration Series - by Station
- Distribution Curves - Graphical
- Distribution Curves - Text/TBL
- Intensity Frequency Duration Graphs
- Precipitation Frequency Duration Graphs
- GIS Data Files
- Regional/State Maps

Select Location *Double-click map to place a marker, or enter address or latitude/longitude.*

Hybrid | Map | Satellite | Terrain

Locate by Address →

Locate by Lat/Lon 43.18(°N -70.90 °W →

Locate by State/County

Select Options

Smoothing	Delivery
Yes	Popup

Submit

Version 2.0 Copyright 2010-2022

This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) | Natural Resources Conservation Service (NRCS)

Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.187 degrees North
Longitude	70.909 degrees West
Elevation	30 feet
Date/Time	Sat May 24 2025 10:47:01 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	1.99	2.60	2.85	**1yr**	2.30	2.74	3.14	3.87	4.44	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.28	**2yr**	0.87	1.17	1.50	1.91	2.44	3.13	3.48	**2yr**	2.77	3.35	3.84	4.58	5.21	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.06	3.96	4.46	**5yr**	3.50	4.29	4.91	5.78	6.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.84	**10yr**	1.22	1.69	2.18	2.82	3.65	4.73	5.38	**10yr**	4.18	5.17	5.91	6.90	7.76	**10yr**
25yr	0.46	0.74	0.94	1.29	1.72	2.26	**25yr**	1.48	2.09	2.69	3.51	4.59	5.98	6.90	**25yr**	5.29	6.64	7.55	8.72	9.75	**25yr**
50yr	0.51	0.83	1.06	1.48	1.99	2.66	**50yr**	1.72	2.45	3.17	4.17	5.47	7.14	8.33	**50yr**	6.32	8.01	9.09	10.42	11.59	**50yr**
100yr	0.58	0.93	1.20	1.70	2.31	3.11	**100yr**	2.00	2.88	3.73	4.94	6.51	8.54	10.07	**100yr**	7.56	9.68	10.95	12.46	13.79	**100yr**
200yr	0.64	1.04	1.35	1.94	2.69	3.66	**200yr**	2.32	3.39	4.41	5.87	7.76	10.22	12.17	**200yr**	9.04	11.70	13.20	14.90	16.41	**200yr**
500yr	0.75	1.24	1.61	2.34	3.28	4.51	**500yr**	2.83	4.20	5.47	7.34	9.78	12.95	15.63	**500yr**	11.46	15.03	16.90	18.88	20.67	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.91	1.25	1.55	2.05	2.48	**1yr**	1.81	2.38	2.93	3.36	4.06	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.15	1.36	1.83	2.36	3.04	3.39	**2yr**	2.69	3.26	3.73	4.45	5.06	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.70	4.11	**5yr**	3.27	3.96	4.58	5.40	6.10	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.57	1.82	2.45	3.13	4.26	4.77	**10yr**	3.77	4.59	5.31	6.23	7.00	**10yr**
25yr	0.44	0.67	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.85	3.66	5.05	5.79	**25yr**	4.47	5.57	6.47	7.55	8.41	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.19	**50yr**	1.52	2.14	2.36	3.21	4.12	5.79	6.68	**50yr**	5.12	6.43	7.53	8.71	9.65	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.51	**100yr**	1.74	2.46	2.64	3.59	4.60	6.63	7.71	**100yr**	5.86	7.41	8.75	10.06	11.04	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.88	**200yr**	1.99	2.81	2.94	4.02	5.14	7.59	8.90	**200yr**	6.71	8.56	10.17	11.62	12.67	**200yr**
500yr	0.70	1.04	1.34	1.94	2.76	3.47	**500yr**	2.38	3.39	3.41	4.67	5.99	9.03	10.74	**500yr**	7.99	10.33	12.41	14.08	15.12	**500yr**

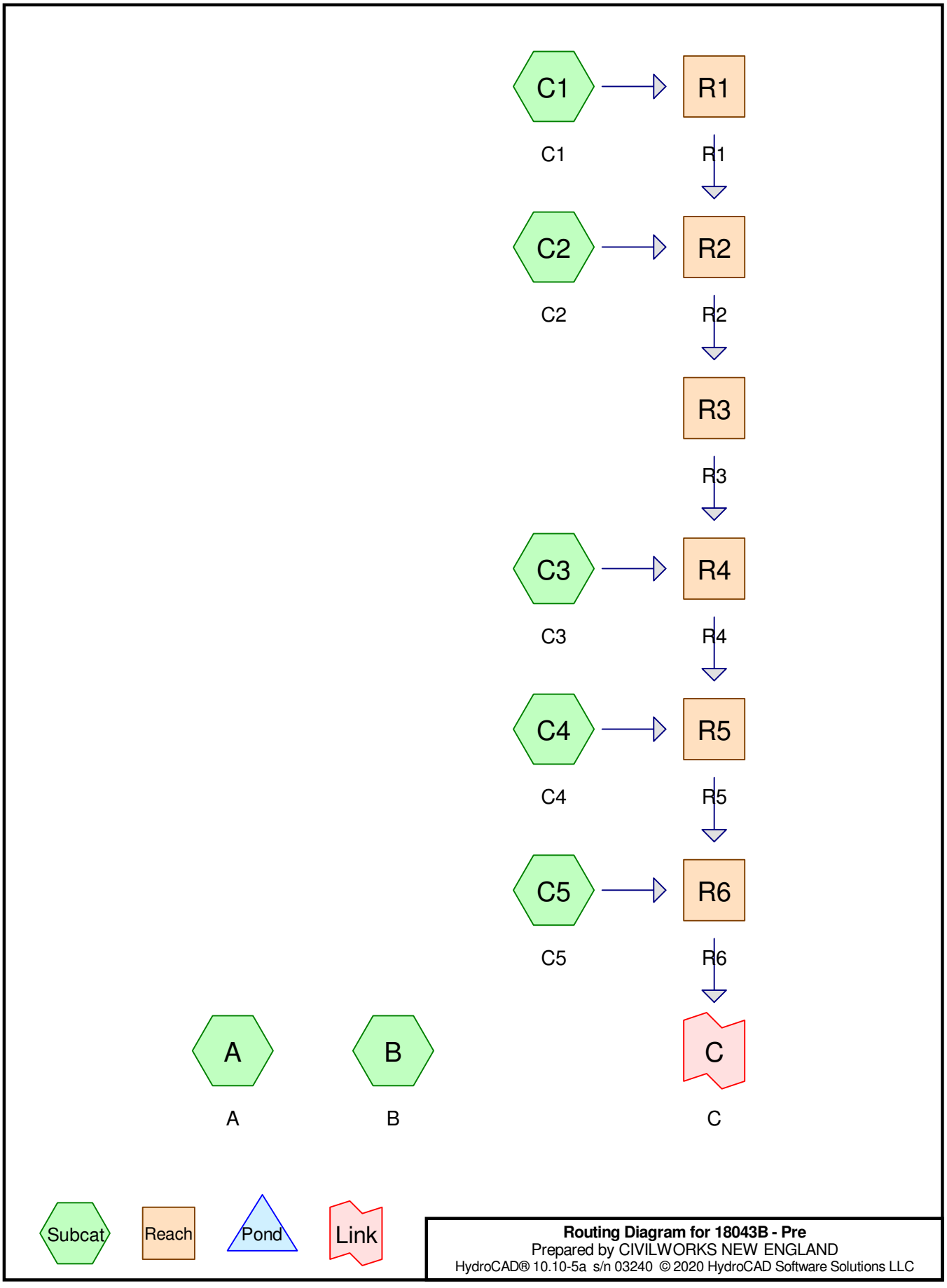
Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.23	1.74	2.21	2.83	3.05	**1yr**	2.50	2.94	3.37	4.17	4.75	**1yr**
2yr	0.33	0.51	0.62	0.84	1.04	1.24	**2yr**	0.90	1.22	1.47	1.95	2.50	3.25	3.59	**2yr**	2.87	3.46	3.97	4.72	5.39	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.54	1.85	2.49	3.19	4.22	4.80	**5yr**	3.73	4.62	5.24	6.18	6.95	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.91	**10yr**	1.35	1.87	2.23	3.04	3.84	5.19	5.99	**10yr**	4.59	5.76	6.57	7.58	8.46	**10yr**
25yr	0.55	0.84	1.05	1.49	1.96	2.47	**25yr**	1.70	2.41	2.87	3.95	4.93	6.91	8.03	**25yr**	6.11	7.72	8.76	9.97	11.02	**25yr**
50yr	0.64	0.97	1.21	1.74	2.34	2.98	**50yr**	2.02	2.91	3.48	4.81	5.97	8.51	10.05	**50yr**	7.54	9.66	10.91	12.26	13.47	**50yr**
100yr	0.74	1.12	1.40	2.03	2.78	3.59	**100yr**	2.40	3.51	4.21	5.88	7.25	10.50	12.57	**100yr**	9.29	12.09	13.58	15.09	16.47	**100yr**
200yr	0.86	1.29	1.64	2.37	3.31	4.35	**200yr**	2.85	4.25	5.12	7.18	8.79	12.99	15.75	**200yr**	11.50	15.15	16.91	18.56	20.18	**200yr**
500yr	1.05	1.56	2.01	2.91	4.14	5.58	**500yr**	3.58	5.46	6.61	9.39	11.36	17.24	21.22	**500yr**	15.26	20.41	22.62	24.44	26.40	**500yr**

Powered by ACIS Northeast Regional Climate Center

A – 1

EXISTING WATERSHEDS



Routing Diagram for 18043B - Pre
Prepared by CIVILWORKS NEW ENGLAND
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.408	61	Pasture/grassland/range, Good, HSG B (A, B, C1, C2, C4)
14.914	74	Pasture/grassland/range, Good, HSG C (A, B, C1, C2, C3, C4, C5)
41.180	80	Pasture/grassland/range, Good, HSG D (B, C1, C2, C3, C4, C5)
0.121	98	Paved parking, HSG B (A, C1)
0.033	98	Paved parking, HSG C (A)
59.657	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.530	HSG B	A, B, C1, C2, C4
14.947	HSG C	A, B, C1, C2, C3, C4, C5
41.180	HSG D	B, C1, C2, C3, C4, C5
0.000	Other	
59.657		**TOTAL AREA**

A – 1

NODE LISTING – 2-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=103,722 sf 6.17% Impervious Runoff Depth=1.01"
Flow Length=561' Tc=11.1 min CN=69 Runoff=1.68 cfs 0.201 af

Subcatchment B: B Runoff Area=86,136 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=724' Tc=16.0 min CN=72 Runoff=1.44 cfs 0.196 af

Subcatchment C1: C1 Runoff Area=161,998 sf 0.20% Impervious Runoff Depth=1.51"
Flow Length=532' Tc=19.6 min CN=77 Runoff=3.26 cfs 0.466 af

Subcatchment C2: C2 Runoff Area=107,031 sf 0.00% Impervious Runoff Depth=1.51"
Flow Length=813' Tc=21.3 min CN=77 Runoff=2.06 cfs 0.308 af

Subcatchment C3: C3 Runoff Area=282,711 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=1,331' Tc=27.6 min CN=78 Runoff=5.03 cfs 0.851 af

Subcatchment C4: C4 Runoff Area=291,380 sf 0.00% Impervious Runoff Depth=1.31"
Flow Length=1,071' Tc=25.5 min CN=74 Runoff=4.37 cfs 0.730 af

Subcatchment C5: C5 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=1,701' Tc=55.9 min CN=79 Runoff=19.99 cfs 4.924 af

Reach R1: R1 Avg. Flow Depth=0.57' Max Vel=1.98 fps Inflow=3.26 cfs 0.466 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=3.19 cfs 0.466 af

Reach R2: R2 Avg. Flow Depth=0.67' Max Vel=1.92 fps Inflow=5.25 cfs 0.775 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=5.17 cfs 0.775 af

Reach R3: R3 Avg. Flow Depth=0.71' Max Vel=1.68 fps Inflow=5.17 cfs 0.775 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=5.05 cfs 0.775 af

Reach R4: R4 Avg. Flow Depth=0.90' Max Vel=2.37 fps Inflow=10.08 cfs 1.626 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=10.07 cfs 1.626 af

Reach R5: R5 Avg. Flow Depth=1.08' Max Vel=1.74 fps Inflow=14.43 cfs 2.356 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=11.08 cfs 2.356 af

Reach R6: R6 Avg. Flow Depth=1.61' Max Vel=2.58 fps Inflow=29.92 cfs 7.280 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=29.83 cfs 7.280 af

Link C: C Inflow=29.83 cfs 7.280 af
Primary=29.83 cfs 7.280 af

Total Runoff Area = 59.657 ac Runoff Volume = 7.677 af Average Runoff Depth = 1.54"
99.74% Pervious = 59.503 ac 0.26% Impervious = 0.154 ac

A – 1

NODE LISTING – 10-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=103,722 sf 6.17% Impervious Runoff Depth=2.28"
Flow Length=561' Tc=11.1 min CN=69 Runoff=3.62 cfs 0.453 af

Subcatchment B: B Runoff Area=86,136 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=724' Tc=16.0 min CN=72 Runoff=2.90 cfs 0.419 af

Subcatchment C1: C1 Runoff Area=161,998 sf 0.20% Impervious Runoff Depth=3.00"
Flow Length=532' Tc=19.6 min CN=77 Runoff=5.92 cfs 0.928 af

Subcatchment C2: C2 Runoff Area=107,031 sf 0.00% Impervious Runoff Depth=3.00"
Flow Length=813' Tc=21.3 min CN=77 Runoff=3.75 cfs 0.613 af

Subcatchment C3: C3 Runoff Area=282,711 sf 0.00% Impervious Runoff Depth=3.09"
Flow Length=1,331' Tc=27.6 min CN=78 Runoff=9.06 cfs 1.671 af

Subcatchment C4: C4 Runoff Area=291,380 sf 0.00% Impervious Runoff Depth=2.72"
Flow Length=1,071' Tc=25.5 min CN=74 Runoff=8.50 cfs 1.516 af

Subcatchment C5: C5 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=3.18"
Flow Length=1,701' Tc=55.9 min CN=79 Runoff=36.20 cfs 9.537 af

Reach R1: R1 Avg. Flow Depth=0.76' Max Vel=2.37 fps Inflow=5.92 cfs 0.928 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=5.83 cfs 0.928 af

Reach R2: R2 Avg. Flow Depth=0.88' Max Vel=2.30 fps Inflow=9.58 cfs 1.542 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=9.48 cfs 1.542 af

Reach R3: R3 Avg. Flow Depth=0.95' Max Vel=2.02 fps Inflow=9.48 cfs 1.542 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=9.34 cfs 1.542 af

Reach R4: R4 Avg. Flow Depth=1.19' Max Vel=2.84 fps Inflow=18.38 cfs 3.212 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=18.37 cfs 3.212 af

Reach R5: R5 Avg. Flow Depth=1.50' Max Vel=2.15 fps Inflow=26.87 cfs 4.728 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=22.20 cfs 4.728 af

Reach R6: R6 Avg. Flow Depth=2.16' Max Vel=3.09 fps Inflow=55.53 cfs 14.265 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=55.33 cfs 14.265 af

Link C: C Inflow=55.33 cfs 14.265 af
Primary=55.33 cfs 14.265 af

Total Runoff Area = 59.657 ac Runoff Volume = 15.137 af Average Runoff Depth = 3.04"
99.74% Pervious = 59.503 ac 0.26% Impervious = 0.154 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

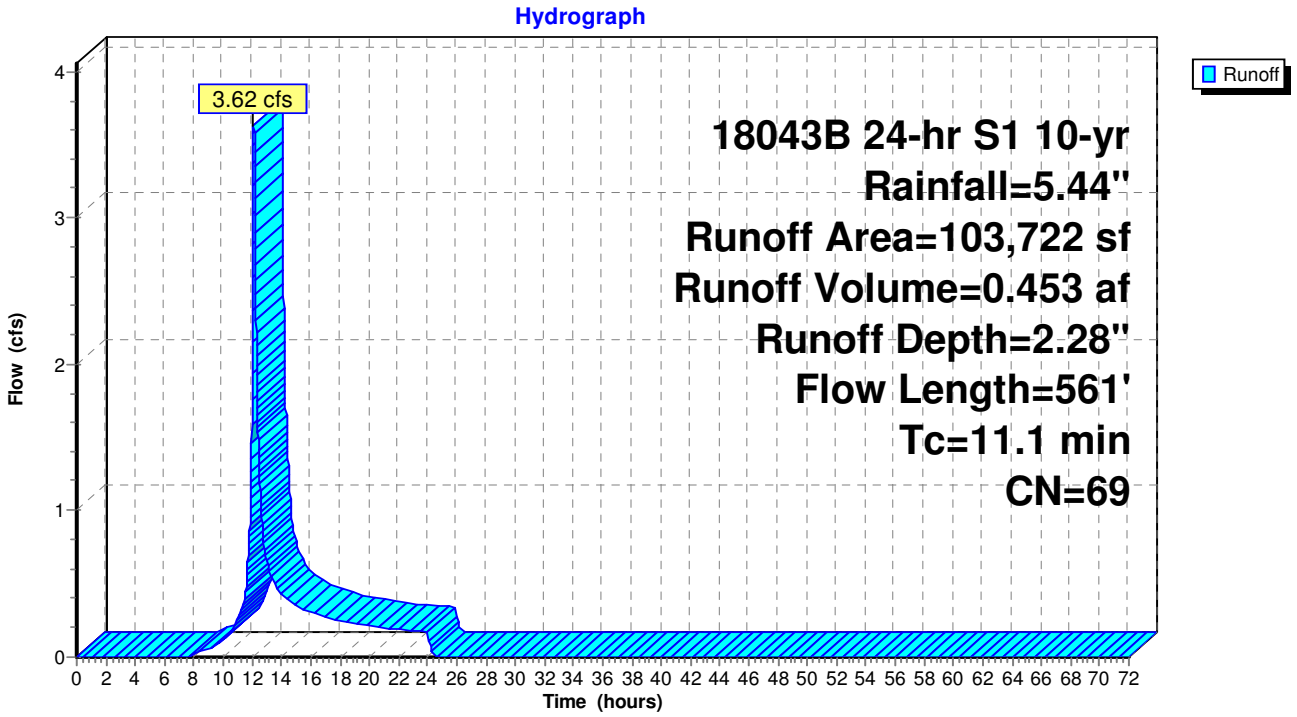
Runoff = 3.62 cfs @ 12.10 hrs, Volume= 0.453 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
54,650	61	Pasture/grassland/range, Good, HSG B
4,960	98	Paved parking, HSG B
42,673	74	Pasture/grassland/range, Good, HSG C
1,439	98	Paved parking, HSG C
103,722	69	Weighted Average
97,323		93.83% Pervious Area
6,399		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0670	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.4	159	0.0760	1.93		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	235	0.0130	3.37	8.99	**Parabolic Channel,** W=4.00' D=1.00' Area=2.7 sf Perim=4.6' n= 0.035 Earth, dense weeds
0.1	29	0.0070	4.11	3.23	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	38	0.0210	4.28	11.42	**Parabolic Channel,** W=4.00' D=1.00' Area=2.7 sf Perim=4.6' n= 0.035 Earth, dense weeds
11.1	561	Total			

Subcatchment A: A



Summary for Subcatchment B: B

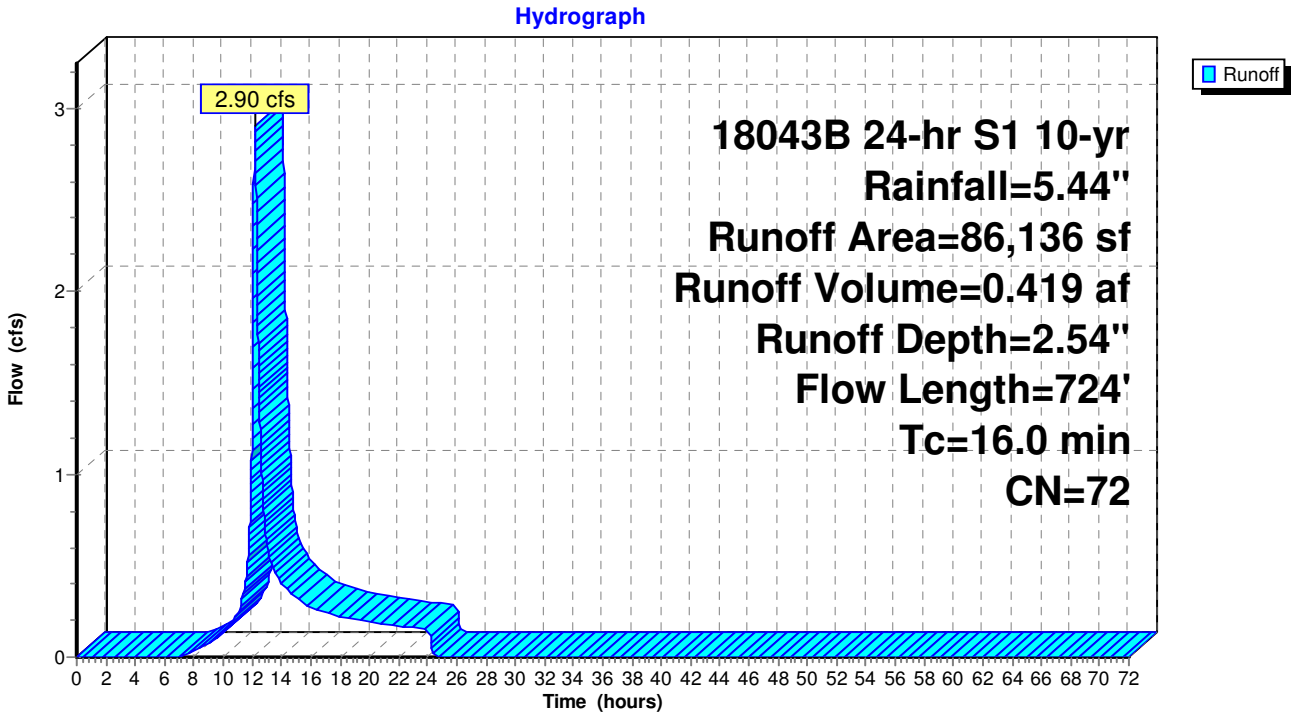
Runoff = 2.90 cfs @ 12.18 hrs, Volume= 0.419 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
30,996	61	Pasture/grassland/range, Good, HSG B
18,194	74	Pasture/grassland/range, Good, HSG C
36,946	80	Pasture/grassland/range, Good, HSG D
86,136	72	Weighted Average
86,136		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0280	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.2	95	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	339	0.0120	3.39	13.57	**Parabolic Channel,** W=6.00' D=1.00' Area=4.0 sf Perim=6.4' n= 0.035 Earth, dense weeds
1.3	190	0.0060	2.40	9.60	**Parabolic Channel,** W=6.00' D=1.00' Area=4.0 sf Perim=6.4' n= 0.035 Earth, dense weeds
16.0	724	Total			

Subcatchment B: B



Summary for Subcatchment C1: C1

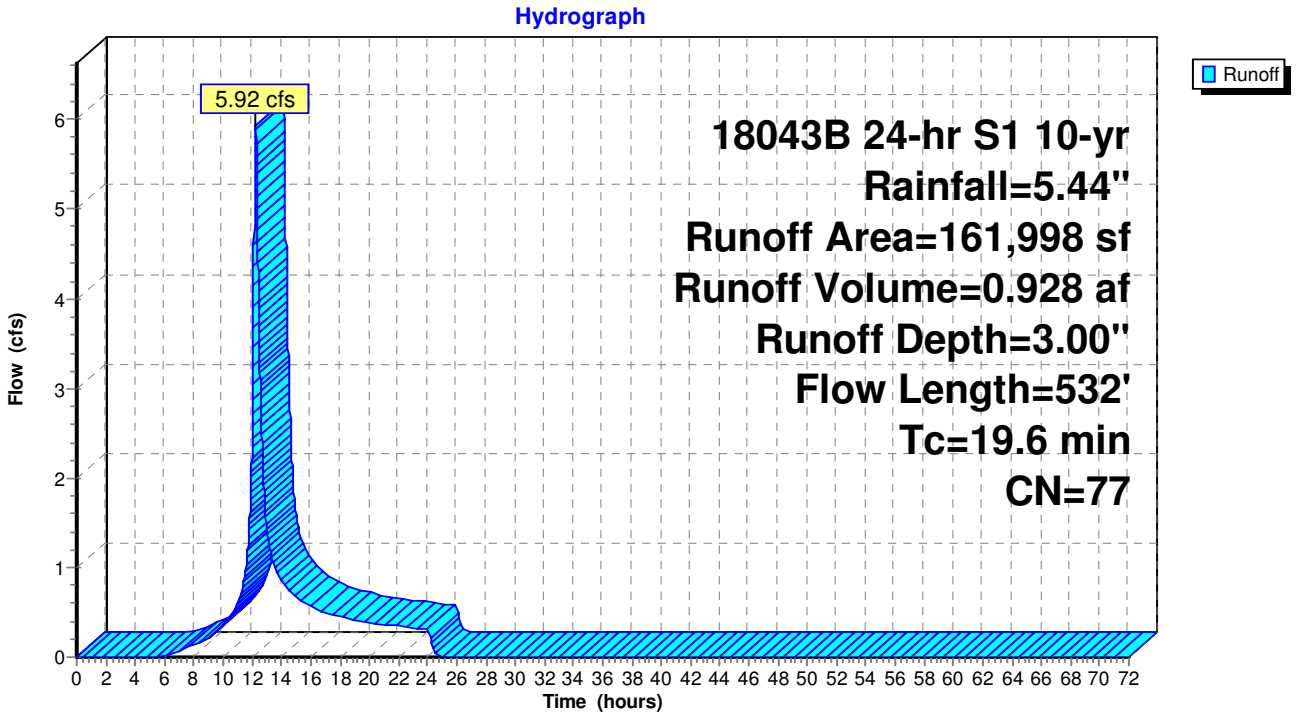
Runoff = 5.92 cfs @ 12.22 hrs, Volume= 0.928 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
15,716	61	Pasture/grassland/range, Good, HSG B
323	98	Paved parking, HSG B
39,782	74	Pasture/grassland/range, Good, HSG C
106,177	80	Pasture/grassland/range, Good, HSG D
161,998	77	Weighted Average
161,675		99.80% Pervious Area
323		0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	100	0.0400	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.3	178	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.0	240	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	14	0.0110	4.44	31.98	**Parabolic Channel,** W=6.00' D=1.80' Area=7.2 sf Perim=7.2' n= 0.035 Earth, dense weeds
19.6	532	Total			

Subcatchment C1: C1



Summary for Subcatchment C2: C2

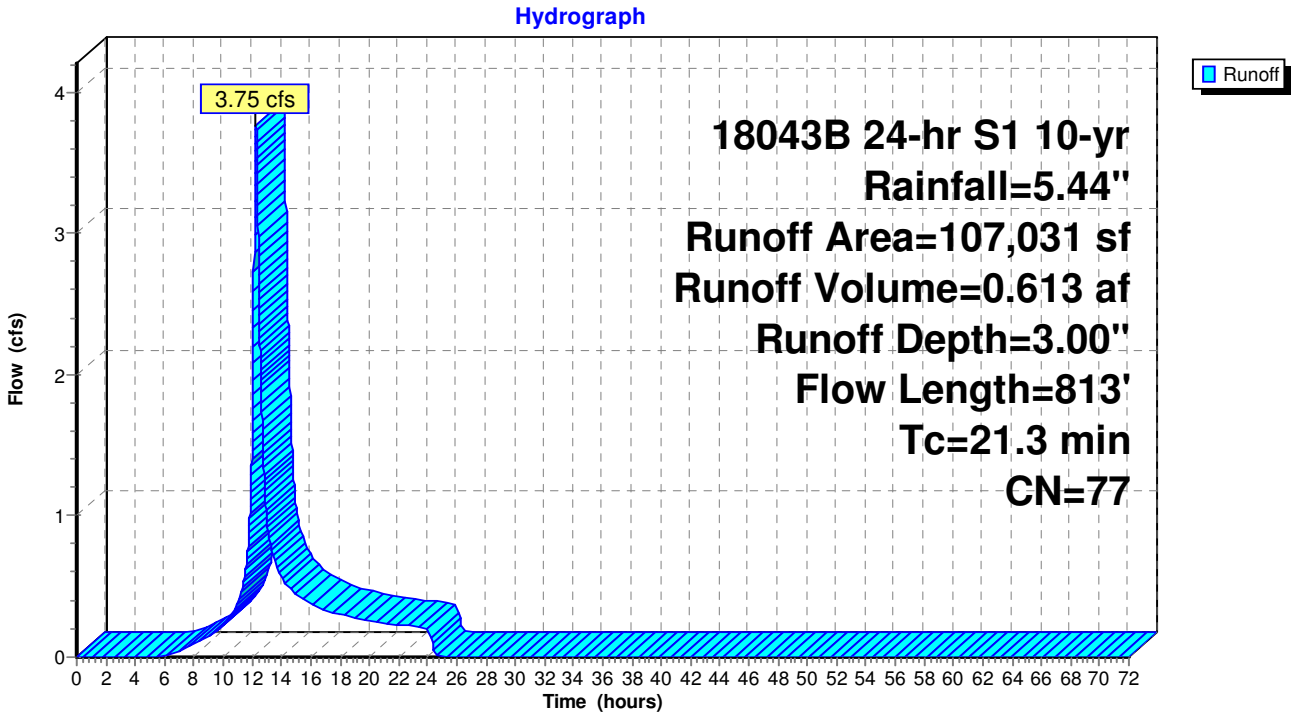
Runoff = 3.75 cfs @ 12.24 hrs, Volume= 0.613 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
3,735	61	Pasture/grassland/range, Good, HSG B
46,389	74	Pasture/grassland/range, Good, HSG C
56,907	80	Pasture/grassland/range, Good, HSG D
107,031	77	Weighted Average
107,031		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0370	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.9	165	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.7	171	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.5	167	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	210	0.0130	5.02	45.16	**Parabolic Channel,** W=7.50' D=1.80' Area=9.0 sf Perim=8.5' n= 0.035 Earth, dense weeds
21.3	813	Total			

Subcatchment C2: C2



Summary for Subcatchment C3: C3

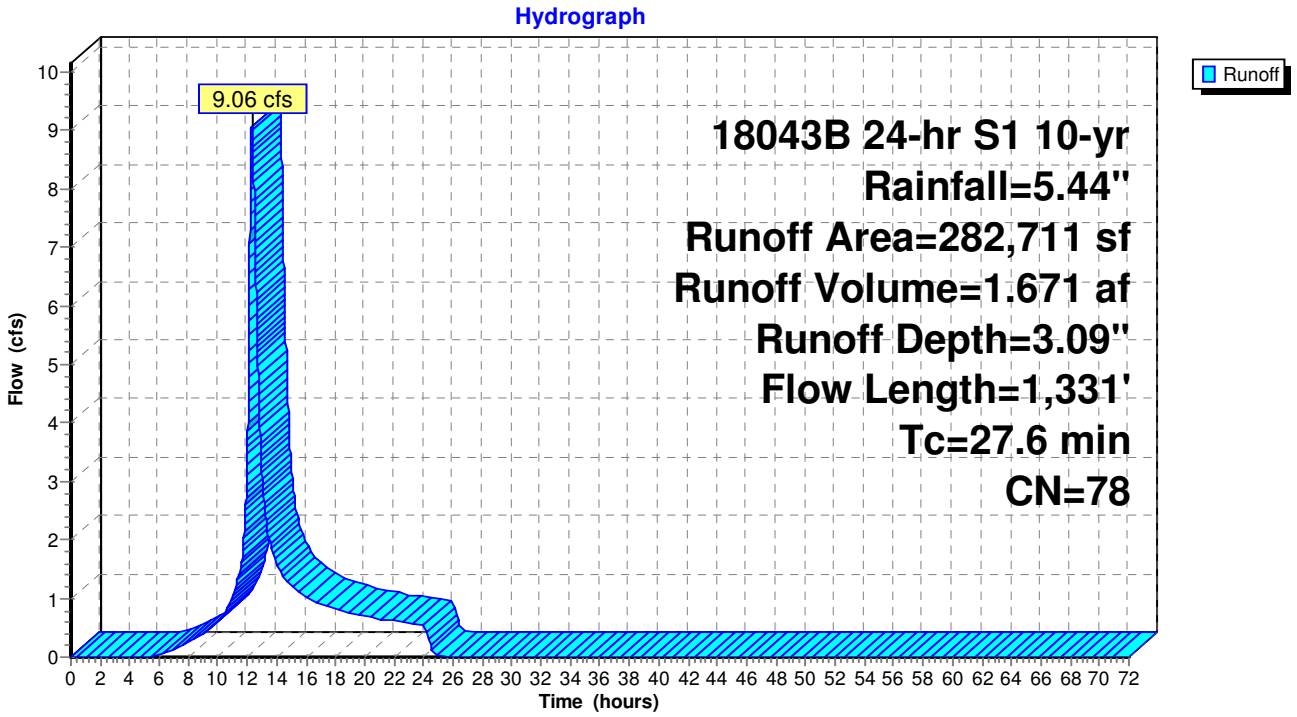
Runoff = 9.06 cfs @ 12.33 hrs, Volume= 1.671 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
75,438	74	Pasture/grassland/range, Good, HSG C
207,273	80	Pasture/grassland/range, Good, HSG D
282,711	78	Weighted Average
282,711		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0280	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.2	91	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	189	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	117	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	205	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	629	0.0050	3.22	38.63	**Parabolic Channel,** W=10.00' D=1.80' Area=12.0 sf Perim=10.8' n= 0.035 Earth, dense weeds
27.6	1,331	Total			

Subcatchment C3: C3



Summary for Subcatchment C4: C4

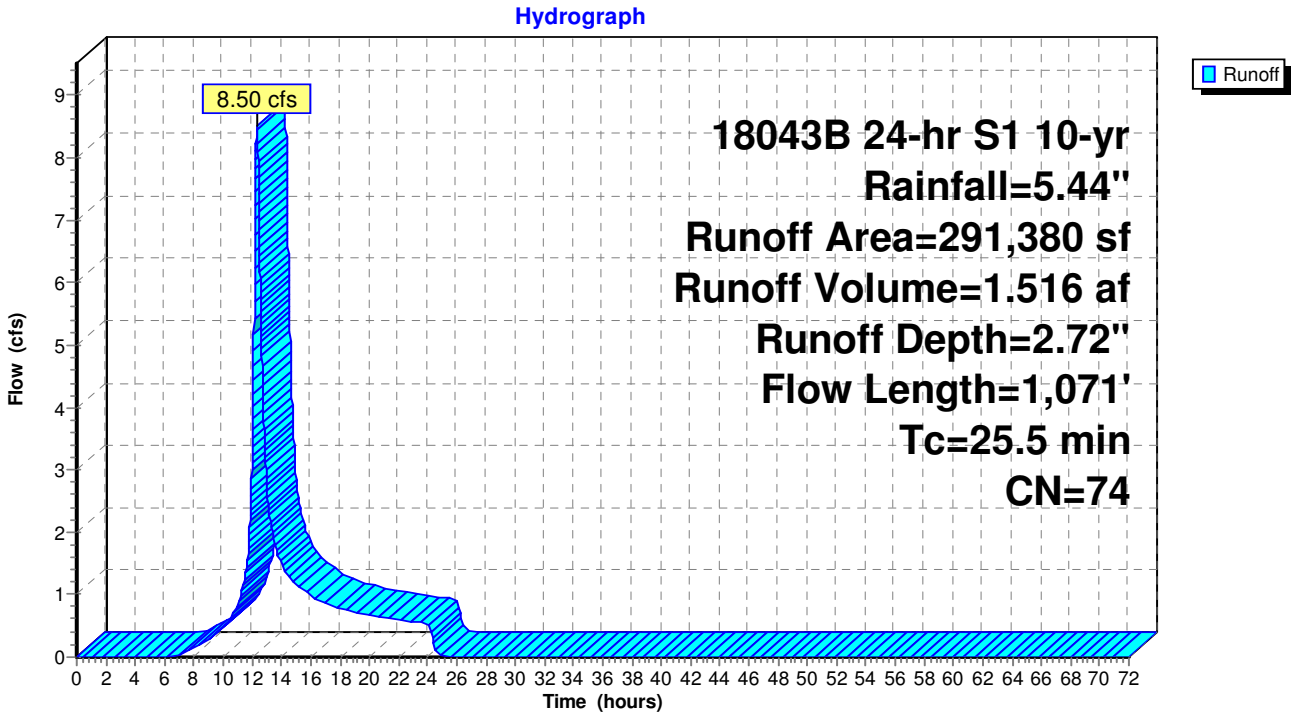
Runoff = 8.50 cfs @ 12.30 hrs, Volume= 1.516 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
43,371	61	Pasture/grassland/range, Good, HSG B
137,783	74	Pasture/grassland/range, Good, HSG C
110,226	80	Pasture/grassland/range, Good, HSG D
291,380	74	Weighted Average
291,380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0260	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.9	126	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	194	0.0210	1.01		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	235	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	245	0.0060	2.49	24.90	**Parabolic Channel,** W=15.00' D=1.00' Area=10.0 sf Perim=15.2' n= 0.035 Earth, dense weeds
0.8	171	0.0100	3.64	27.31	**Parabolic Channel,** W=9.00' D=1.25' Area=7.5 sf Perim=9.4' n= 0.035 Earth, dense weeds
25.5	1,071	Total			

Subcatchment C4: C4



Summary for Subcatchment C5: C5

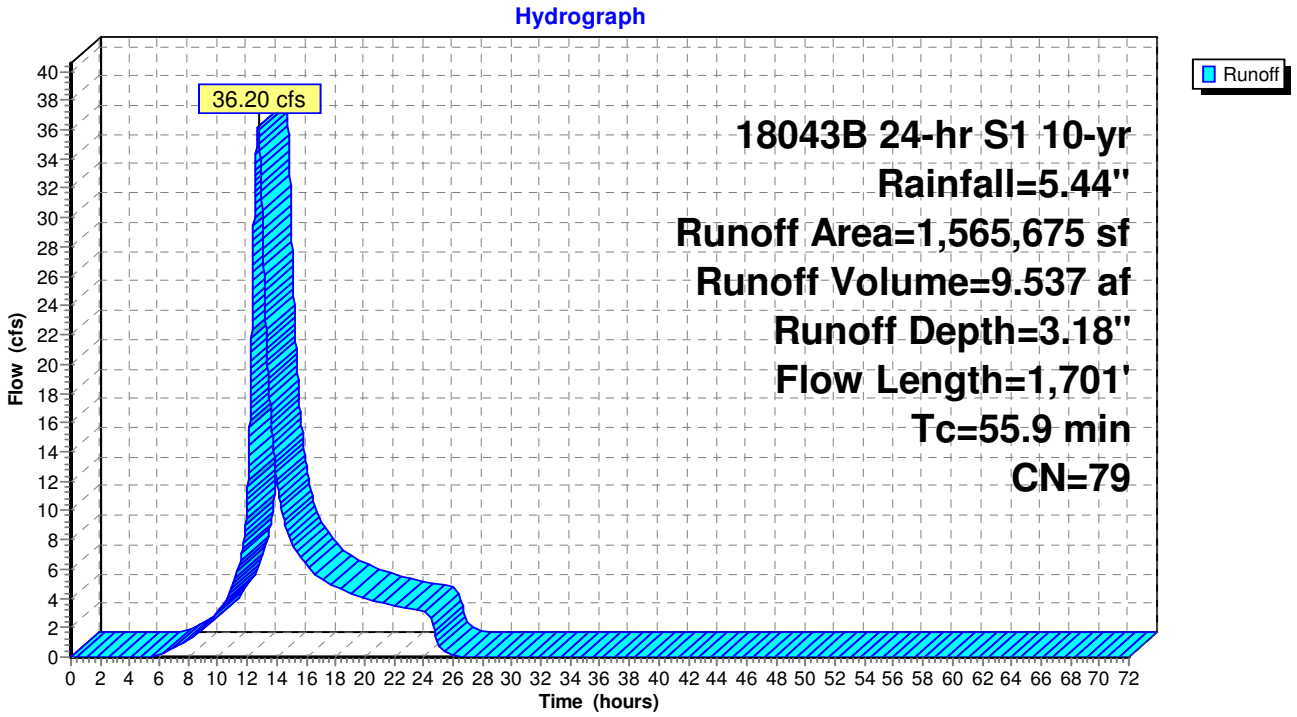
Runoff = 36.20 cfs @ 12.73 hrs, Volume= 9.537 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
289,410	74	Pasture/grassland/range, Good, HSG C
1,276,265	80	Pasture/grassland/range, Good, HSG D
1,565,675	79	Weighted Average
1,565,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0080	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.2	97	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.9	798	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.1	234	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	278	0.0070	3.93	41.87	**Parabolic Channel,** W=8.00' D=2.00' Area=10.7 sf Perim=9.2' n= 0.035 Earth, dense weeds
1.1	194	0.0050	2.89	28.93	**Parabolic Channel,** W=10.00' D=1.50' Area=10.0 sf Perim=10.6' n= 0.035 Earth, dense weeds
55.9	1,701	Total			

Subcatchment C5: C5



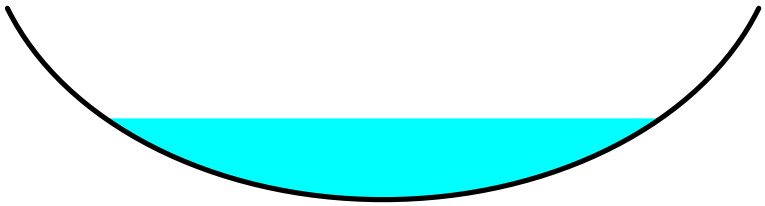
Summary for Reach R1: R1

Inflow Area = 3.719 ac, 0.20% Impervious, Inflow Depth = 3.00" for 10-yr event
Inflow = 5.92 cfs @ 12.22 hrs, Volume= 0.928 af
Outflow = 5.83 cfs @ 12.25 hrs, Volume= 0.928 af, Atten= 2%, Lag= 1.9 min

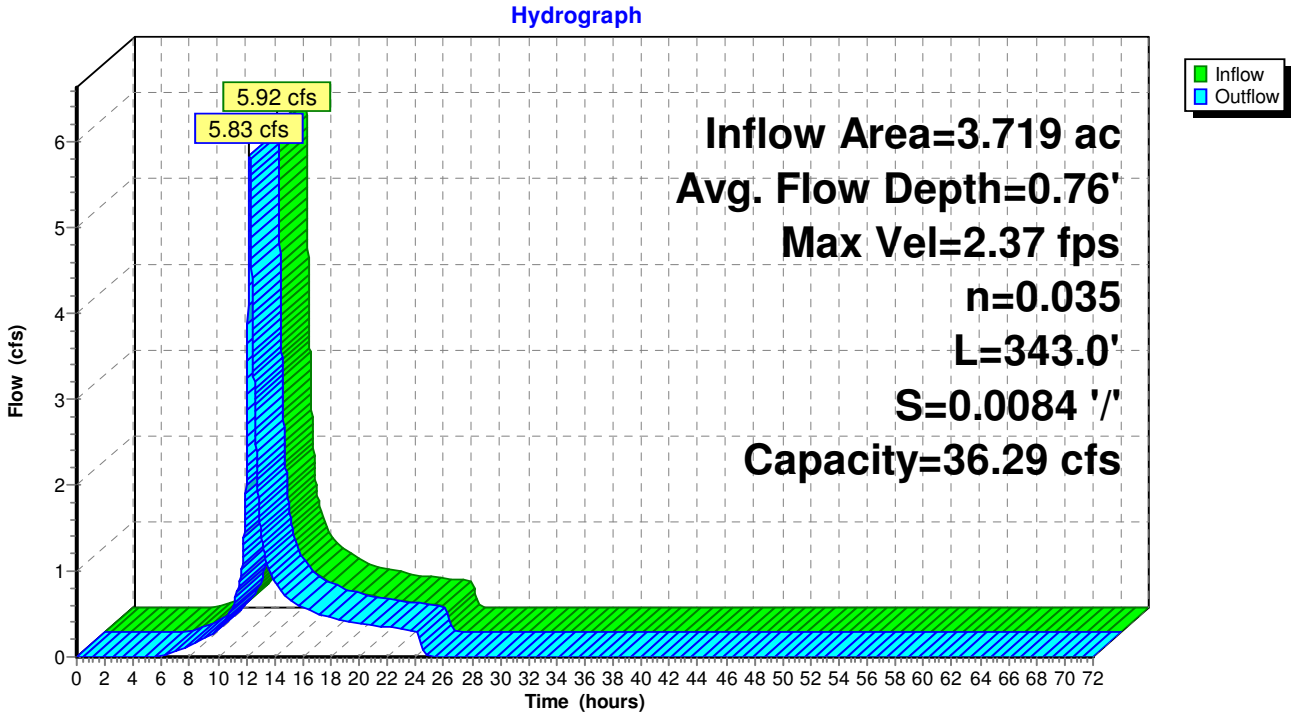
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.37 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 5.9 min

Peak Storage= 843 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.76' , Surface Width= 4.87'
Bank-Full Depth= 1.80' Flow Area= 9.0 sf, Capacity= 36.29 cfs

7.50' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 343.0' Slope= 0.0084 '/'
Inlet Invert= 100.07', Outlet Invert= 97.19'



Reach R1: R1



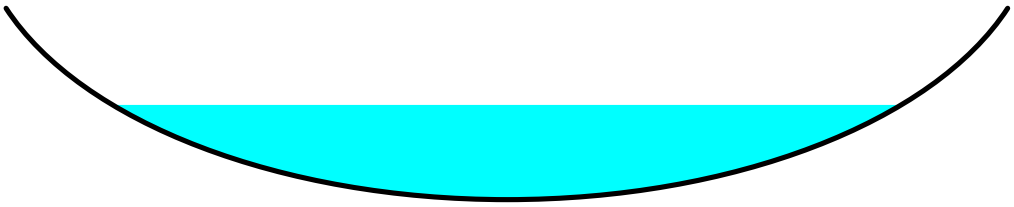
Summary for Reach R2: R2

Inflow Area = 6.176 ac, 0.12% Impervious, Inflow Depth = 3.00" for 10-yr event
Inflow = 9.58 cfs @ 12.25 hrs, Volume= 1.542 af
Outflow = 9.48 cfs @ 12.27 hrs, Volume= 1.542 af, Atten= 1%, Lag= 1.7 min

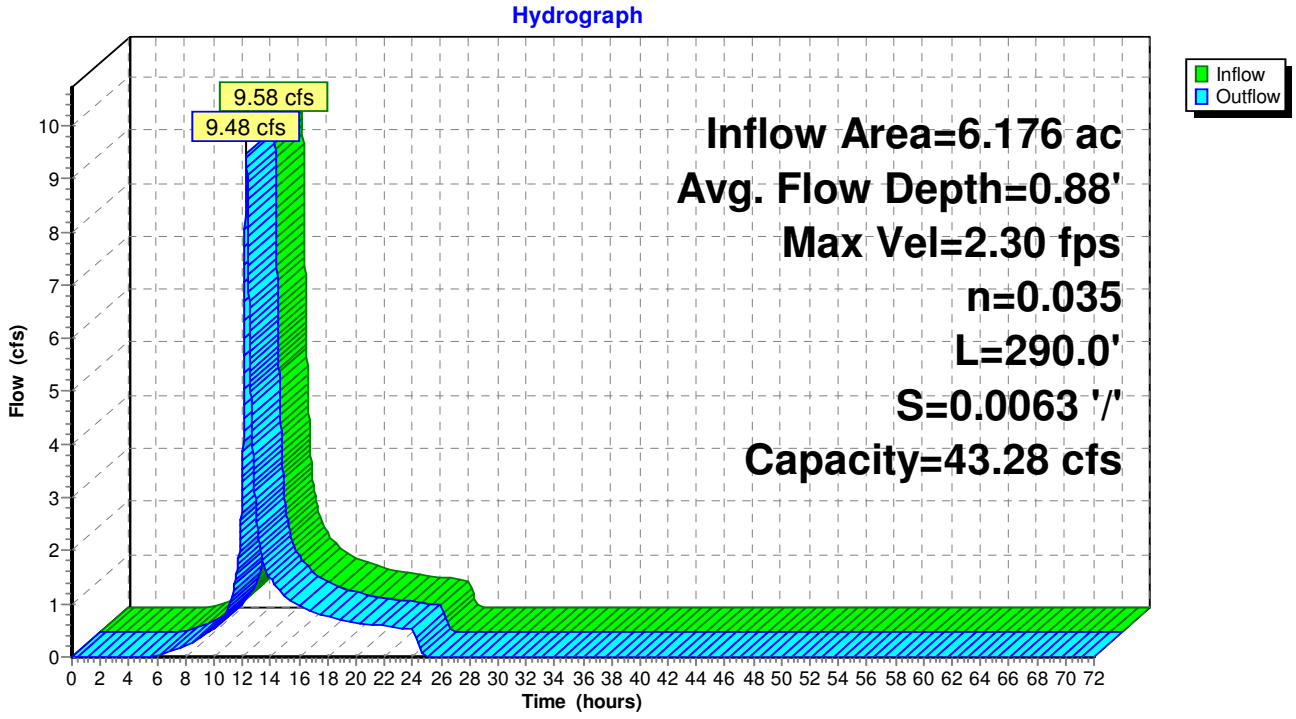
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.30 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 5.4 min

Peak Storage= 1,195 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.88' , Surface Width= 7.00'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 43.28 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 290.0' Slope= 0.0063 '/'
Inlet Invert= 96.92', Outlet Invert= 95.10'



Reach R2: R2



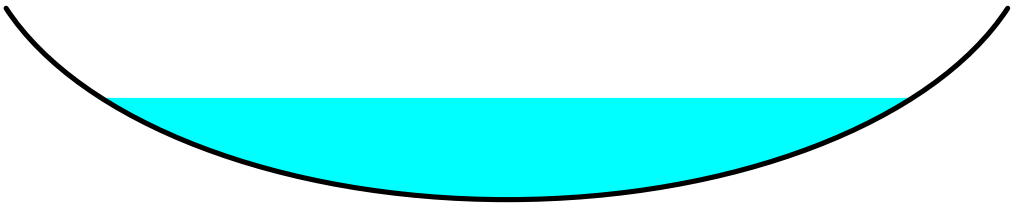
Summary for Reach R3: R3

Inflow Area = 6.176 ac, 0.12% Impervious, Inflow Depth = 3.00" for 10-yr event
Inflow = 9.48 cfs @ 12.27 hrs, Volume= 1.542 af
Outflow = 9.34 cfs @ 12.31 hrs, Volume= 1.542 af, Atten= 1%, Lag= 1.9 min

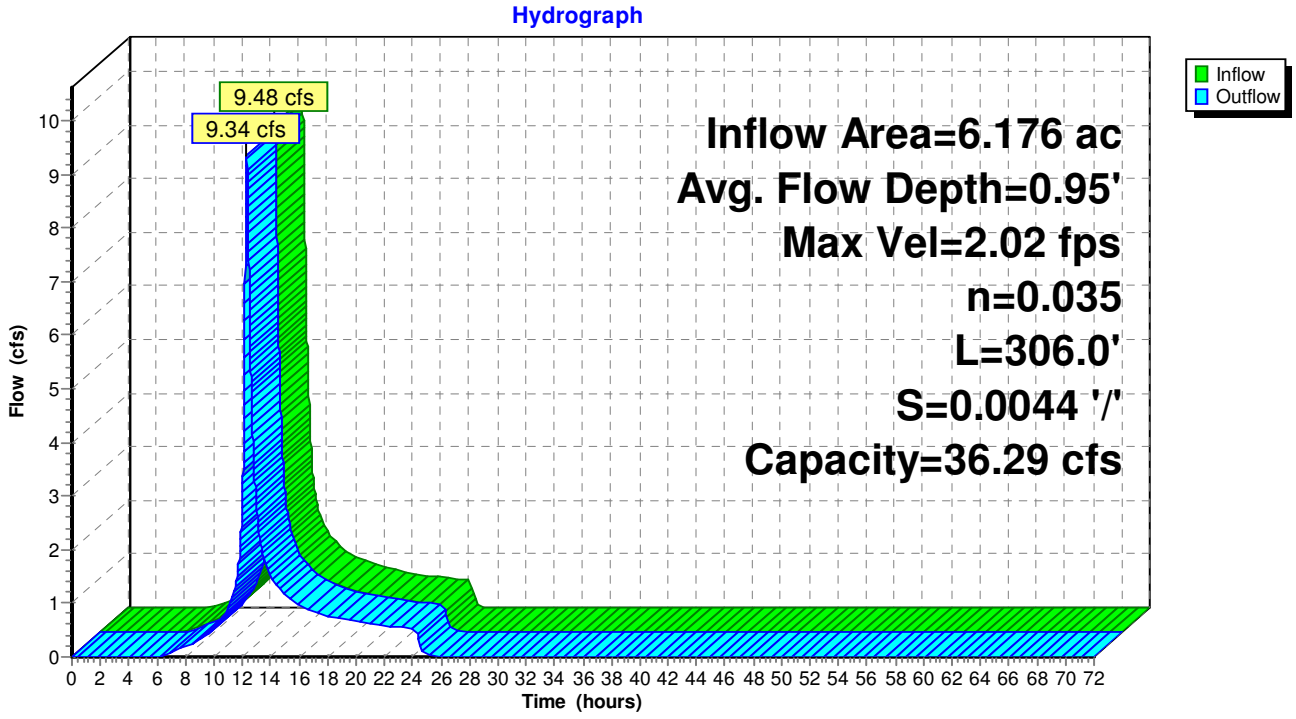
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.02 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.76 fps, Avg. Travel Time= 6.7 min

Peak Storage= 1,413 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.95' , Surface Width= 7.27'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 36.29 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 306.0' Slope= 0.0044 '/'
Inlet Invert= 95.10', Outlet Invert= 93.75'



Reach R3: R3



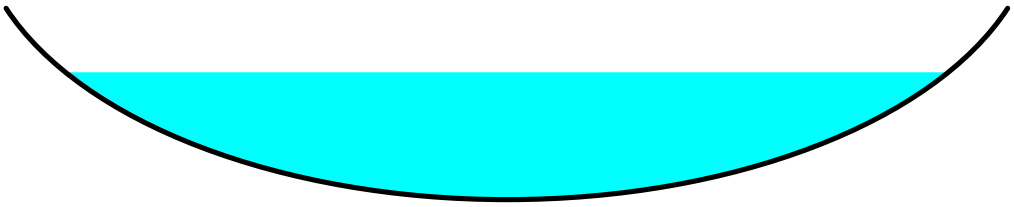
Summary for Reach R4: R4

Inflow Area = 12.666 ac, 0.06% Impervious, Inflow Depth = 3.04" for 10-yr event
Inflow = 18.38 cfs @ 12.31 hrs, Volume= 3.212 af
Outflow = 18.37 cfs @ 12.32 hrs, Volume= 3.212 af, Atten= 0%, Lag= 0.3 min

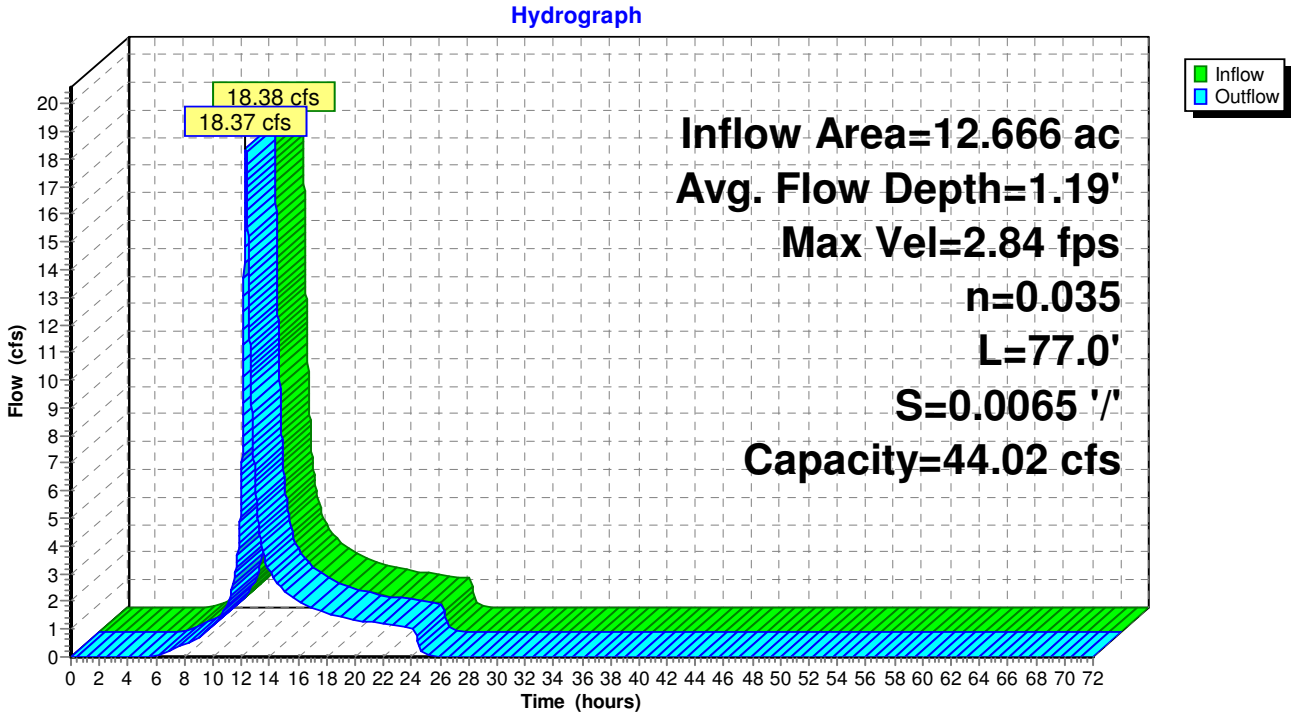
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.84 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 1.2 min

Peak Storage= 499 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.19' , Surface Width= 8.14'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 44.02 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 77.0' Slope= 0.0065 '/'
Inlet Invert= 93.50', Outlet Invert= 93.00'



Reach R4: R4



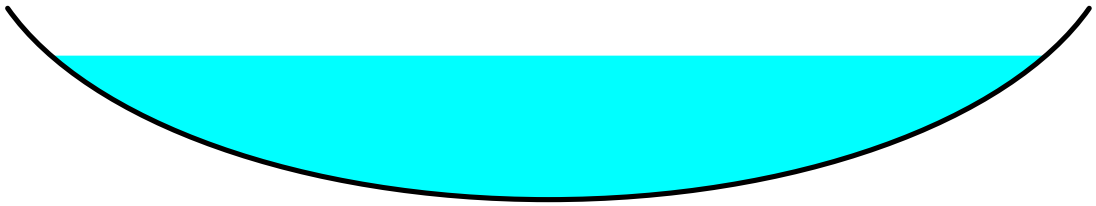
Summary for Reach R5: R5

Inflow Area = 19.355 ac, 0.04% Impervious, Inflow Depth = 2.93" for 10-yr event
Inflow = 26.87 cfs @ 12.32 hrs, Volume= 4.728 af
Outflow = 22.20 cfs @ 12.47 hrs, Volume= 4.728 af, Atten= 17%, Lag= 9.1 min

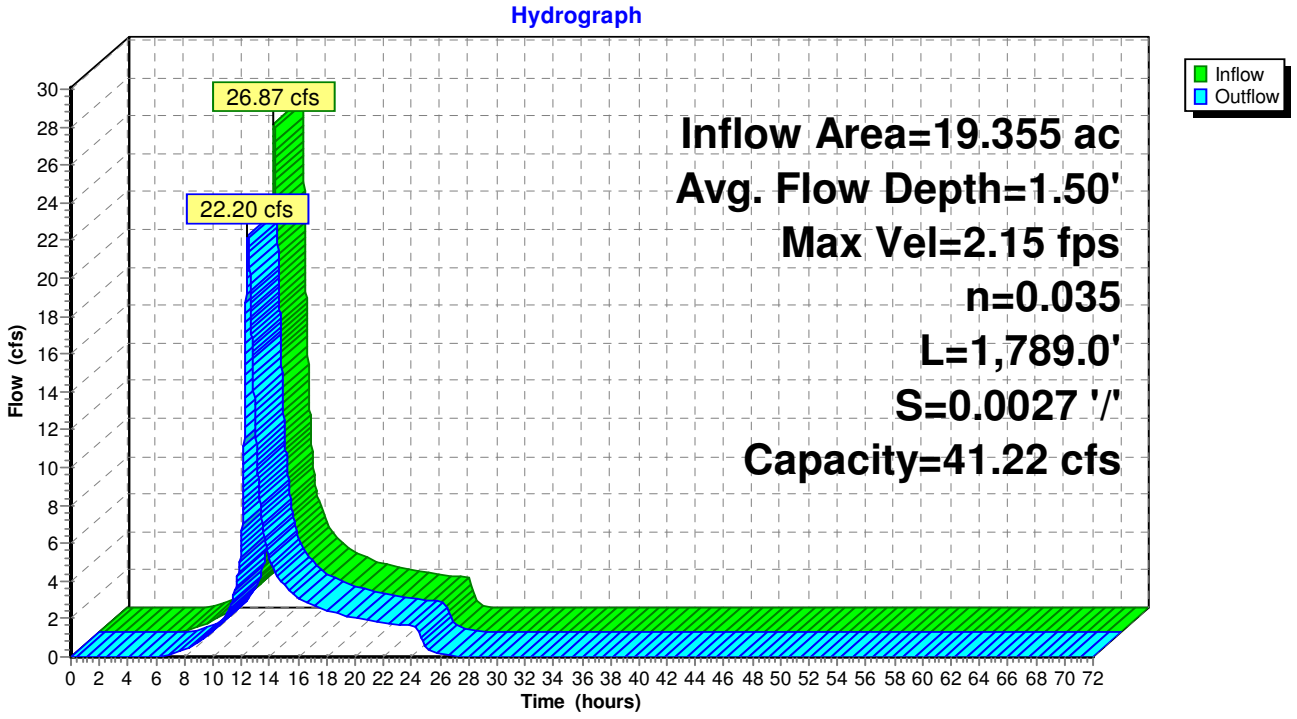
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.15 fps, Min. Travel Time= 13.9 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 57.2 min

Peak Storage= 18,517 cf @ 12.47 hrs
Average Depth at Peak Storage= 1.50' , Surface Width= 10.38'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 41.22 cfs

12.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 1,789.0' Slope= 0.0027 '/'
Inlet Invert= 93.01', Outlet Invert= 88.10'



Reach R5: R5



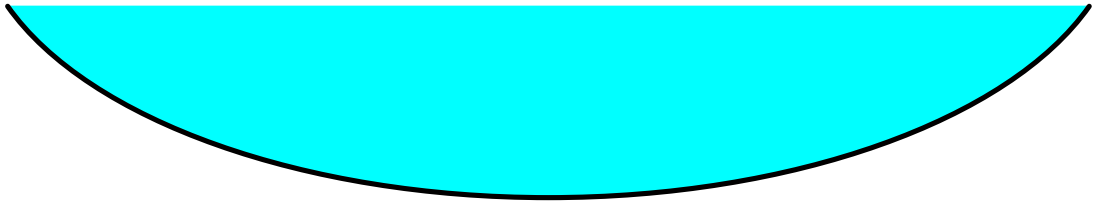
Summary for Reach R6: R6

Inflow Area = 55.298 ac, 0.01% Impervious, Inflow Depth = 3.10" for 10-yr event
Inflow = 55.53 cfs @ 12.61 hrs, Volume= 14.265 af
Outflow = 55.33 cfs @ 12.63 hrs, Volume= 14.265 af, Atten= 0%, Lag= 1.4 min

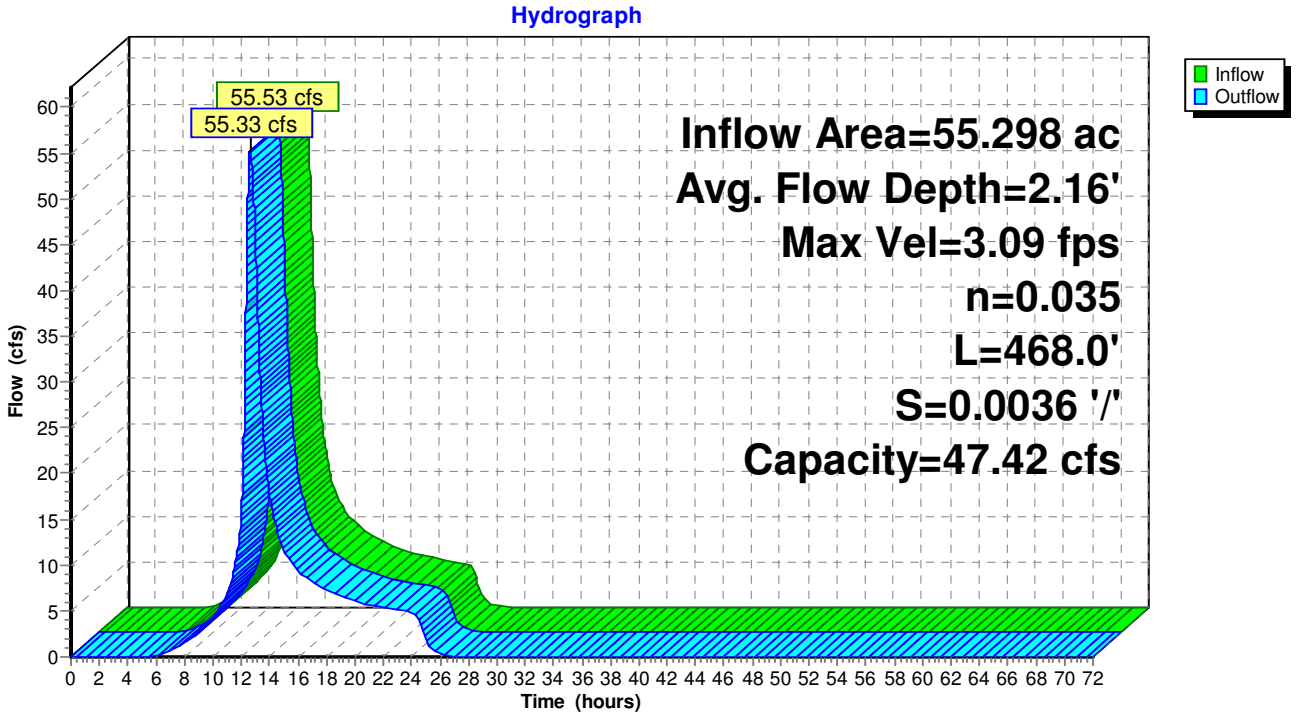
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.09 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 10.1 min

Peak Storage= 8,372 cf @ 12.63 hrs
Average Depth at Peak Storage= 2.16' , Surface Width= 12.46'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 47.42 cfs

12.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 468.0' Slope= 0.0036 '/'
Inlet Invert= 88.10', Outlet Invert= 86.40'



Reach R6: R6

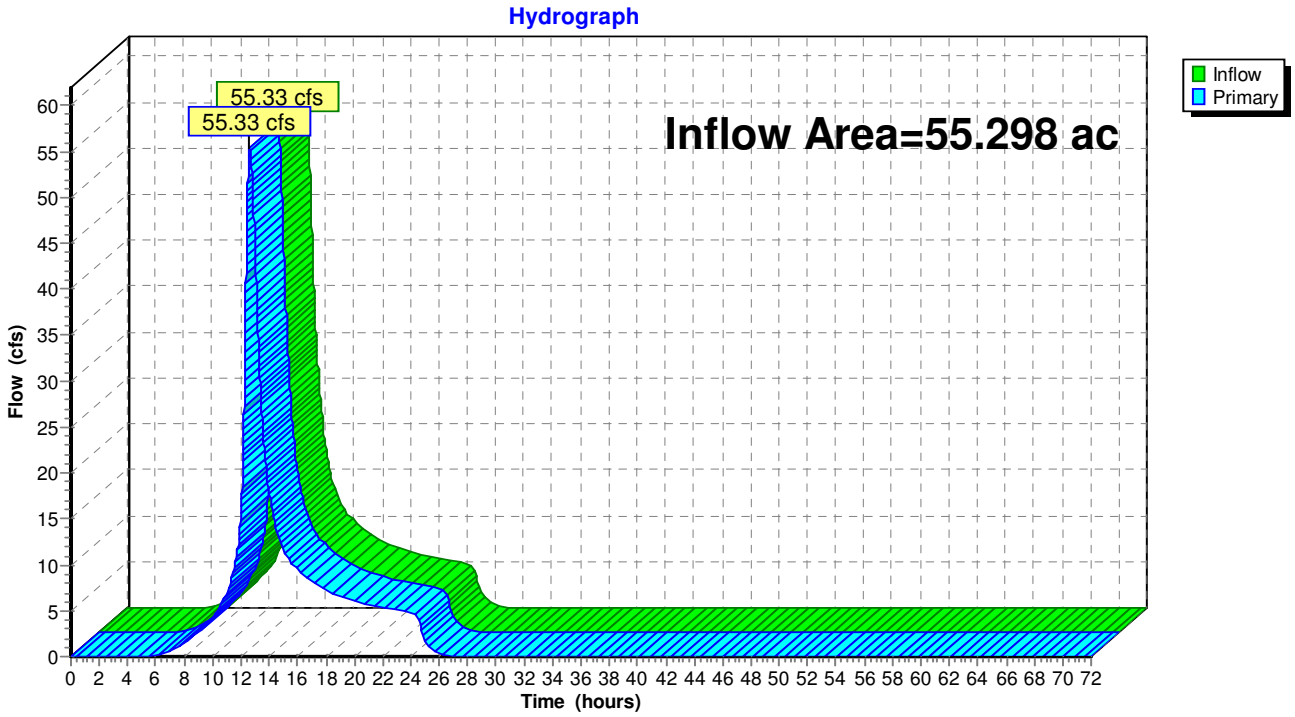


Summary for Link C: C

Inflow Area = 55.298 ac, 0.01% Impervious, Inflow Depth = 3.10" for 10-yr event
Inflow = 55.33 cfs @ 12.63 hrs, Volume= 14.265 af
Primary = 55.33 cfs @ 12.63 hrs, Volume= 14.265 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link C: C



A – 1

NODE LISTING – 25-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=103,722 sf 6.17% Impervious Runoff Depth=3.42"
Flow Length=561' Tc=11.1 min CN=69 Runoff=5.17 cfs 0.678 af

Subcatchment B: B Runoff Area=86,136 sf 0.00% Impervious Runoff Depth=3.73"
Flow Length=724' Tc=16.0 min CN=72 Runoff=4.03 cfs 0.614 af

Subcatchment C1: C1 Runoff Area=161,998 sf 0.20% Impervious Runoff Depth=4.26"
Flow Length=532' Tc=19.6 min CN=77 Runoff=7.94 cfs 1.320 af

Subcatchment C2: C2 Runoff Area=107,031 sf 0.00% Impervious Runoff Depth=4.26"
Flow Length=813' Tc=21.3 min CN=77 Runoff=5.04 cfs 0.872 af

Subcatchment C3: C3 Runoff Area=282,711 sf 0.00% Impervious Runoff Depth=4.37"
Flow Length=1,331' Tc=27.6 min CN=78 Runoff=12.10 cfs 2.361 af

Subcatchment C4: C4 Runoff Area=291,380 sf 0.00% Impervious Runoff Depth=3.94"
Flow Length=1,071' Tc=25.5 min CN=74 Runoff=11.70 cfs 2.195 af

Subcatchment C5: C5 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=4.47"
Flow Length=1,701' Tc=55.9 min CN=79 Runoff=48.46 cfs 13.403 af

Reach R1: R1 Avg. Flow Depth=0.87' Max Vel=2.59 fps Inflow=7.94 cfs 1.320 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=7.83 cfs 1.320 af

Reach R2: R2 Avg. Flow Depth=1.01' Max Vel=2.51 fps Inflow=12.87 cfs 2.192 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=12.76 cfs 2.192 af

Reach R3: R3 Avg. Flow Depth=1.10' Max Vel=2.21 fps Inflow=12.76 cfs 2.192 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=12.60 cfs 2.192 af

Reach R4: R4 Avg. Flow Depth=1.37' Max Vel=3.09 fps Inflow=24.68 cfs 4.553 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=24.66 cfs 4.553 af

Reach R5: R5 Avg. Flow Depth=1.75' Max Vel=2.37 fps Inflow=36.36 cfs 6.748 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=30.88 cfs 6.748 af

Reach R6: R6 Avg. Flow Depth=2.54' Max Vel=3.32 fps Inflow=74.84 cfs 20.151 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=74.68 cfs 20.151 af

Link C: C Inflow=74.68 cfs 20.151 af
Primary=74.68 cfs 20.151 af

Total Runoff Area = 59.657 ac Runoff Volume = 21.443 af Average Runoff Depth = 4.31"
99.74% Pervious = 59.503 ac 0.26% Impervious = 0.154 ac

A – 1

NODE LISTING – 50-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=103,722 sf 6.17% Impervious Runoff Depth=4.53"
Flow Length=561' Tc=11.1 min CN=69 Runoff=6.56 cfs 0.899 af

Subcatchment B: B Runoff Area=86,136 sf 0.00% Impervious Runoff Depth=4.88"
Flow Length=724' Tc=16.0 min CN=72 Runoff=5.04 cfs 0.804 af

Subcatchment C1: C1 Runoff Area=161,998 sf 0.20% Impervious Runoff Depth=5.47"
Flow Length=532' Tc=19.6 min CN=77 Runoff=9.71 cfs 1.694 af

Subcatchment C2: C2 Runoff Area=107,031 sf 0.00% Impervious Runoff Depth=5.47"
Flow Length=813' Tc=21.3 min CN=77 Runoff=6.17 cfs 1.119 af

Subcatchment C3: C3 Runoff Area=282,711 sf 0.00% Impervious Runoff Depth=5.59"
Flow Length=1,331' Tc=27.6 min CN=78 Runoff=14.79 cfs 3.021 af

Subcatchment C4: C4 Runoff Area=291,380 sf 0.00% Impervious Runoff Depth=5.11"
Flow Length=1,071' Tc=25.5 min CN=74 Runoff=14.57 cfs 2.851 af

Subcatchment C5: C5 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=5.70"
Flow Length=1,701' Tc=55.9 min CN=79 Runoff=59.41 cfs 17.084 af

Reach R1: R1 Avg. Flow Depth=0.96' Max Vel=2.75 fps Inflow=9.71 cfs 1.694 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=9.60 cfs 1.694 af

Reach R2: R2 Avg. Flow Depth=1.12' Max Vel=2.67 fps Inflow=15.76 cfs 2.814 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=15.64 cfs 2.814 af

Reach R3: R3 Avg. Flow Depth=1.21' Max Vel=2.35 fps Inflow=15.64 cfs 2.814 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=15.48 cfs 2.814 af

Reach R4: R4 Avg. Flow Depth=1.51' Max Vel=3.28 fps Inflow=30.23 cfs 5.835 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=30.21 cfs 5.835 af

Reach R5: R5 Avg. Flow Depth=1.94' Max Vel=2.53 fps Inflow=44.77 cfs 8.685 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=38.69 cfs 8.685 af

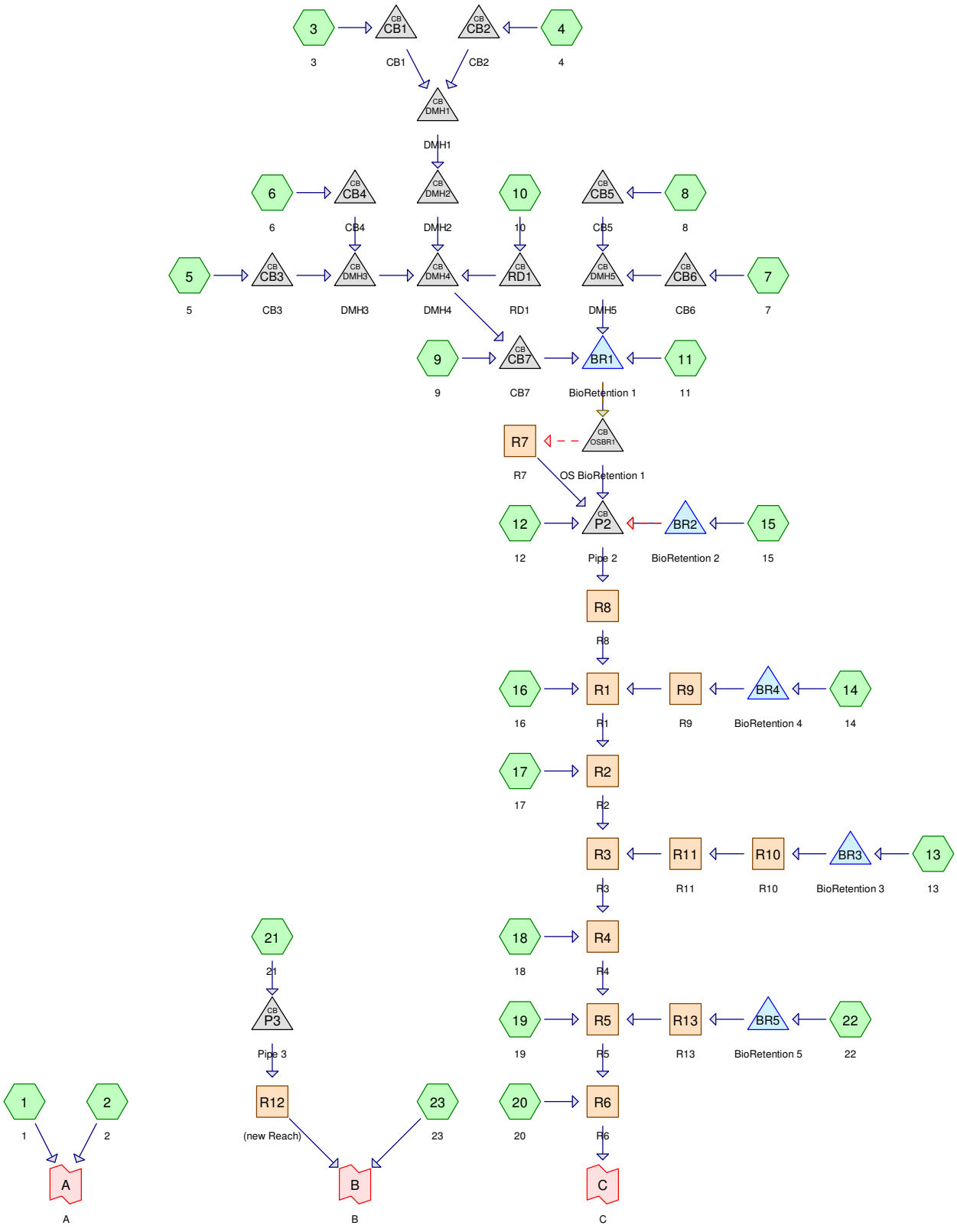
Reach R6: R6 Avg. Flow Depth=2.89' Max Vel=3.45 fps Inflow=92.11 cfs 25.769 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=91.95 cfs 25.769 af

Link C: C Inflow=91.95 cfs 25.769 af
Primary=91.95 cfs 25.769 af

Total Runoff Area = 59.657 ac Runoff Volume = 27.472 af Average Runoff Depth = 5.53"
99.74% Pervious = 59.503 ac 0.26% Impervious = 0.154 ac

A – 2

DEVELOPED WATERSHEDS



Routing Diagram for 18043B - Post
Prepared by CIVILWORKS NEW ENGLAND
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.762	61	>75% Grass cover, Good, HSG B (1, 3, 4, 7, 8, 12, 15, 17, 19, 21, 22, 23)
1.141	74	>75% Grass cover, Good, HSG C (1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 17, 18, 19, 22, 23)
0.689	80	>75% Grass cover, Good, HSG D (7, 11, 12, 13, 14, 15, 16, 17, 18, 22, 23)
1.652	61	Pasture/grassland/range, Good, HSG B (12, 15, 17, 19, 21, 22, 23)
12.428	74	Pasture/grassland/range, Good, HSG C (2, 11, 12, 15, 17, 18, 19, 20, 21, 22, 23)
40.007	80	Pasture/grassland/range, Good, HSG D (11, 12, 15, 16, 17, 18, 19, 20, 21, 23)
0.713	98	Paved parking, HSG B (1, 3, 4, 6, 7, 8, 14, 15, 22)
1.200	98	Paved parking, HSG C (1, 2, 4, 5, 6, 7, 8, 13, 14, 15, 22)
0.484	98	Paved parking, HSG D (13, 14, 15)
0.447	98	Roofs, HSG B (10)
0.171	98	Roofs, HSG C (10)
0.002	98	Unconnected pavement, HSG B (7, 8)
0.008	98	Unconnected pavement, HSG C (8, 9)
59.703	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.576	HSG B	1, 3, 4, 6, 7, 8, 10, 12, 14, 15, 17, 19, 21, 22, 23
14.947	HSG C	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23
41.180	HSG D	7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
0.000	Other	
59.703		**TOTAL AREA**

A – 2

NODE LISTING – 2-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=14,060 sf 36.26% Impervious Runoff Depth=1.44"
Flow Length=329' Tc=12.5 min CN=76 Runoff=0.33 cfs 0.039 af

Subcatchment 2: 2 Runoff Area=9,380 sf 1.90% Impervious Runoff Depth=1.31"
Flow Length=140' Tc=9.3 min CN=74 Runoff=0.23 cfs 0.023 af

Subcatchment 3: 3 Runoff Area=6,787 sf 69.74% Impervious Runoff Depth=2.27"
Flow Length=119' Tc=2.5 min CN=87 Runoff=0.41 cfs 0.030 af

Subcatchment 4: 4 Runoff Area=13,533 sf 56.26% Impervious Runoff Depth=2.10"
Flow Length=92' Tc=9.0 min CN=85 Runoff=0.57 cfs 0.054 af

Subcatchment 5: 5 Runoff Area=4,926 sf 90.60% Impervious Runoff Depth=3.14"
Flow Length=215' Tc=2.0 min CN=96 Runoff=0.38 cfs 0.030 af

Subcatchment 6: 6 Runoff Area=4,890 sf 92.25% Impervious Runoff Depth=3.14"
Flow Length=206' Tc=2.0 min CN=96 Runoff=0.38 cfs 0.029 af

Subcatchment 7: 7 Runoff Area=6,327 sf 90.17% Impervious Runoff Depth=3.04"
Flow Length=182' Tc=2.1 min CN=95 Runoff=0.48 cfs 0.037 af

Subcatchment 8: 8 Runoff Area=17,659 sf 89.57% Impervious Runoff Depth=3.04"
Flow Length=198' Tc=6.4 min CN=95 Runoff=1.14 cfs 0.103 af

Subcatchment 9: 9 Runoff Area=12,572 sf 0.29% Impervious Runoff Depth=1.31"
Flow Length=264' Tc=11.0 min CN=74 Runoff=0.28 cfs 0.031 af

Subcatchment 10: 10 Runoff Area=26,880 sf 100.00% Impervious Runoff Depth=3.37"
Flow Length=112' Tc=1.2 min CN=98 Runoff=2.14 cfs 0.173 af

Subcatchment 11: 11 Runoff Area=46,481 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=281' Tc=16.9 min CN=78 Runoff=1.06 cfs 0.140 af

Subcatchment 12: 12 Runoff Area=48,341 sf 0.00% Impervious Runoff Depth=0.96"
Flow Length=661' Tc=2.8 min CN=68 Runoff=1.11 cfs 0.089 af

Subcatchment 13: 13 Runoff Area=19,790 sf 77.14% Impervious Runoff Depth=2.83"
Flow Length=360' Tc=2.5 min CN=93 Runoff=1.43 cfs 0.107 af

Subcatchment 14: 14 Runoff Area=12,887 sf 70.47% Impervious Runoff Depth=2.83"
Flow Length=361' Tc=2.5 min CN=93 Runoff=0.93 cfs 0.070 af

Subcatchment 15: 15 Runoff Area=30,793 sf 37.68% Impervious Runoff Depth=2.02"
Flow Length=204' Tc=8.8 min CN=84 Runoff=1.24 cfs 0.119 af

Subcatchment 16: 16 Runoff Area=31,967 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=233' Tc=18.6 min CN=80 Runoff=0.76 cfs 0.105 af

Subcatchment 17: 17 Runoff Area=91,848 sf 0.00% Impervious Runoff Depth=1.51"
Flow Length=569' Tc=24.4 min CN=77 Runoff=1.65 cfs 0.264 af

Subcatchment 18: 18 Runoff Area=260,071 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=1,365' Tc=25.6 min CN=79 Runoff=5.05 cfs 0.818 af

Subcatchment 19: 19 Runoff Area=271,263 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=1,033' Tc=23.9 min CN=75 Runoff=4.45 cfs 0.713 af

Subcatchment 20: 20 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=1,678' Tc=55.8 min CN=79 Runoff=20.06 cfs 4.924 af

Subcatchment 21: 21 Runoff Area=10,571 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=418' Tc=6.5 min CN=72 Runoff=0.26 cfs 0.024 af

Subcatchment 22: 22 Runoff Area=43,189 sf 48.03% Impervious Runoff Depth=1.79"
Flow Length=289' Tc=13.3 min CN=81 Runoff=1.27 cfs 0.148 af

Subcatchment 23: 23 Runoff Area=50,787 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=477' Tc=14.5 min CN=75 Runoff=1.06 cfs 0.133 af

Reach R1: R1 Avg. Flow Depth=0.39' Max Vel=1.55 fps Inflow=1.52 cfs 1.004 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=1.39 cfs 1.004 af

Reach R10: R10 Avg. Flow Depth=0.07' Max Vel=1.04 fps Inflow=0.09 cfs 0.107 af
n=0.022 L=206.0' S=0.0141 '/' Capacity=6.31 cfs Outflow=0.09 cfs 0.107 af

Reach R11: R11 Avg. Flow Depth=0.10' Max Vel=0.60 fps Inflow=0.09 cfs 0.107 af
n=0.035 L=397.0' S=0.0076 '/' Capacity=47.49 cfs Outflow=0.09 cfs 0.107 af

Reach R12: R12 Avg. Flow Depth=0.13' Max Vel=0.95 fps Inflow=0.26 cfs 0.024 af
n=0.035 L=418.0' S=0.0133 '/' Capacity=213.86 cfs Outflow=0.19 cfs 0.024 af

Reach R13: R13 Avg. Flow Depth=0.18' Max Vel=0.79 fps Inflow=0.32 cfs 0.148 af
n=0.035 L=315.0' S=0.0060 '/' Capacity=2.60 cfs Outflow=0.28 cfs 0.148 af

Reach R2: R2 Avg. Flow Depth=0.52' Max Vel=1.62 fps Inflow=3.03 cfs 1.269 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=2.99 cfs 1.268 af

Reach R3: R3 Avg. Flow Depth=0.56' Max Vel=1.43 fps Inflow=3.01 cfs 1.376 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=2.97 cfs 1.375 af

Reach R4: R4 Avg. Flow Depth=0.81' Max Vel=2.21 fps Inflow=7.97 cfs 2.193 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=7.96 cfs 2.193 af

Reach R5: R5 Avg. Flow Depth=1.01' Max Vel=1.67 fps Inflow=12.39 cfs 3.054 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=9.58 cfs 3.052 af

Reach R6: R6 Avg. Flow Depth=1.58' Max Vel=2.55 fps Inflow=28.64 cfs 7.976 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=28.56 cfs 7.976 af

Reach R7: R7 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.022 L=42.0' S=0.0202 '/' Capacity=6.00 cfs Outflow=0.00 cfs 0.000 af

Reach R8: R8 Avg. Flow Depth=0.42' Max Vel=1.43 fps Inflow=1.24 cfs 0.830 af
n=0.035 L=173.0' S=0.0066 '/' Capacity=11.65 cfs Outflow=1.15 cfs 0.830 af

Reach R9: R9 Avg. Flow Depth=0.05' Max Vel=0.52 fps Inflow=0.03 cfs 0.070 af
n=0.022 L=120.0' S=0.0063 '/' Capacity=5.94 cfs Outflow=0.03 cfs 0.070 af

Pond BR1: BioRetention 1 Peak Elev=105.62' Storage=15,218 cf Inflow=5.64 cfs 0.627 af
Outflow=0.51 cfs 0.627 af

Pond BR2: BioRetention 2 Peak Elev=104.47' Storage=4,709 cf Inflow=1.24 cfs 0.119 af
Primary=0.06 cfs 0.114 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.114 af

Pond BR3: BioRetention 3 Peak Elev=105.05' Storage=2,694 cf Inflow=1.43 cfs 0.107 af
Outflow=0.09 cfs 0.107 af

Pond BR4: BioRetention 4 Peak Elev=104.11' Storage=2,920 cf Inflow=0.93 cfs 0.070 af
Outflow=0.03 cfs 0.070 af

Pond BR5: BioRetention 5 Peak Elev=99.53' Storage=2,905 cf Inflow=1.27 cfs 0.148 af
Outflow=0.32 cfs 0.148 af

Pond CB1: CB1 Peak Elev=114.52' Inflow=0.41 cfs 0.030 af
12.0" Round Culvert n=0.012 L=152.0' S=0.0102 '/' Outflow=0.41 cfs 0.030 af

Pond CB2: CB2 Peak Elev=113.74' Inflow=0.57 cfs 0.054 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0100 '/' Outflow=0.57 cfs 0.054 af

Pond CB3: CB3 Peak Elev=109.12' Inflow=0.38 cfs 0.030 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0100 '/' Outflow=0.38 cfs 0.030 af

Pond CB4: CB4 Peak Elev=109.10' Inflow=0.38 cfs 0.029 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0500 '/' Outflow=0.38 cfs 0.029 af

Pond CB5: CB5 Peak Elev=107.56' Inflow=1.14 cfs 0.103 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0119 '/' Outflow=1.14 cfs 0.103 af

Pond CB6: CB6 Peak Elev=107.54' Inflow=0.48 cfs 0.037 af
12.0" Round Culvert n=0.012 L=173.0' S=0.0075 '/' Outflow=0.48 cfs 0.037 af

Pond CB7: CB7 Peak Elev=107.44' Inflow=3.81 cfs 0.348 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=3.81 cfs 0.348 af

Pond DMH1: DMH1 Peak Elev=112.73' Inflow=0.82 cfs 0.084 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0100 '/' Outflow=0.82 cfs 0.084 af

Pond DMH2: DMH2 Peak Elev=112.03' Inflow=0.82 cfs 0.084 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0143 '/' Outflow=0.82 cfs 0.084 af

Pond DMH3: DMH3 Peak Elev=108.71' Inflow=0.76 cfs 0.059 af
15.0" Round Culvert n=0.012 L=19.0' S=0.0105 '/' Outflow=0.76 cfs 0.059 af

Pond DMH4: DMH4 Peak Elev=108.53' Inflow=3.67 cfs 0.316 af
15.0" Round Culvert n=0.013 L=93.0' S=0.0108 '/' Outflow=3.67 cfs 0.316 af

Pond DMH5: DMH5 Peak Elev=106.63' Inflow=1.51 cfs 0.139 af
12.0" Round Culvert n=0.012 L=18.0' S=0.0056 '/' Outflow=1.51 cfs 0.139 af

Pond OSBR1: OS BioRetention 1 Peak Elev=103.04' Inflow=0.51 cfs 0.627 af
Primary=0.51 cfs 0.627 af Secondary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.627 af

Pond P2: Pipe 2 Peak Elev=102.61' Inflow=1.24 cfs 0.830 af
24.0" Round Culvert n=0.012 L=49.0' S=0.0100 '/' Outflow=1.24 cfs 0.830 af

Pond P3: Pipe 3 Peak Elev=101.90' Inflow=0.26 cfs 0.024 af
48.0" Round Culvert n=0.012 L=55.0' S=0.0069 '/' Outflow=0.26 cfs 0.024 af

Pond RD1: RD1 Peak Elev=112.34' Inflow=2.14 cfs 0.173 af
15.0" Round Culvert n=0.012 L=245.0' S=0.0102 '/' Outflow=2.14 cfs 0.173 af

Link A: A Inflow=0.55 cfs 0.062 af
Primary=0.55 cfs 0.062 af

Link B: B Inflow=1.24 cfs 0.157 af
Primary=1.24 cfs 0.157 af

Link C: C Inflow=28.56 cfs 7.976 af
Primary=28.56 cfs 7.976 af

Total Runoff Area = 59.703 ac Runoff Volume = 8.204 af Average Runoff Depth = 1.65"
94.93% Pervious = 56.679 ac 5.07% Impervious = 3.024 ac

A – 2

NODE LISTING – 10-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=14,060 sf 36.26% Impervious Runoff Depth=2.90"
Flow Length=329' Tc=12.5 min CN=76 Runoff=0.61 cfs 0.078 af

Subcatchment 2: 2 Runoff Area=9,380 sf 1.90% Impervious Runoff Depth=2.72"
Flow Length=140' Tc=9.3 min CN=74 Runoff=0.43 cfs 0.049 af

Subcatchment 3: 3 Runoff Area=6,787 sf 69.74% Impervious Runoff Depth=3.98"
Flow Length=119' Tc=2.5 min CN=87 Runoff=0.60 cfs 0.052 af

Subcatchment 4: 4 Runoff Area=13,533 sf 56.26% Impervious Runoff Depth=3.78"
Flow Length=92' Tc=9.0 min CN=85 Runoff=0.87 cfs 0.098 af

Subcatchment 5: 5 Runoff Area=4,926 sf 90.60% Impervious Runoff Depth=4.97"
Flow Length=215' Tc=2.0 min CN=96 Runoff=0.50 cfs 0.047 af

Subcatchment 6: 6 Runoff Area=4,890 sf 92.25% Impervious Runoff Depth=4.97"
Flow Length=206' Tc=2.0 min CN=96 Runoff=0.50 cfs 0.046 af

Subcatchment 7: 7 Runoff Area=6,327 sf 90.17% Impervious Runoff Depth=4.86"
Flow Length=182' Tc=2.1 min CN=95 Runoff=0.64 cfs 0.059 af

Subcatchment 8: 8 Runoff Area=17,659 sf 89.57% Impervious Runoff Depth=4.86"
Flow Length=198' Tc=6.4 min CN=95 Runoff=1.52 cfs 0.164 af

Subcatchment 9: 9 Runoff Area=12,572 sf 0.29% Impervious Runoff Depth=2.72"
Flow Length=264' Tc=11.0 min CN=74 Runoff=0.54 cfs 0.065 af

Subcatchment 10: 10 Runoff Area=26,880 sf 100.00% Impervious Runoff Depth=5.20"
Flow Length=112' Tc=1.2 min CN=98 Runoff=2.78 cfs 0.268 af

Subcatchment 11: 11 Runoff Area=46,481 sf 0.00% Impervious Runoff Depth=3.09"
Flow Length=281' Tc=16.9 min CN=78 Runoff=1.88 cfs 0.275 af

Subcatchment 12: 12 Runoff Area=48,341 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=661' Tc=2.8 min CN=68 Runoff=2.36 cfs 0.203 af

Subcatchment 13: 13 Runoff Area=19,790 sf 77.14% Impervious Runoff Depth=4.63"
Flow Length=360' Tc=2.5 min CN=93 Runoff=1.94 cfs 0.175 af

Subcatchment 14: 14 Runoff Area=12,887 sf 70.47% Impervious Runoff Depth=4.63"
Flow Length=361' Tc=2.5 min CN=93 Runoff=1.26 cfs 0.114 af

Subcatchment 15: 15 Runoff Area=30,793 sf 37.68% Impervious Runoff Depth=3.68"
Flow Length=204' Tc=8.8 min CN=84 Runoff=1.94 cfs 0.217 af

Subcatchment 16: 16 Runoff Area=31,967 sf 0.00% Impervious Runoff Depth=3.28"
Flow Length=233' Tc=18.6 min CN=80 Runoff=1.31 cfs 0.201 af

Subcatchment 17: 17 Runoff Area=91,848 sf 0.00% Impervious Runoff Depth=3.00"
Flow Length=569' Tc=24.4 min CN=77 Runoff=3.03 cfs 0.526 af

Subcatchment 18: 18 Runoff Area=260,071 sf 0.00% Impervious Runoff Depth=3.18"
Flow Length=1,365' Tc=25.6 min CN=79 Runoff=8.90 cfs 1.584 af

Subcatchment 19: 19 Runoff Area=271,263 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=1,033' Tc=23.9 min CN=75 Runoff=8.46 cfs 1.459 af

Subcatchment 20: 20 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=3.18"
Flow Length=1,678' Tc=55.8 min CN=79 Runoff=36.36 cfs 9.537 af

Subcatchment 21: 21 Runoff Area=10,571 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=418' Tc=6.5 min CN=72 Runoff=0.51 cfs 0.051 af

Subcatchment 22: 22 Runoff Area=43,189 sf 48.03% Impervious Runoff Depth=3.38"
Flow Length=289' Tc=13.3 min CN=81 Runoff=2.12 cfs 0.279 af

Subcatchment 23: 23 Runoff Area=50,787 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=477' Tc=14.5 min CN=75 Runoff=1.99 cfs 0.273 af

Reach R1: R1 Avg. Flow Depth=0.57' Max Vel=1.98 fps Inflow=3.48 cfs 1.802 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=3.20 cfs 1.802 af

Reach R10: R10 Avg. Flow Depth=0.20' Max Vel=2.11 fps Inflow=0.94 cfs 0.175 af
n=0.022 L=206.0' S=0.0141 '/' Capacity=6.31 cfs Outflow=0.92 cfs 0.175 af

Reach R11: R11 Avg. Flow Depth=0.26' Max Vel=1.15 fps Inflow=0.92 cfs 0.175 af
n=0.035 L=397.0' S=0.0076 '/' Capacity=47.49 cfs Outflow=0.77 cfs 0.175 af

Reach R12: R12 Avg. Flow Depth=0.18' Max Vel=1.20 fps Inflow=0.51 cfs 0.051 af
n=0.035 L=418.0' S=0.0133 '/' Capacity=213.86 cfs Outflow=0.40 cfs 0.051 af

Reach R13: R13 Avg. Flow Depth=0.43' Max Vel=1.42 fps Inflow=2.06 cfs 0.279 af
n=0.035 L=315.0' S=0.0060 '/' Capacity=2.60 cfs Outflow=1.89 cfs 0.279 af

Reach R2: R2 Avg. Flow Depth=0.72' Max Vel=2.02 fps Inflow=6.18 cfs 2.328 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=6.13 cfs 2.328 af

Reach R3: R3 Avg. Flow Depth=0.82' Max Vel=1.84 fps Inflow=6.82 cfs 2.503 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=6.77 cfs 2.503 af

Reach R4: R4 Avg. Flow Depth=1.11' Max Vel=2.70 fps Inflow=15.66 cfs 4.087 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=15.65 cfs 4.087 af

Reach R5: R5 Avg. Flow Depth=1.47' Max Vel=2.12 fps Inflow=25.70 cfs 5.825 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=21.31 cfs 5.823 af

Reach R6: R6 Avg. Flow Depth=2.14' Max Vel=3.08 fps Inflow=54.60 cfs 15.359 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=54.42 cfs 15.359 af

Reach R7: R7 Avg. Flow Depth=0.04' Max Vel=0.87 fps Inflow=0.03 cfs 0.009 af
n=0.022 L=42.0' S=0.0202 '/' Capacity=6.00 cfs Outflow=0.03 cfs 0.009 af

Reach R8: R8 Avg. Flow Depth=0.64' Max Vel=1.86 fps Inflow=2.92 cfs 1.487 af
n=0.035 L=173.0' S=0.0066 '/' Capacity=11.65 cfs Outflow=2.82 cfs 1.487 af

Reach R9: R9 Avg. Flow Depth=0.13' Max Vel=1.04 fps Inflow=0.32 cfs 0.114 af
n=0.022 L=120.0' S=0.0063 '/' Capacity=5.94 cfs Outflow=0.32 cfs 0.114 af

Pond BR1: BioRetention 1 Peak Elev=106.00' Storage=25,115 cf Inflow=8.00 cfs 1.073 af
Outflow=0.75 cfs 1.073 af

Pond BR2: BioRetention 2 Peak Elev=104.57' Storage=5,368 cf Inflow=1.94 cfs 0.217 af
Primary=0.27 cfs 0.190 af Secondary=0.21 cfs 0.021 af Outflow=0.48 cfs 0.211 af

Pond BR3: BioRetention 3 Peak Elev=105.27' Storage=3,083 cf Inflow=1.94 cfs 0.175 af
Outflow=0.94 cfs 0.175 af

Pond BR4: BioRetention 4 Peak Elev=104.18' Storage=3,124 cf Inflow=1.26 cfs 0.114 af
Outflow=0.32 cfs 0.114 af

Pond BR5: BioRetention 5 Peak Elev=99.61' Storage=3,095 cf Inflow=2.12 cfs 0.279 af
Outflow=2.06 cfs 0.279 af

Pond CB1: CB1 Peak Elev=114.59' Inflow=0.60 cfs 0.052 af
12.0" Round Culvert n=0.012 L=152.0' S=0.0102 '/' Outflow=0.60 cfs 0.052 af

Pond CB2: CB2 Peak Elev=113.87' Inflow=0.87 cfs 0.098 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0100 '/' Outflow=0.87 cfs 0.098 af

Pond CB3: CB3 Peak Elev=109.20' Inflow=0.50 cfs 0.047 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0100 '/' Outflow=0.50 cfs 0.047 af

Pond CB4: CB4 Peak Elev=109.16' Inflow=0.50 cfs 0.046 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0500 '/' Outflow=0.50 cfs 0.046 af

Pond CB5: CB5 Peak Elev=107.66' Inflow=1.52 cfs 0.164 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0119 '/' Outflow=1.52 cfs 0.164 af

Pond CB6: CB6 Peak Elev=107.61' Inflow=0.64 cfs 0.059 af
12.0" Round Culvert n=0.012 L=173.0' S=0.0075 '/' Outflow=0.64 cfs 0.059 af

Pond CB7: CB7 Peak Elev=107.81' Inflow=5.24 cfs 0.576 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=5.24 cfs 0.576 af

Pond DMH1: DMH1 Peak Elev=112.84' Inflow=1.25 cfs 0.150 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0100 '/' Outflow=1.25 cfs 0.150 af

Pond DMH2: DMH2 Peak Elev=112.14' Inflow=1.25 cfs 0.150 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0143 '/' Outflow=1.25 cfs 0.150 af

Pond DMH3: DMH3 Peak Elev=108.95' Inflow=1.00 cfs 0.093 af
15.0" Round Culvert n=0.012 L=19.0' S=0.0105 '/' Outflow=1.00 cfs 0.093 af

Pond DMH4: DMH4 Peak Elev=108.85' Inflow=4.96 cfs 0.510 af
15.0" Round Culvert n=0.013 L=93.0' S=0.0108 '/' Outflow=4.96 cfs 0.510 af

Pond DMH5: DMH5 Peak Elev=106.80' Inflow=2.02 cfs 0.223 af
12.0" Round Culvert n=0.012 L=18.0' S=0.0056 '/' Outflow=2.02 cfs 0.223 af

Pond OSBR1: OS BioRetention 1 Peak Elev=103.57' Inflow=0.75 cfs 1.073 af
Primary=0.73 cfs 1.064 af Secondary=0.03 cfs 0.009 af Outflow=0.75 cfs 1.073 af

Pond P2: Pipe 2 Peak Elev=102.90' Inflow=2.92 cfs 1.487 af
24.0" Round Culvert n=0.012 L=49.0' S=0.0100 '/' Outflow=2.92 cfs 1.487 af

Pond P3: Pipe 3 Peak Elev=101.97' Inflow=0.51 cfs 0.051 af
48.0" Round Culvert n=0.012 L=55.0' S=0.0069 '/' Outflow=0.51 cfs 0.051 af

Pond RD1: RD1 Peak Elev=112.49' Inflow=2.78 cfs 0.268 af
15.0" Round Culvert n=0.012 L=245.0' S=0.0102 '/' Outflow=2.78 cfs 0.268 af

Link A: A Inflow=1.01 cfs 0.127 af
Primary=1.01 cfs 0.127 af

Link B: B Inflow=2.35 cfs 0.324 af
Primary=2.35 cfs 0.324 af

Link C: C Inflow=54.42 cfs 15.359 af
Primary=54.42 cfs 15.359 af

Total Runoff Area = 59.703 ac Runoff Volume = 15.819 af Average Runoff Depth = 3.18"
94.93% Pervious = 56.679 ac 5.07% Impervious = 3.024 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment 1: 1

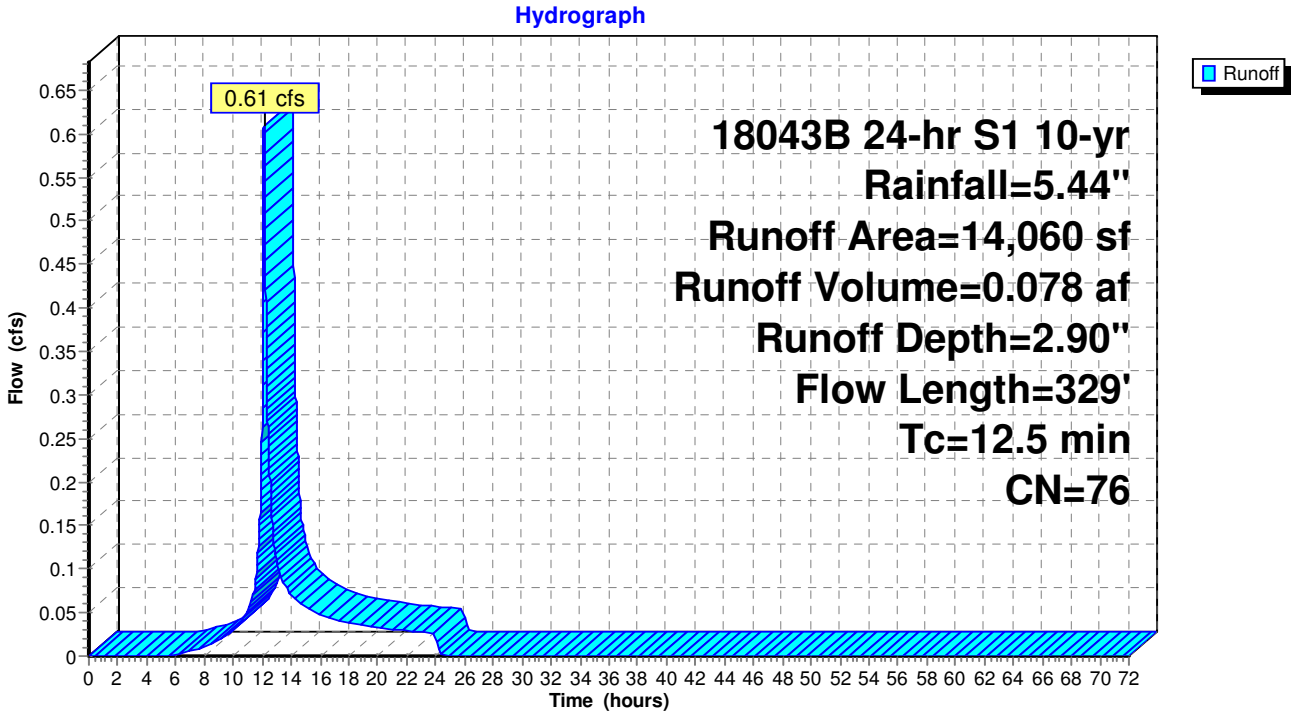
Runoff = 0.61 cfs @ 12.12 hrs, Volume= 0.078 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
7,680	61	>75% Grass cover, Good, HSG B
5,088	98	Paved parking, HSG B
1,282	74	>75% Grass cover, Good, HSG C
10	98	Paved parking, HSG C
14,060	76	Weighted Average
8,962		63.74% Pervious Area
5,098		36.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0300	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.1	229	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.5	329	Total			

Subcatchment 1: 1



Summary for Subcatchment 2: 2

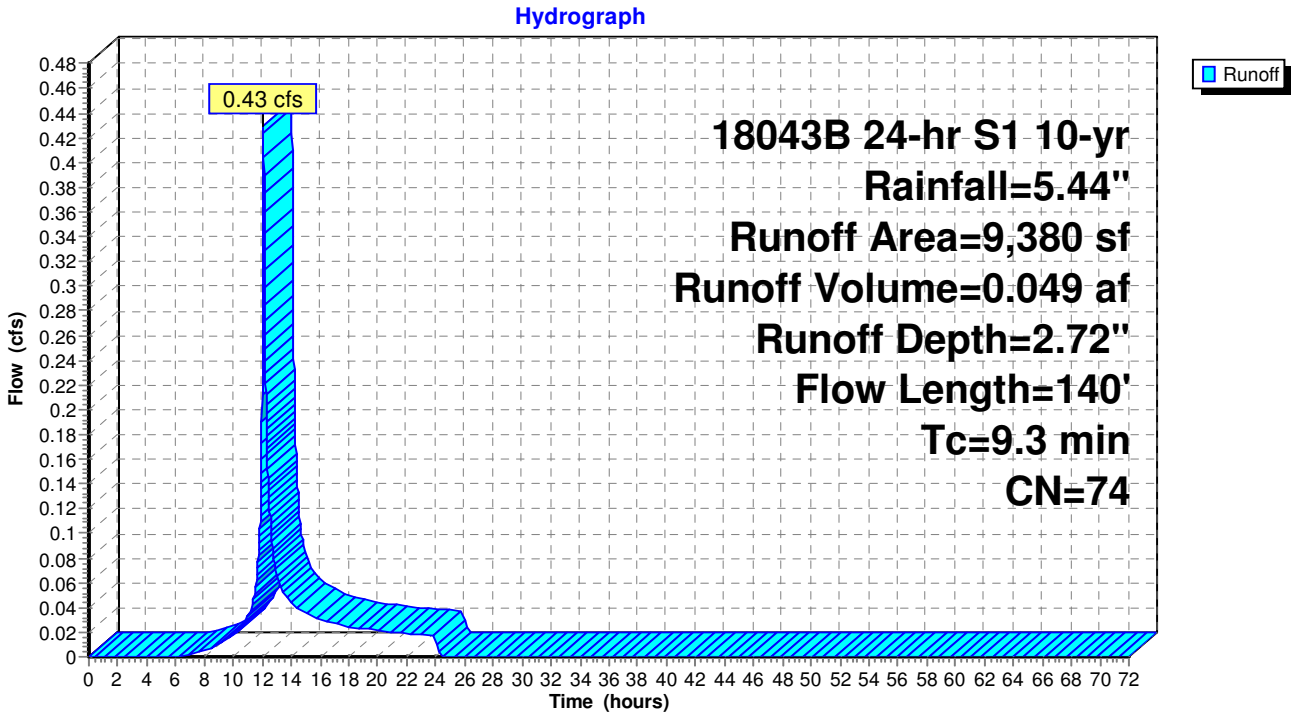
Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.049 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
4,915	74	Pasture/grassland/range, Good, HSG C
4,287	74	>75% Grass cover, Good, HSG C
178	98	Paved parking, HSG C
9,380	74	Weighted Average
9,202		98.10% Pervious Area
178		1.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0530	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.2	40	0.0750	4.11		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
9.3	140	Total			

Subcatchment 2: 2



Summary for Subcatchment 3: 3

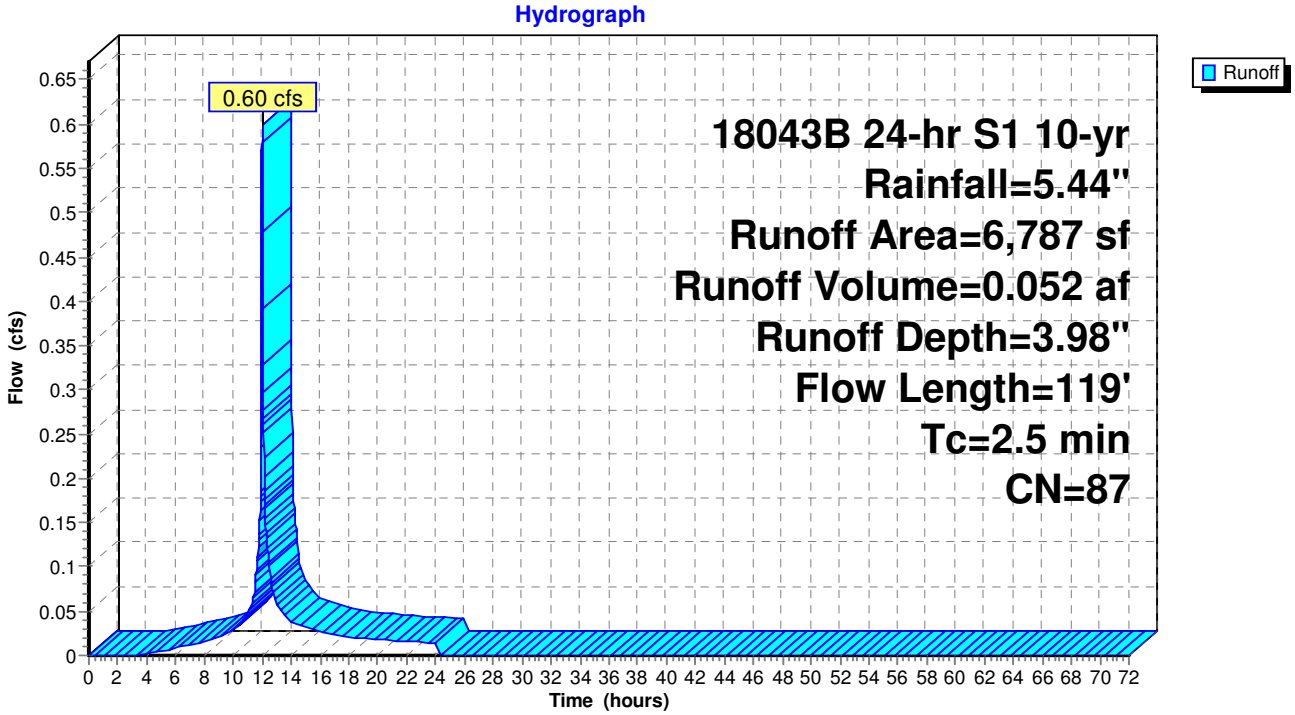
Runoff = 0.60 cfs @ 12.00 hrs, Volume= 0.052 af, Depth= 3.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
2,054	61	>75% Grass cover, Good, HSG B
4,733	98	Paved parking, HSG B
6,787	87	Weighted Average
2,054		30.26% Pervious Area
4,733		69.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	26	0.2310	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.8	93	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	119	Total			

Subcatchment 3: 3



Summary for Subcatchment 4: 4

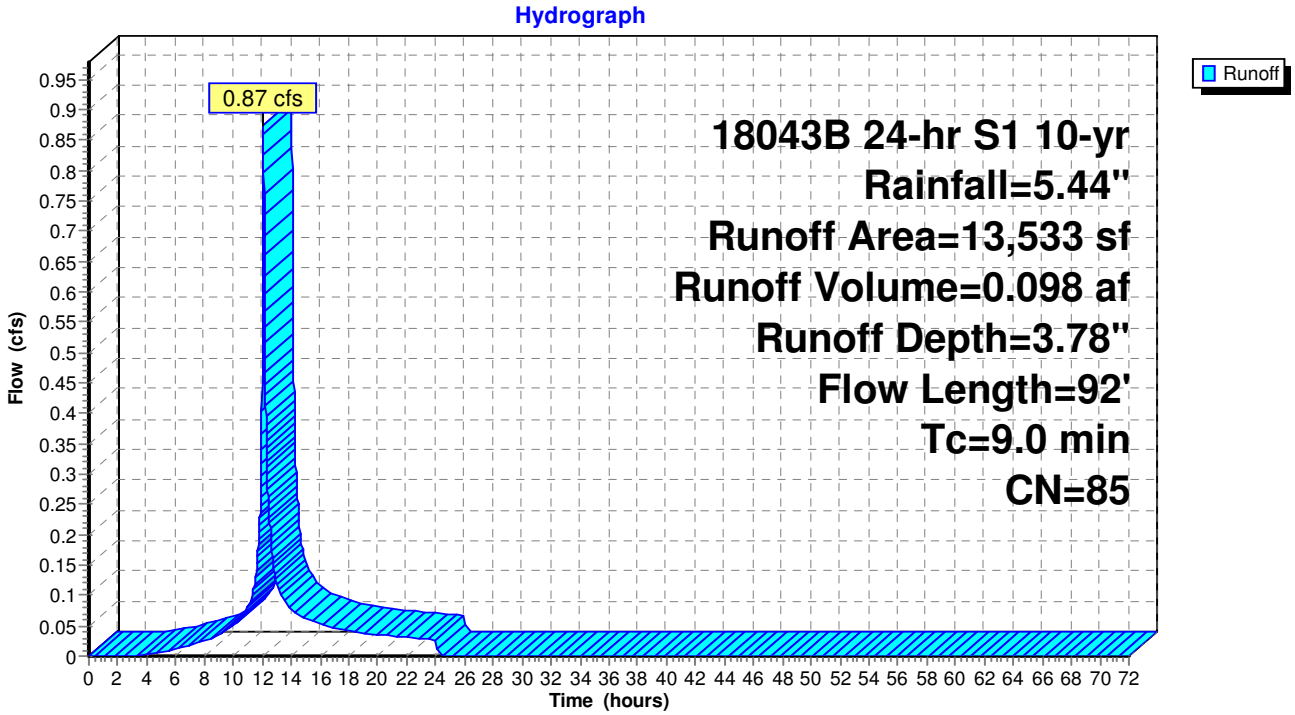
Runoff = 0.87 cfs @ 12.07 hrs, Volume= 0.098 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
2,502	61	>75% Grass cover, Good, HSG B
4,130	98	Paved parking, HSG B
3,418	74	>75% Grass cover, Good, HSG C
3,483	98	Paved parking, HSG C
13,533	85	Weighted Average
5,920		43.74% Pervious Area
7,613		56.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	59	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.2	33	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	92	Total			

Subcatchment 4: 4



Summary for Subcatchment 5: 5

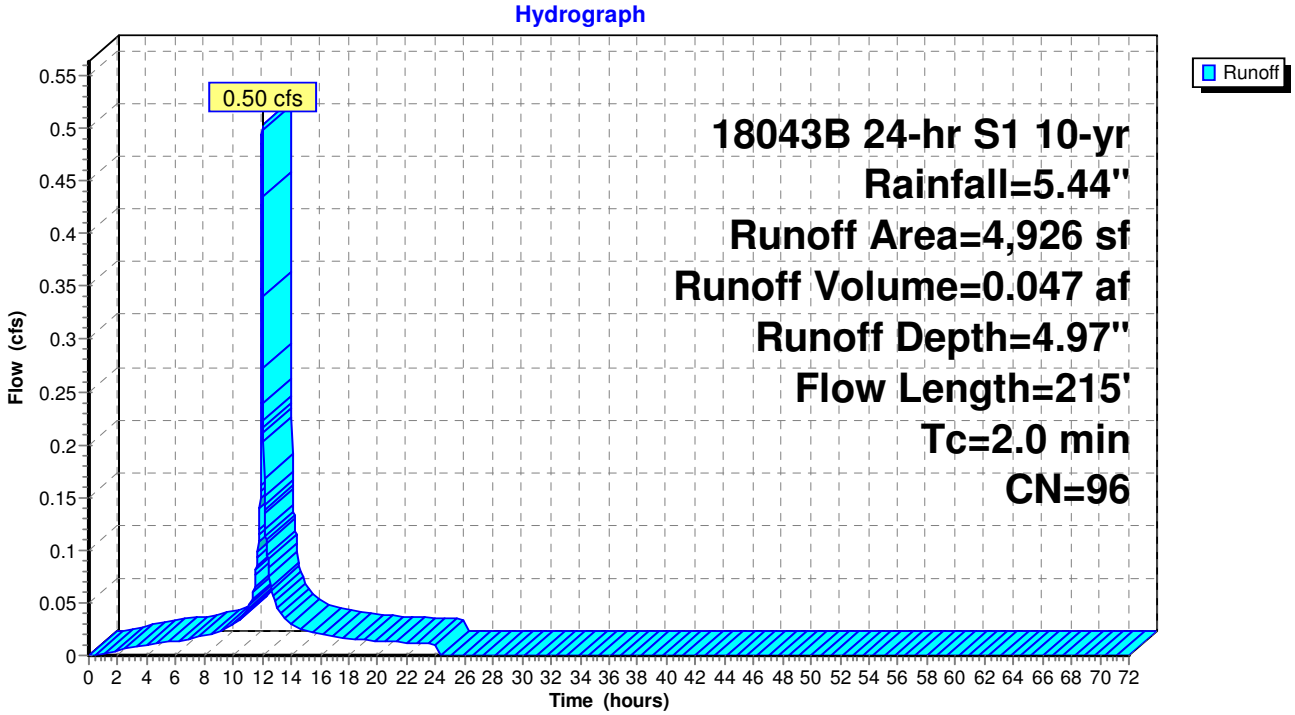
Runoff = 0.50 cfs @ 12.00 hrs, Volume= 0.047 af, Depth= 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
463	74	>75% Grass cover, Good, HSG C
4,463	98	Paved parking, HSG C
4,926	96	Weighted Average
463		9.40% Pervious Area
4,463		90.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	5	0.0200	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.8	210	0.0450	4.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	215	Total			

Subcatchment 5: 5



Summary for Subcatchment 6: 6

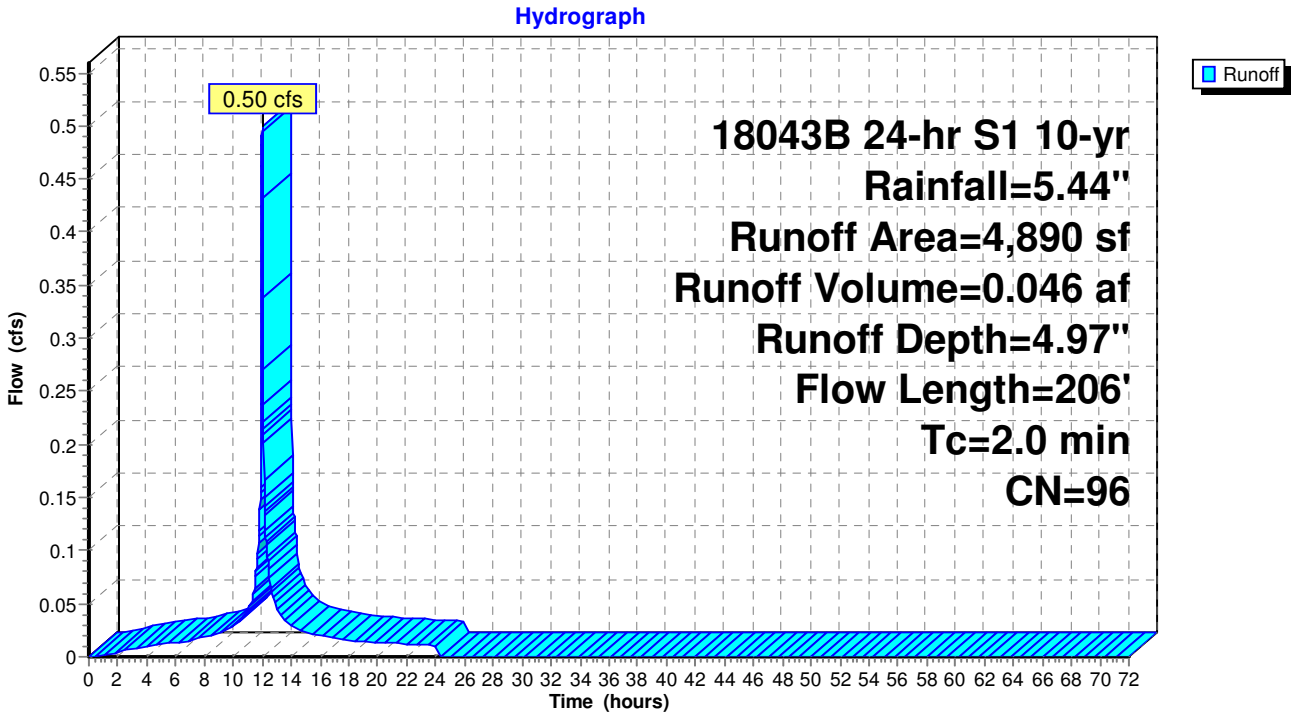
Runoff = 0.50 cfs @ 12.00 hrs, Volume= 0.046 af, Depth= 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
195	98	Paved parking, HSG B
379	74	>75% Grass cover, Good, HSG C
4,316	98	Paved parking, HSG C
4,890	96	Weighted Average
379		7.75% Pervious Area
4,511		92.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	5	0.0200	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.8	201	0.0450	4.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	206	Total			

Subcatchment 6: 6



Summary for Subcatchment 7: 7

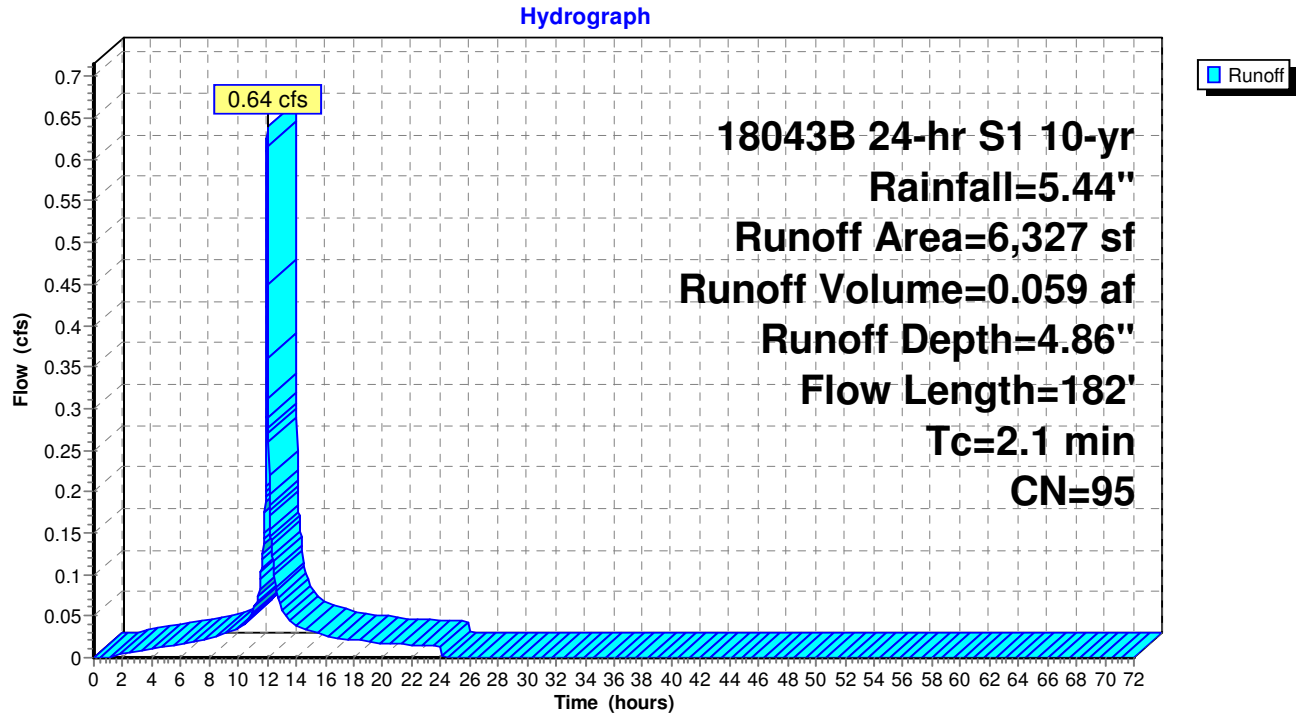
Runoff = 0.64 cfs @ 12.00 hrs, Volume= 0.059 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
84	61	>75% Grass cover, Good, HSG B
45	98	Unconnected pavement, HSG B
874	98	Paved parking, HSG B
536	74	>75% Grass cover, Good, HSG C
4,786	98	Paved parking, HSG C
2	80	>75% Grass cover, Good, HSG D
6,327	95	Weighted Average
622		9.83% Pervious Area
5,705		90.17% Impervious Area
45		0.79% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	5	0.0200	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.9	177	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	182	Total			

Subcatchment 7: 7



Summary for Subcatchment 8: 8

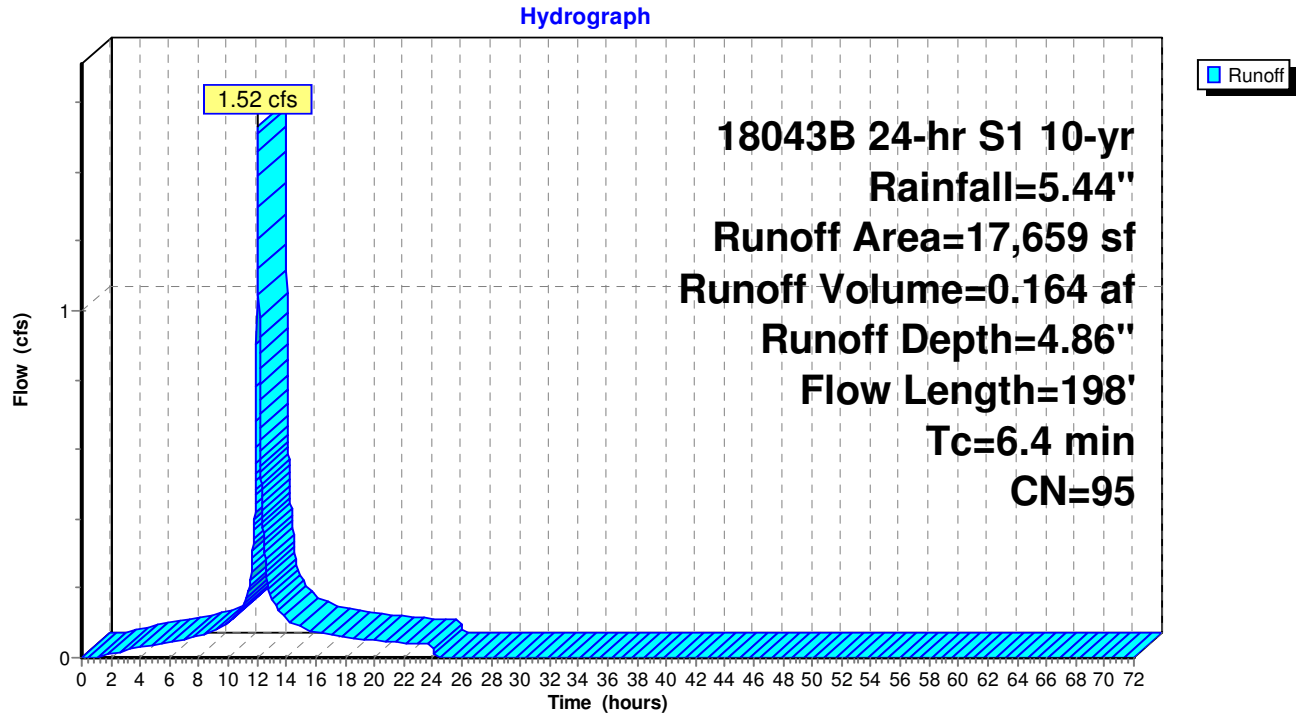
Runoff = 1.52 cfs @ 12.04 hrs, Volume= 0.164 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
84	61	>75% Grass cover, Good, HSG B
52	98	Unconnected pavement, HSG B
478	98	Paved parking, HSG B
1,758	74	>75% Grass cover, Good, HSG C
317	98	Unconnected pavement, HSG C
14,970	98	Paved parking, HSG C
17,659	95	Weighted Average
1,842		10.43% Pervious Area
15,817		89.57% Impervious Area
369		2.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	23	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.9	175	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	198	Total			

Subcatchment 8: 8



Summary for Subcatchment 9: 9

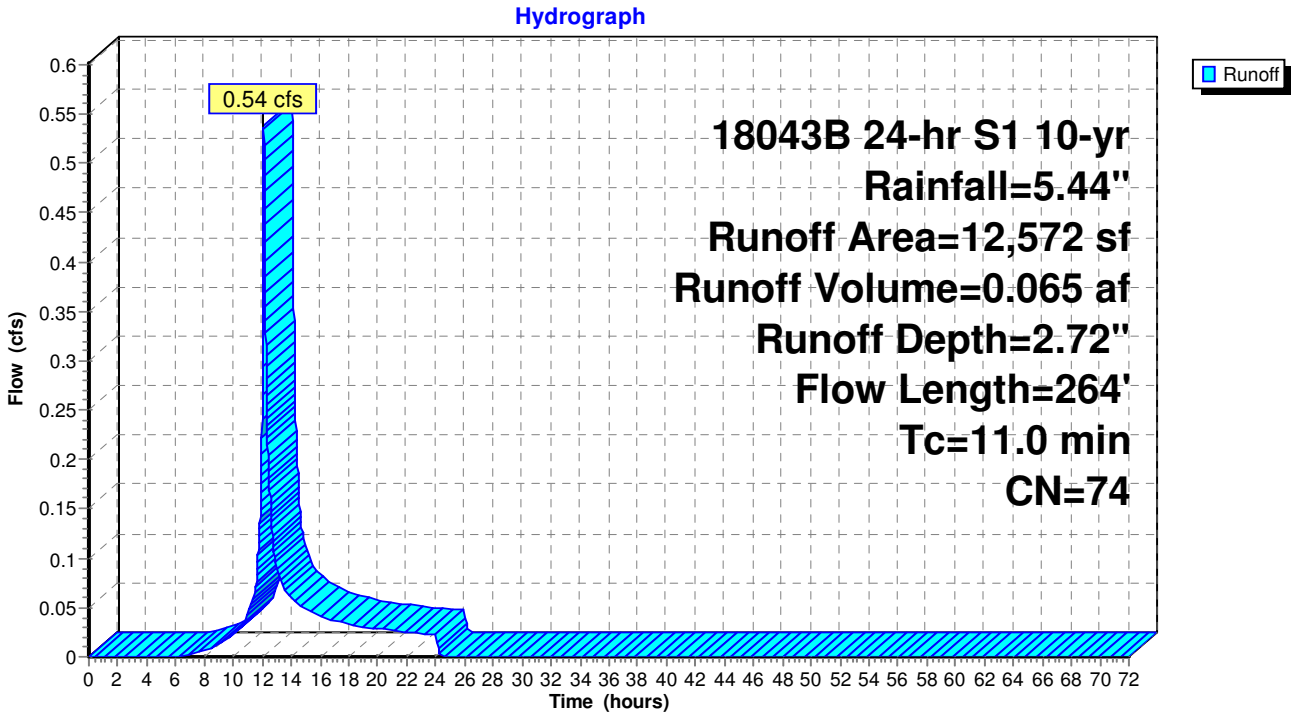
Runoff = 0.54 cfs @ 12.10 hrs, Volume= 0.065 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
12,536	74	>75% Grass cover, Good, HSG C
36	98	Unconnected pavement, HSG C
12,572	74	Weighted Average
12,536		99.71% Pervious Area
36		0.29% Impervious Area
36		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	100	0.0400	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.8	164	0.0310	3.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.0	264	Total			

Subcatchment 9: 9



Summary for Subcatchment 10: 10

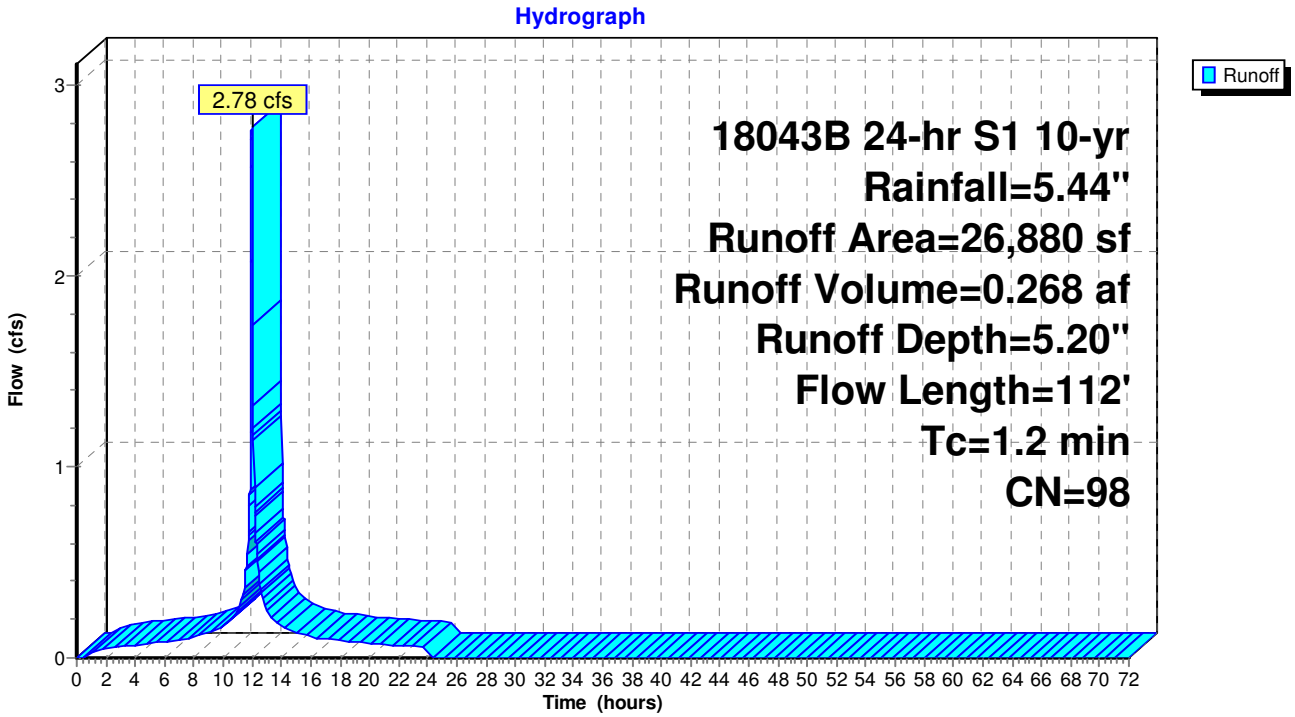
Runoff = 2.78 cfs @ 11.99 hrs, Volume= 0.268 af, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
19,451	98	Roofs, HSG B
7,429	98	Roofs, HSG C
26,880	98	Weighted Average
26,880		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	112		1.56		**Direct Entry, Roof**

Subcatchment 10: 10



Summary for Subcatchment 11: 11

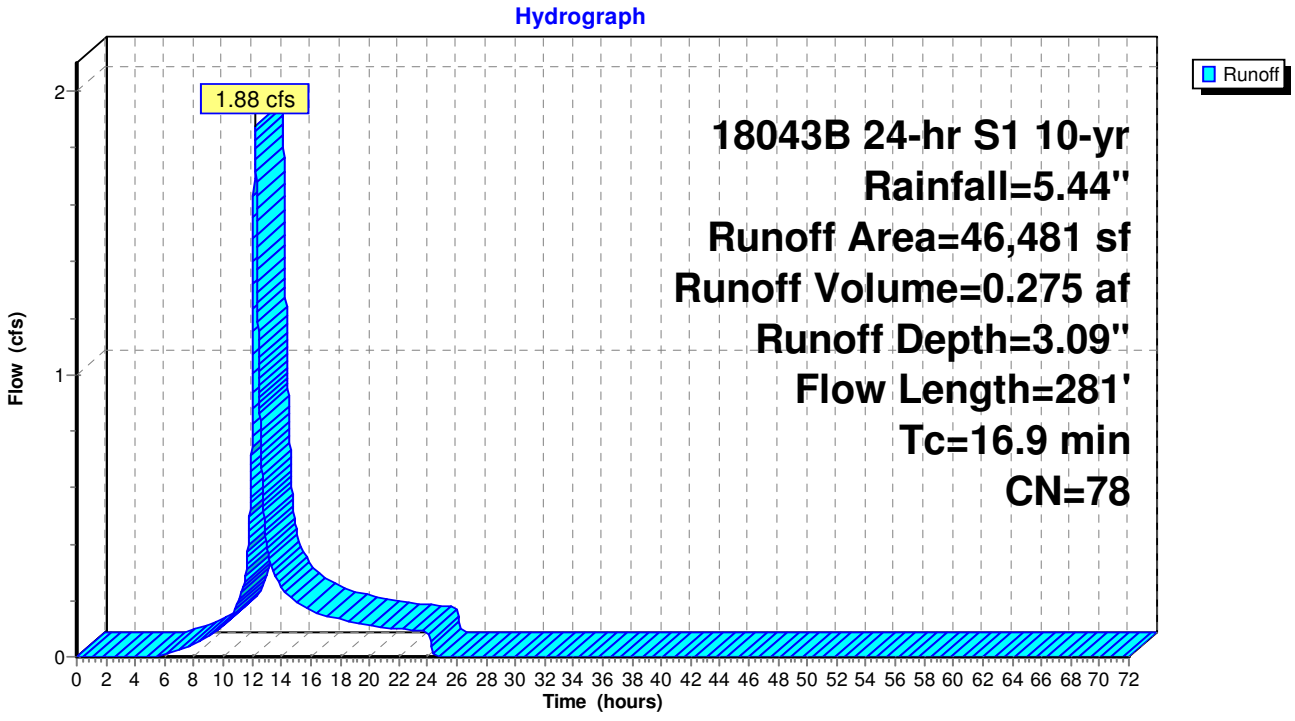
Runoff = 1.88 cfs @ 12.19 hrs, Volume= 0.275 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
10,415	74	Pasture/grassland/range, Good, HSG C
6,147	74	>75% Grass cover, Good, HSG C
24,971	80	Pasture/grassland/range, Good, HSG D
4,948	80	>75% Grass cover, Good, HSG D
46,481	78	Weighted Average
46,481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0350	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
6.1	181	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.9	281	Total			

Subcatchment 11: 11



Summary for Subcatchment 12: 12

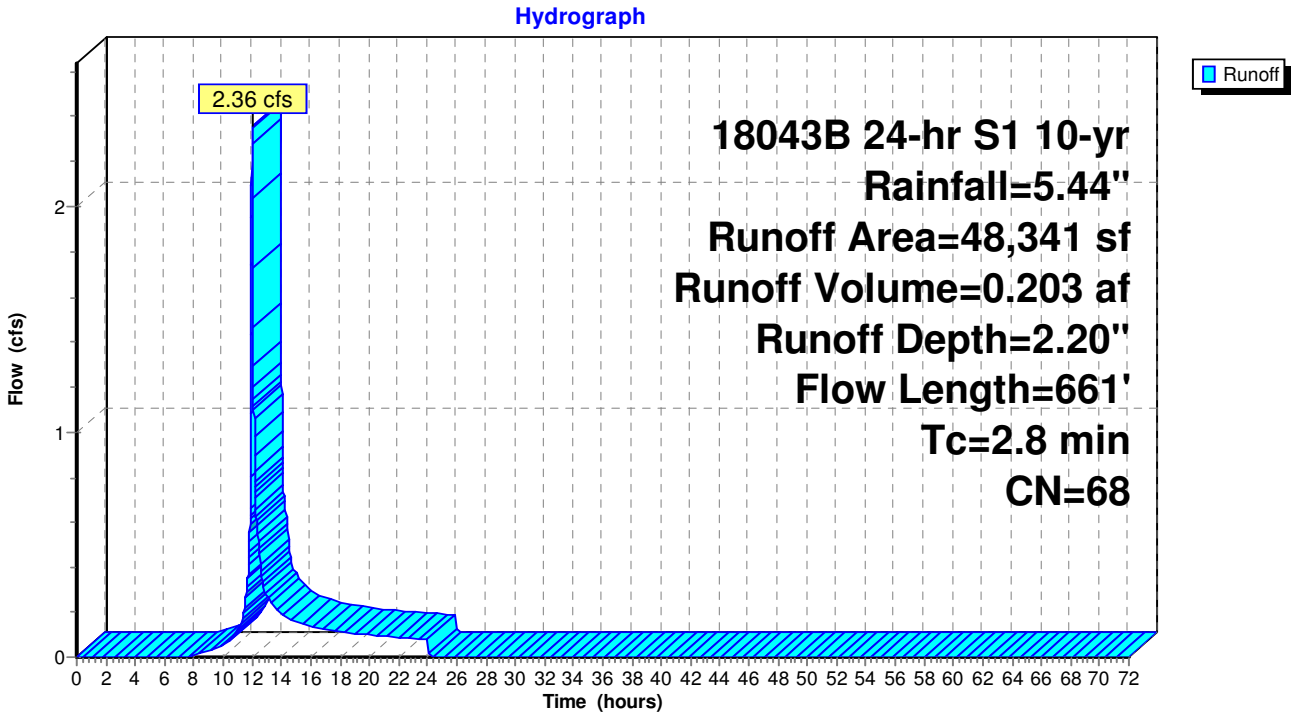
Runoff = 2.36 cfs @ 12.01 hrs, Volume= 0.203 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
13,993	61	Pasture/grassland/range, Good, HSG B
13,481	61	>75% Grass cover, Good, HSG B
0	98	Paved parking, HSG B
4,340	74	Pasture/grassland/range, Good, HSG C
1,948	74	>75% Grass cover, Good, HSG C
14,043	80	Pasture/grassland/range, Good, HSG D
536	80	>75% Grass cover, Good, HSG D
48,341	68	Weighted Average
48,341		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	74	0.0840	2.03		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	229	0.0570	7.60	50.69	**Parabolic Channel,** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
1.6	334	0.0120	3.39	13.57	**Parabolic Channel,** W=6.00' D=1.00' Area=4.0 sf Perim=6.4' n= 0.035 Earth, dense weeds
2.8	661	Total			

Subcatchment 12: 12



Summary for Subcatchment 13: 13

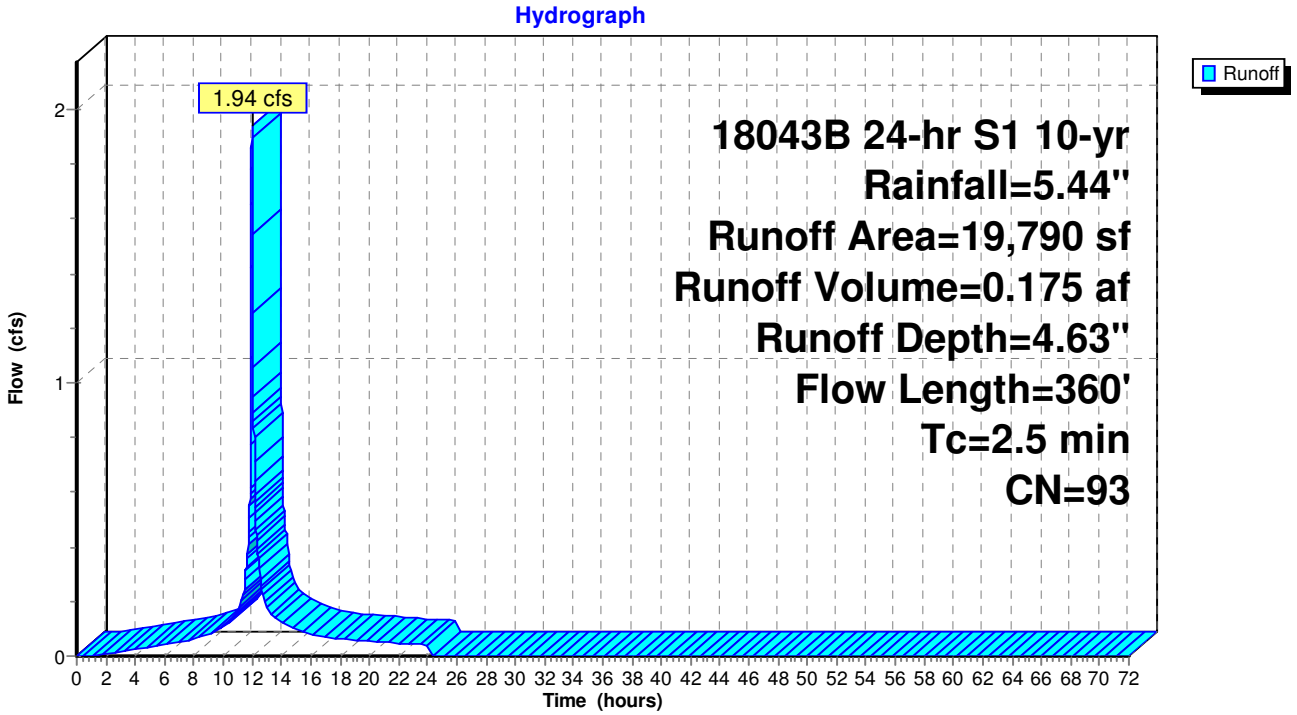
Runoff = 1.94 cfs @ 12.00 hrs, Volume= 0.175 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
3,197	74	>75% Grass cover, Good, HSG C
7,061	98	Paved parking, HSG C
1,327	80	>75% Grass cover, Good, HSG D
8,205	98	Paved parking, HSG D
19,790	93	Weighted Average
4,524		22.86% Pervious Area
15,266		77.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	244	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	116	0.0300	2.60		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.5	360	Total			

Subcatchment 13: 13



Summary for Subcatchment 14: 14

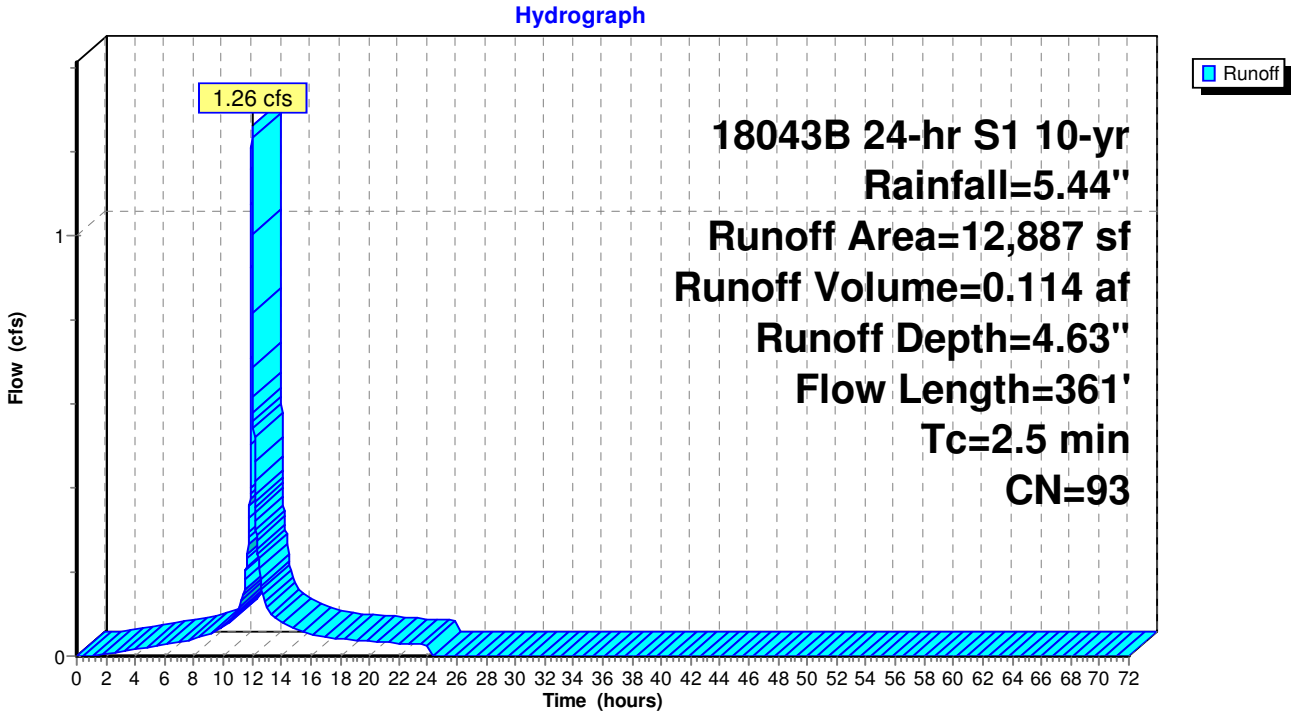
Runoff = 1.26 cfs @ 12.00 hrs, Volume= 0.114 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
1,626	98	Paved parking, HSG B
1,102	98	Paved parking, HSG C
3,806	80	>75% Grass cover, Good, HSG D
6,353	98	Paved parking, HSG D
12,887	93	Weighted Average
3,806		29.53% Pervious Area
9,081		70.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	356	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	5	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.5	361	Total			

Subcatchment 14: 14



Summary for Subcatchment 15: 15

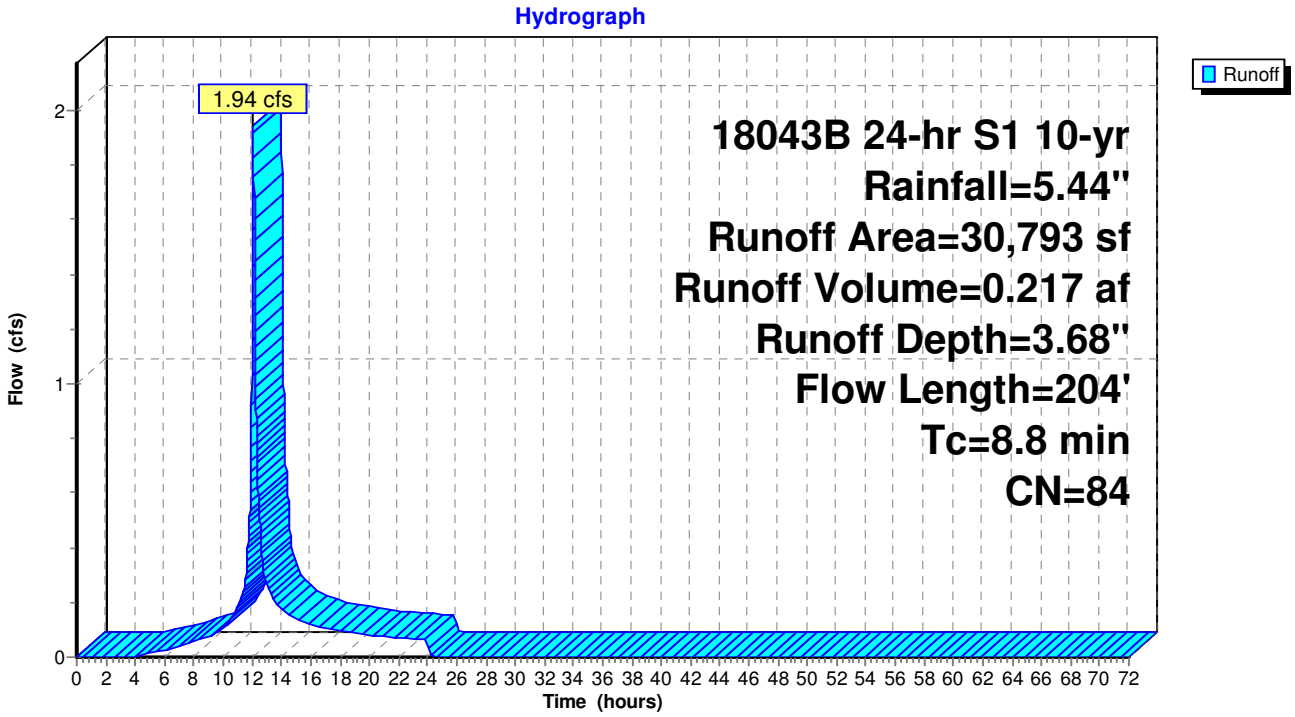
Runoff = 1.94 cfs @ 12.07 hrs, Volume= 0.217 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
1,966	61	Pasture/grassland/range, Good, HSG B
1,236	61	>75% Grass cover, Good, HSG B
4,159	98	Paved parking, HSG B
2,433	74	Pasture/grassland/range, Good, HSG C
652	74	>75% Grass cover, Good, HSG C
938	98	Paved parking, HSG C
9,581	80	Pasture/grassland/range, Good, HSG D
3,321	80	>75% Grass cover, Good, HSG D
6,507	98	Paved parking, HSG D
30,793	84	Weighted Average
19,189		62.32% Pervious Area
11,604		37.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	54	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.8	150	0.0050	1.38	6.74	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=0.50' Z= 3.0 & 20.0 '/' Top.W=15.50' n= 0.035 Earth, dense weeds
8.8	204	Total			

Subcatchment 15: 15



Summary for Subcatchment 16: 16

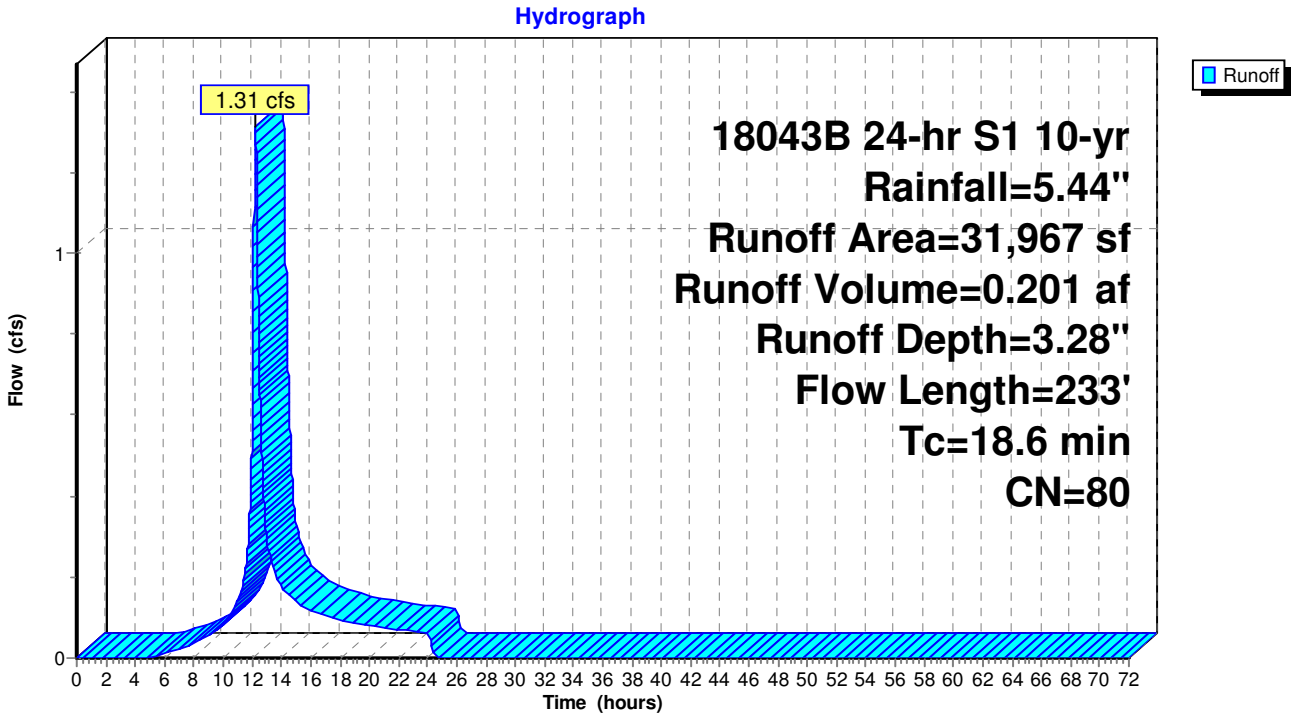
Runoff = 1.31 cfs @ 12.21 hrs, Volume= 0.201 af, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
27,319	80	Pasture/grassland/range, Good, HSG D
4,648	80	>75% Grass cover, Good, HSG D
31,967	80	Weighted Average
31,967		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0130	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.6	133	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
18.6	233	Total			

Subcatchment 16: 16



Summary for Subcatchment 17: 17

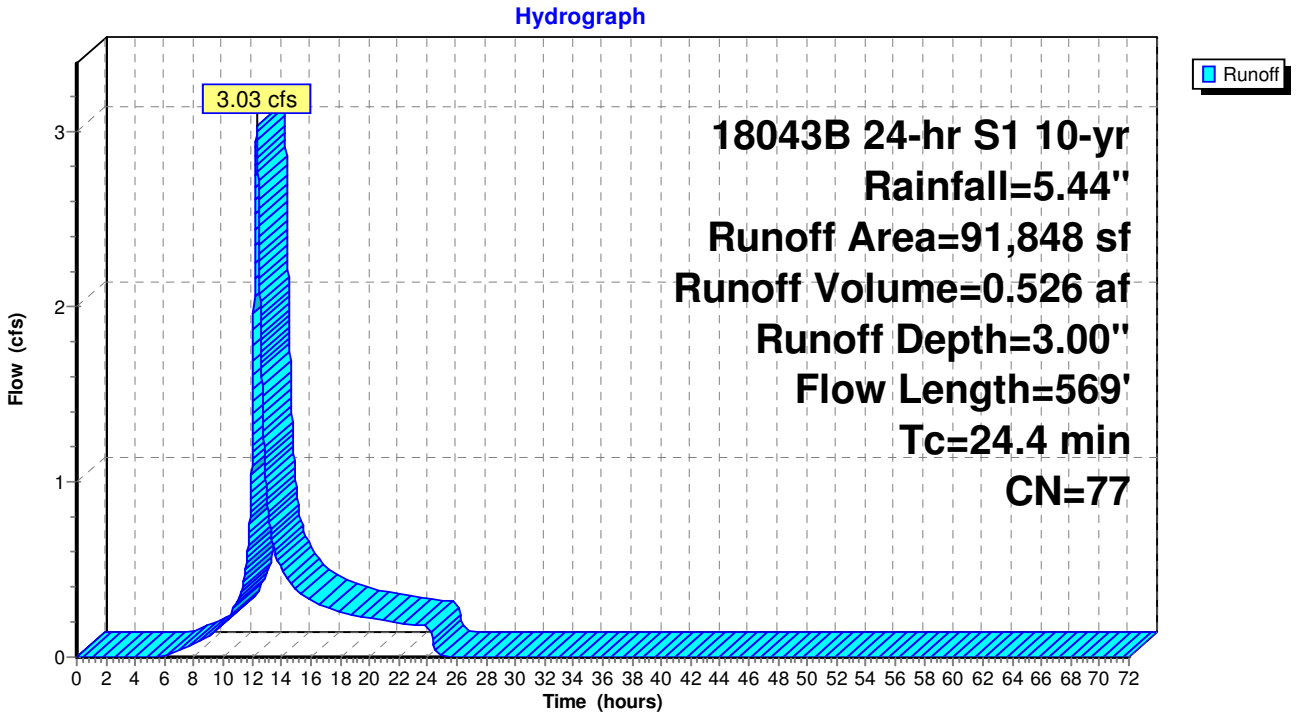
Runoff = 3.03 cfs @ 12.28 hrs, Volume= 0.526 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
1,075	61	Pasture/grassland/range, Good, HSG B
287	61	>75% Grass cover, Good, HSG B
33,624	74	Pasture/grassland/range, Good, HSG C
1,199	74	>75% Grass cover, Good, HSG C
49,379	80	Pasture/grassland/range, Good, HSG D
6,284	80	>75% Grass cover, Good, HSG D
91,848	77	Weighted Average
91,848		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
5.9	259	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	210	0.0130	5.02	45.16	**Parabolic Channel,** W=7.50' D=1.80' Area=9.0 sf Perim=8.5' n= 0.035 Earth, dense weeds
24.4	569	Total			

Subcatchment 17: 17



Summary for Subcatchment 18: 18

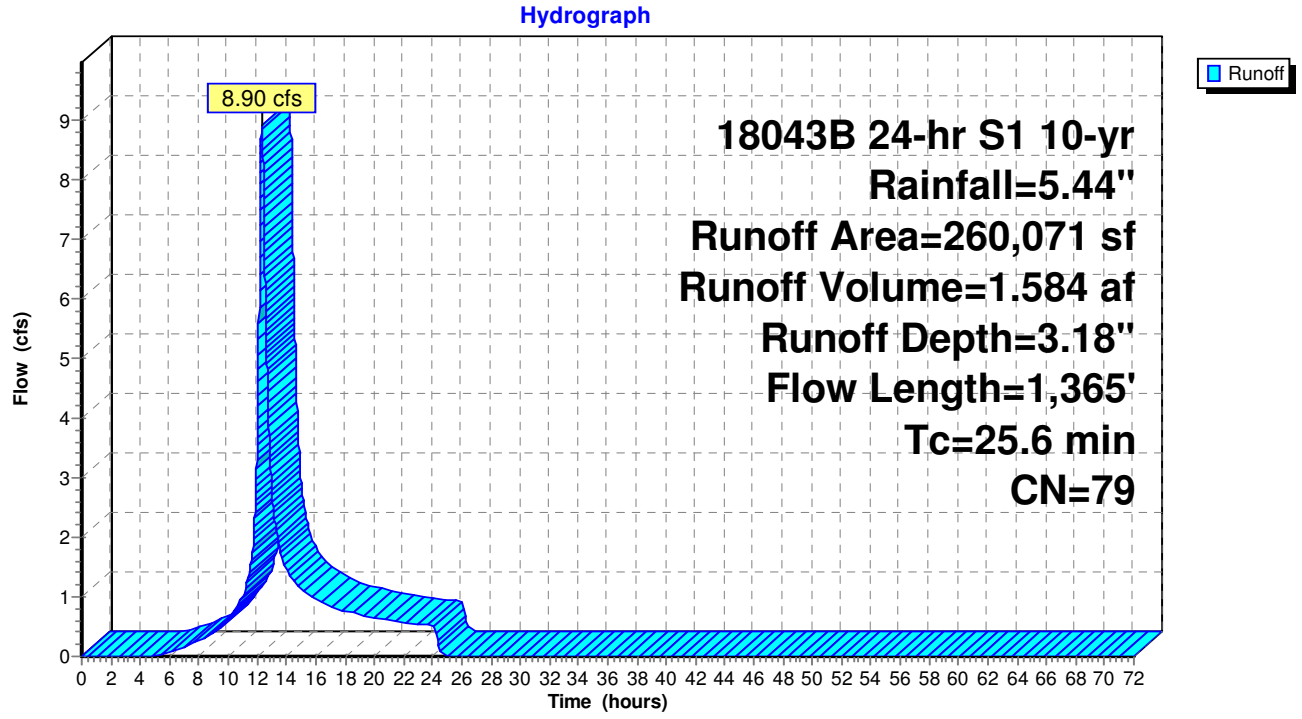
Runoff = 8.90 cfs @ 12.31 hrs, Volume= 1.584 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
59,084	74	Pasture/grassland/range, Good, HSG C
3,876	74	>75% Grass cover, Good, HSG C
193,175	80	Pasture/grassland/range, Good, HSG D
3,936	80	>75% Grass cover, Good, HSG D
260,071	79	Weighted Average
260,071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0320	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
10.9	562	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.6	703	0.0050	3.22	38.63	**Parabolic Channel,** W=10.00' D=1.80' Area=12.0 sf Perim=10.8' n= 0.035 Earth, dense weeds
25.6	1,365	Total			

Subcatchment 18: 18



Summary for Subcatchment 19: 19

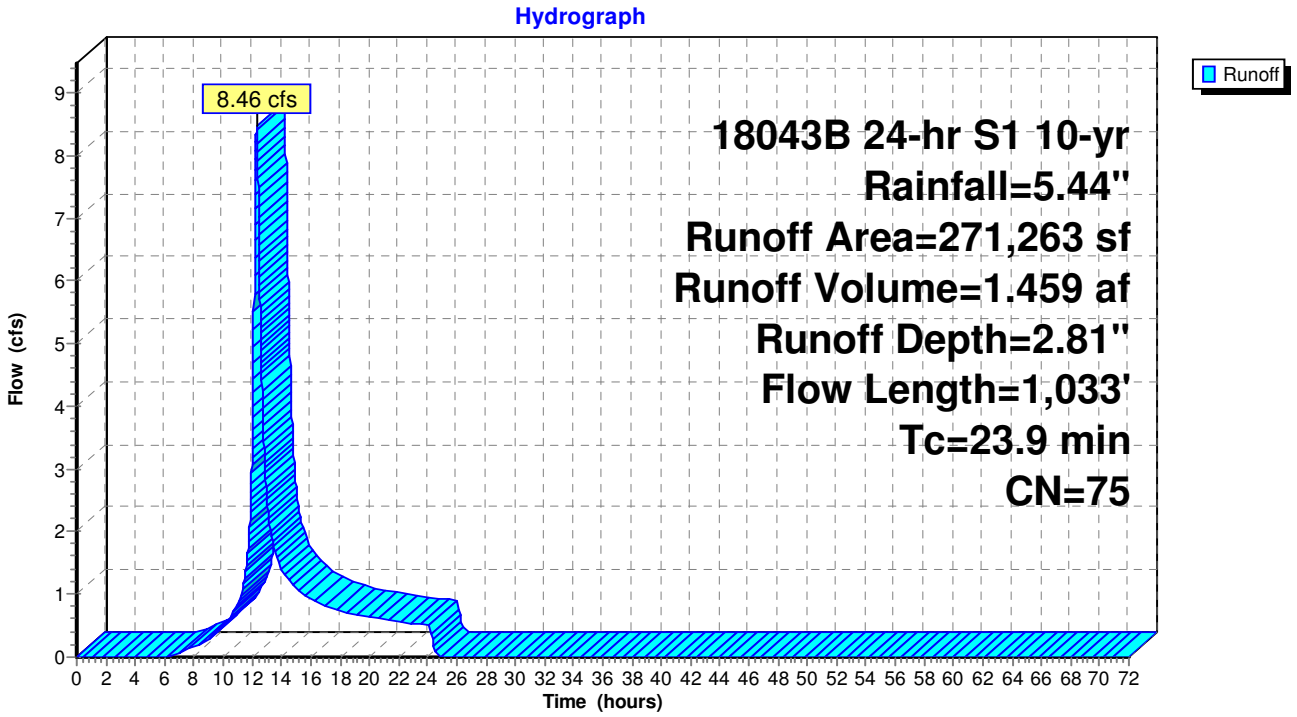
Runoff = 8.46 cfs @ 12.29 hrs, Volume= 1.459 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
29,995	61	Pasture/grassland/range, Good, HSG B
2,935	61	>75% Grass cover, Good, HSG B
125,213	74	Pasture/grassland/range, Good, HSG C
2,894	74	>75% Grass cover, Good, HSG C
110,226	80	Pasture/grassland/range, Good, HSG D
271,263	75	Weighted Average
271,263		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0320	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.6	290	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	248	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	224	0.0060	2.49	24.90	**Parabolic Channel,** W=15.00' D=1.00' Area=10.0 sf Perim=15.2' n= 0.035 Earth, dense weeds
0.8	171	0.0100	3.64	27.31	**Parabolic Channel,** W=9.00' D=1.25' Area=7.5 sf Perim=9.4' n= 0.035 Earth, dense weeds
23.9	1,033	Total			

Subcatchment 19: 19



Summary for Subcatchment 20: 20

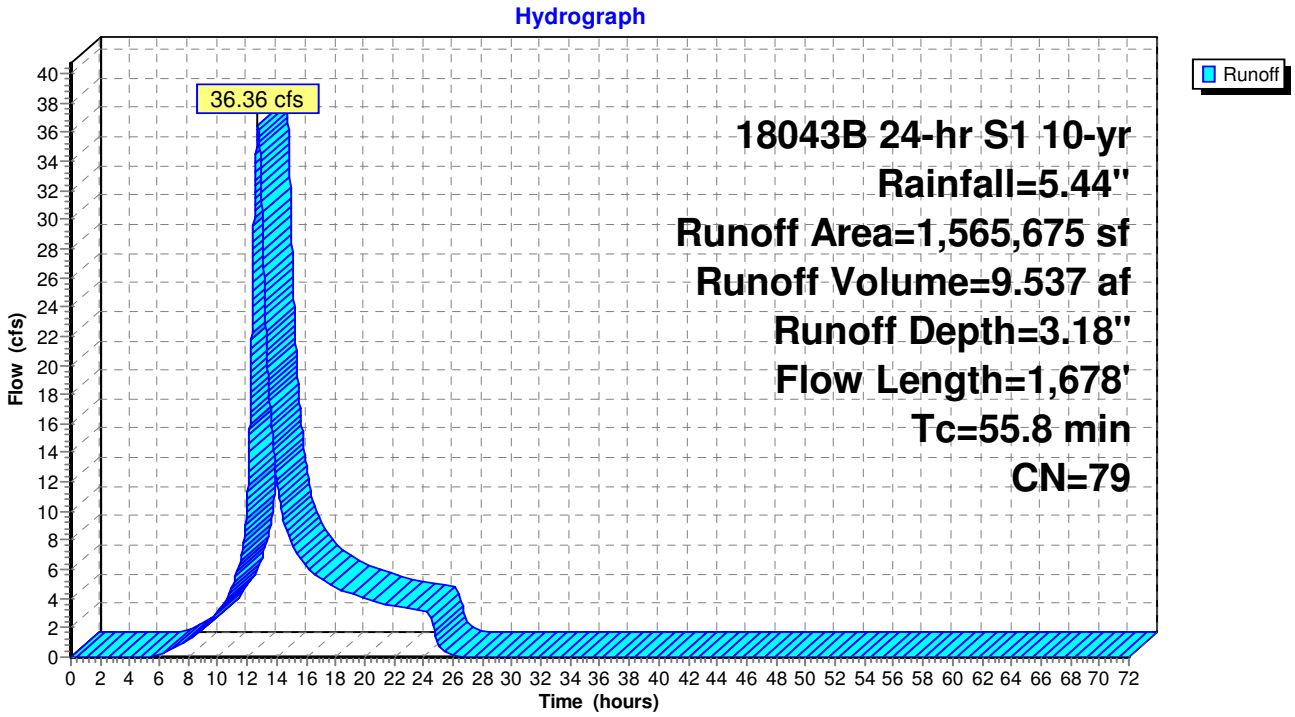
Runoff = 36.36 cfs @ 12.71 hrs, Volume= 9.537 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
289,410	74	Pasture/grassland/range, Good, HSG C
1,276,265	80	Pasture/grassland/range, Good, HSG D
1,565,675	79	Weighted Average
1,565,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	100	0.0080	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.2	97	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.9	798	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.1	234	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	278	0.0070	3.93	41.87	**Parabolic Channel,** W=8.00' D=2.00' Area=10.7 sf Perim=9.2' n= 0.035 Earth, dense weeds
1.0	171	0.0050	2.89	28.93	**Parabolic Channel,** W=10.00' D=1.50' Area=10.0 sf Perim=10.6' n= 0.035 Earth, dense weeds
55.8	1,678	Total			

Subcatchment 20: 20



Summary for Subcatchment 21: 21

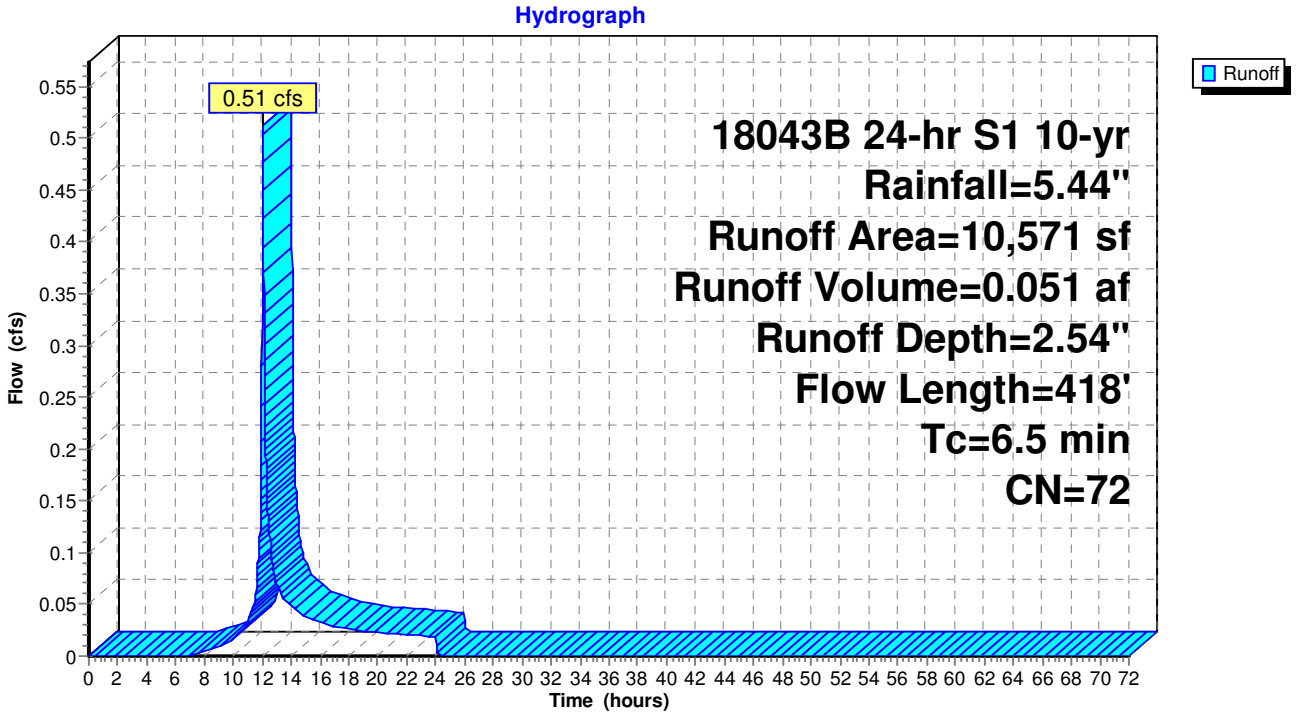
Runoff = 0.51 cfs @ 12.04 hrs, Volume= 0.051 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
3,466	61	Pasture/grassland/range, Good, HSG B
245	61	>75% Grass cover, Good, HSG B
1,487	74	Pasture/grassland/range, Good, HSG C
5,373	80	Pasture/grassland/range, Good, HSG D
10,571	72	Weighted Average
10,571		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	21	0.0260	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.0	397	0.0050	2.23	11.90	**Parabolic Channel,** W=8.00' D=1.00' Area=5.3 sf Perim=8.3' n= 0.035 Earth, dense weeds
6.5	418	Total			

Subcatchment 21: 21



Summary for Subcatchment 22: 22

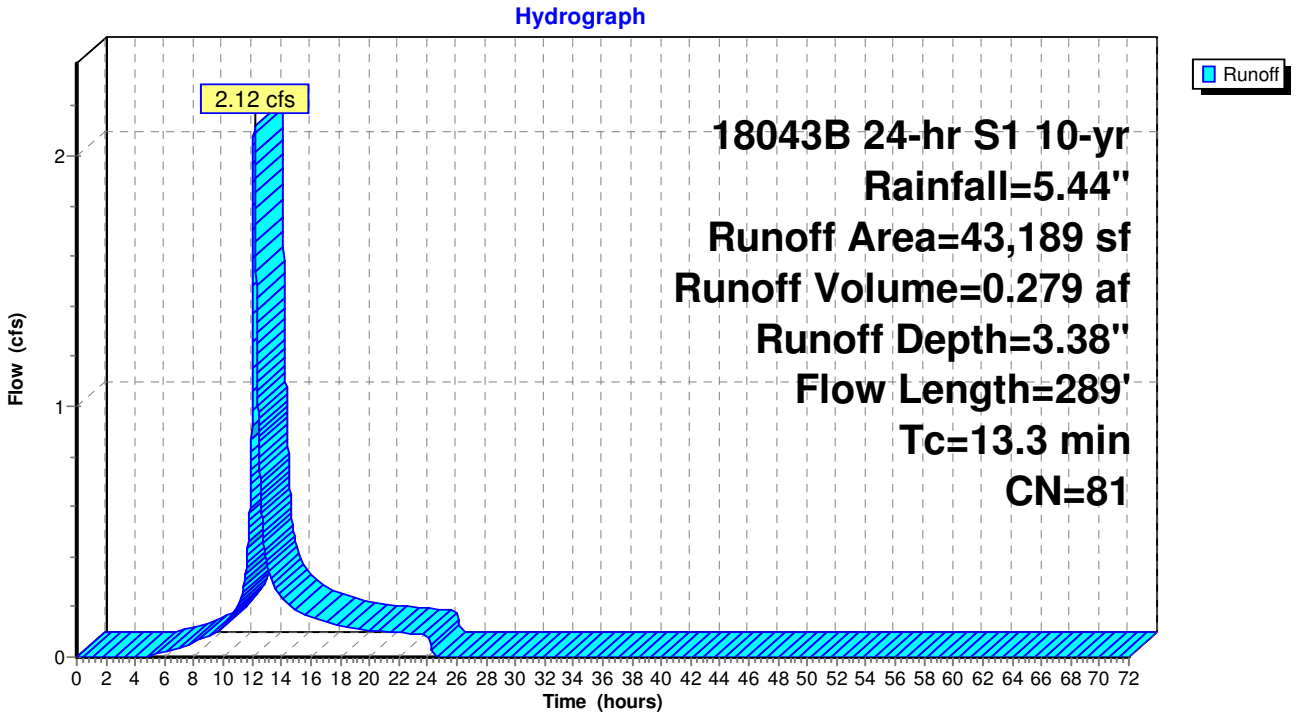
Runoff = 2.12 cfs @ 12.13 hrs, Volume= 0.279 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
12,081	61	Pasture/grassland/range, Good, HSG B
2,299	61	>75% Grass cover, Good, HSG B
9,776	98	Paved parking, HSG B
3,184	74	Pasture/grassland/range, Good, HSG C
4,622	74	>75% Grass cover, Good, HSG C
10,967	98	Paved parking, HSG C
260	80	>75% Grass cover, Good, HSG D
43,189	81	Weighted Average
22,446		51.97% Pervious Area
20,743		48.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0300	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.7	45	0.0220	1.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	144	0.0170	1.96		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.3	289	Total			

Subcatchment 22: 22



Summary for Subcatchment 23: 23

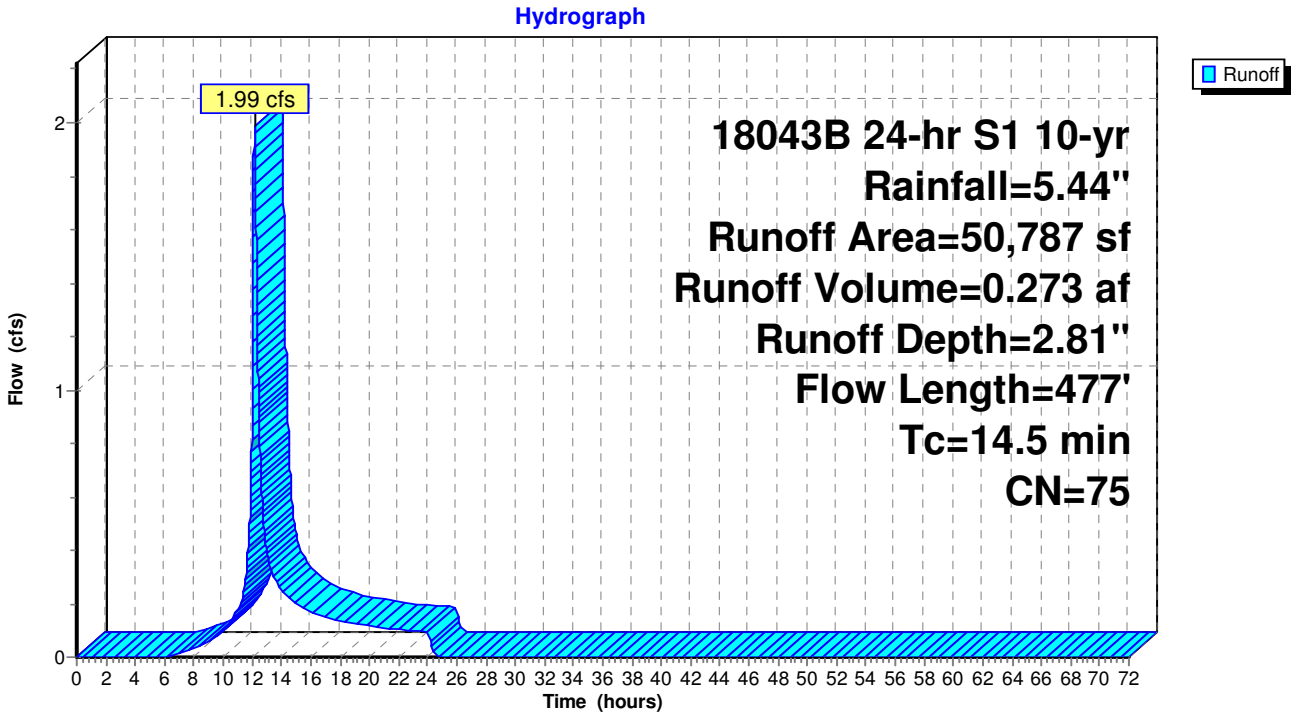
Runoff = 1.99 cfs @ 12.15 hrs, Volume= 0.273 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
18043B 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
9,402	61	Pasture/grassland/range, Good, HSG B
300	61	>75% Grass cover, Good, HSG B
7,247	74	Pasture/grassland/range, Good, HSG C
508	74	>75% Grass cover, Good, HSG C
32,380	80	Pasture/grassland/range, Good, HSG D
950	80	>75% Grass cover, Good, HSG D
50,787	75	Weighted Average
50,787		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0280	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.8	60	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	127	0.0120	3.39	13.57	**Parabolic Channel,** W=6.00' D=1.00' Area=4.0 sf Perim=6.4' n= 0.035 Earth, dense weeds
1.3	190	0.0060	2.40	9.60	**Parabolic Channel,** W=6.00' D=1.00' Area=4.0 sf Perim=6.4' n= 0.035 Earth, dense weeds
14.5	477	Total			

Subcatchment 23: 23



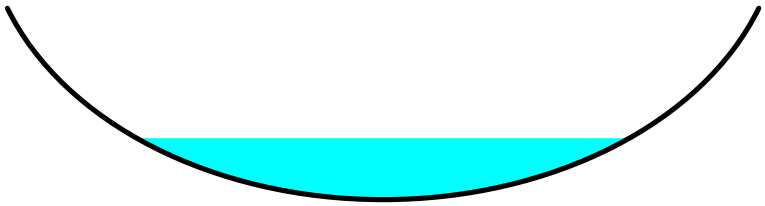
Summary for Reach R1: R1

Inflow Area = 6.062 ac, 34.25% Impervious, Inflow Depth > 3.57" for 10-yr event
Inflow = 3.48 cfs @ 12.03 hrs, Volume= 1.802 af
Outflow = 3.20 cfs @ 12.06 hrs, Volume= 1.802 af, Atten= 8%, Lag= 1.8 min

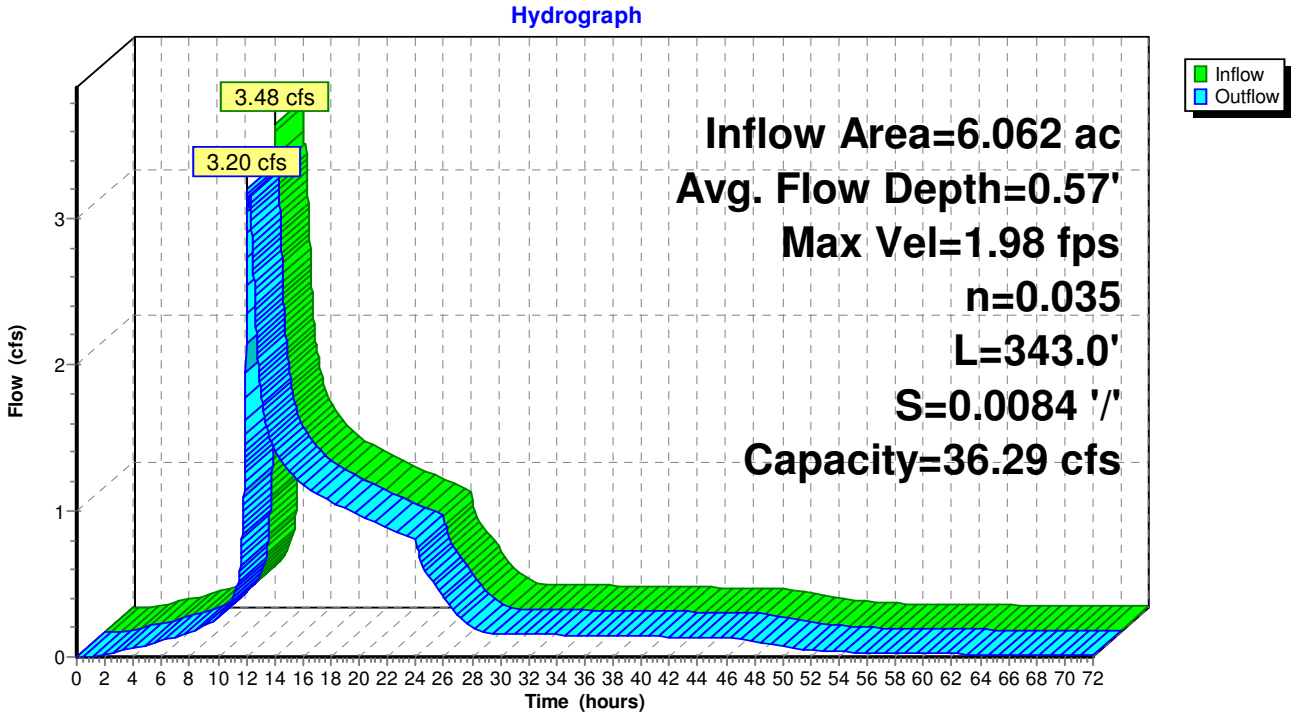
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 7.2 min

Peak Storage= 553 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 4.23'
Bank-Full Depth= 1.80' Flow Area= 9.0 sf, Capacity= 36.29 cfs

7.50' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 343.0' Slope= 0.0084 '/'
Inlet Invert= 100.07', Outlet Invert= 97.19'



Reach R1: R1



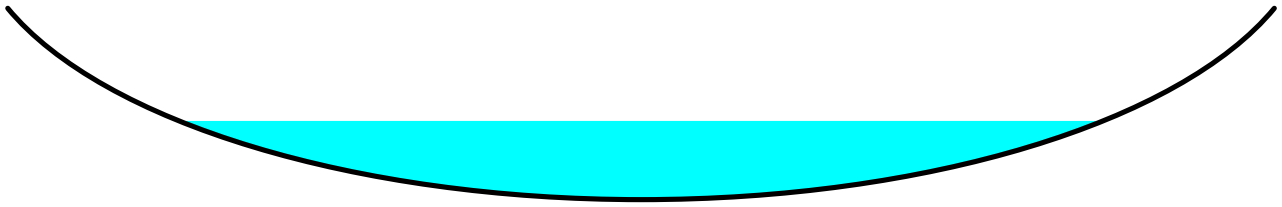
Summary for Reach R10: R10

Inflow Area = 0.454 ac, 77.14% Impervious, Inflow Depth = 4.63" for 10-yr event
Inflow = 0.94 cfs @ 12.06 hrs, Volume= 0.175 af
Outflow = 0.92 cfs @ 12.10 hrs, Volume= 0.175 af, Atten= 2%, Lag= 2.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.11 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 5.3 min

Peak Storage= 90 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.20' , Surface Width= 3.19'
Bank-Full Depth= 0.50' Flow Area= 1.7 sf, Capacity= 6.31 cfs

5.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 206.0' Slope= 0.0141 '/'
Inlet Invert= 101.00', Outlet Invert= 98.10'



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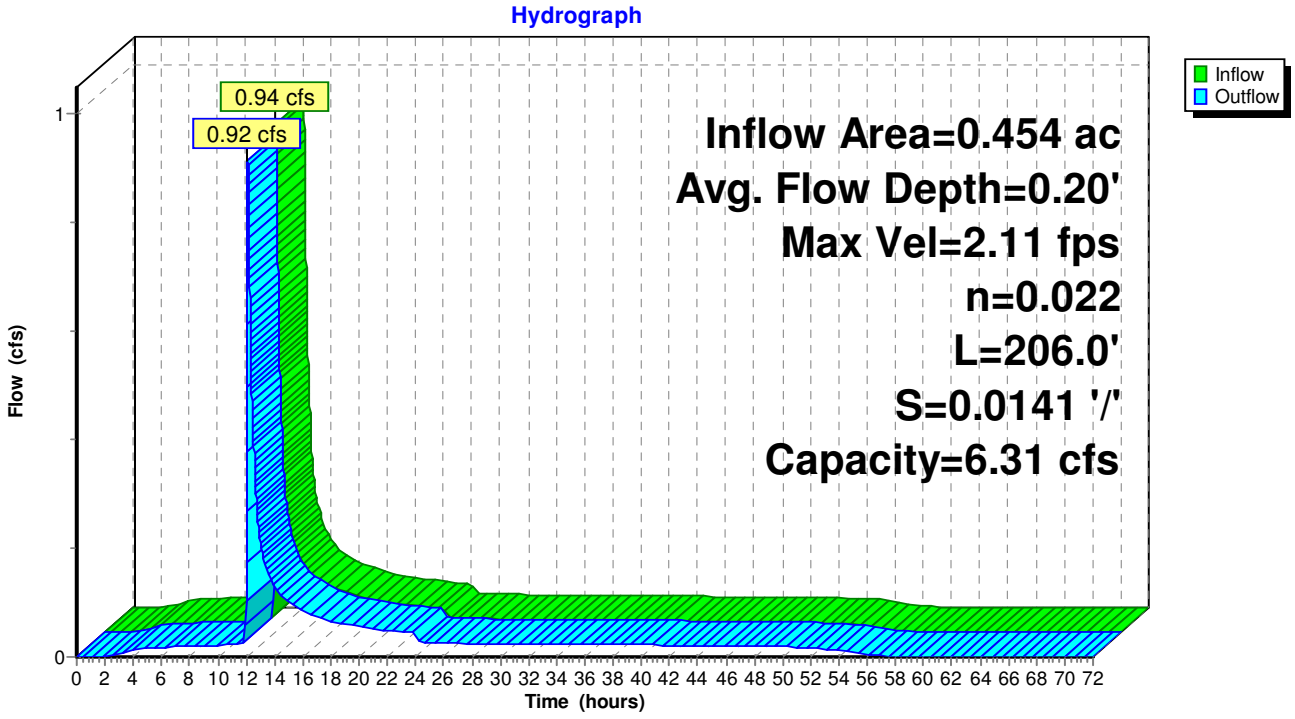
Reach R10: R10



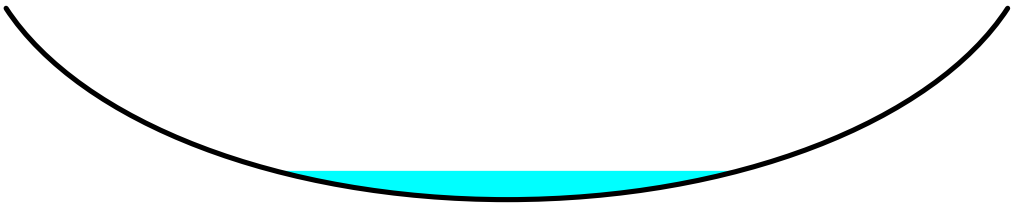
Summary for Reach R11: R11

Inflow Area = 0.454 ac, 77.14% Impervious, Inflow Depth = 4.63" for 10-yr event
Inflow = 0.92 cfs @ 12.10 hrs, Volume= 0.175 af
Outflow = 0.77 cfs @ 12.20 hrs, Volume= 0.175 af, Atten= 16%, Lag= 6.2 min

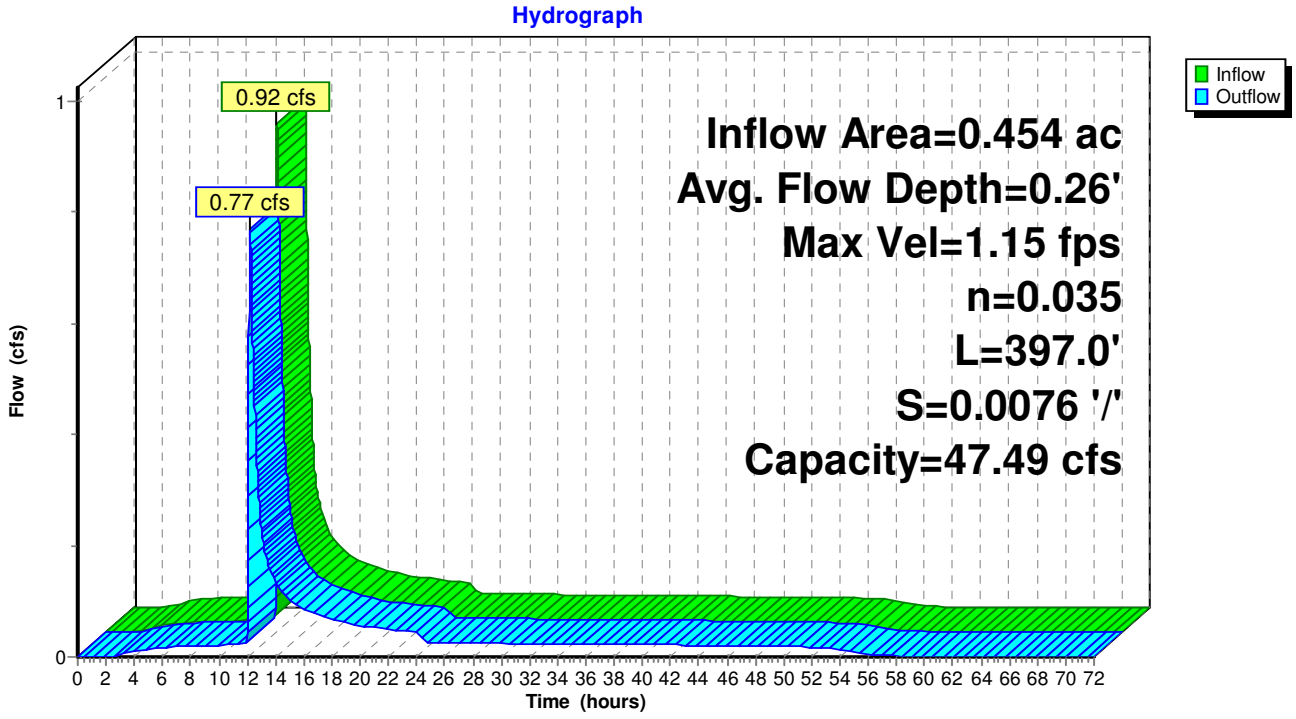
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.15 fps, Min. Travel Time= 5.8 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 17.2 min

Peak Storage= 266 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 3.82'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 47.49 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 397.0' Slope= 0.0076 '/'
Inlet Invert= 98.10', Outlet Invert= 95.10'



Reach R11: R11



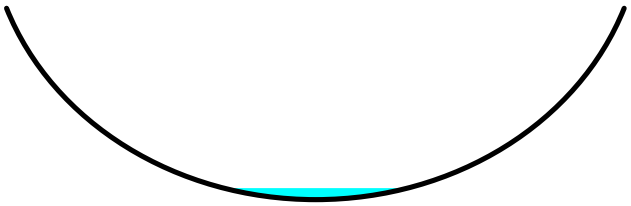
Summary for Reach R12: R12

Inflow Area = 0.243 ac, 0.00% Impervious, Inflow Depth = 2.54" for 10-yr event
Inflow = 0.51 cfs @ 12.04 hrs, Volume= 0.051 af
Outflow = 0.40 cfs @ 12.10 hrs, Volume= 0.051 af, Atten= 22%, Lag= 3.2 min

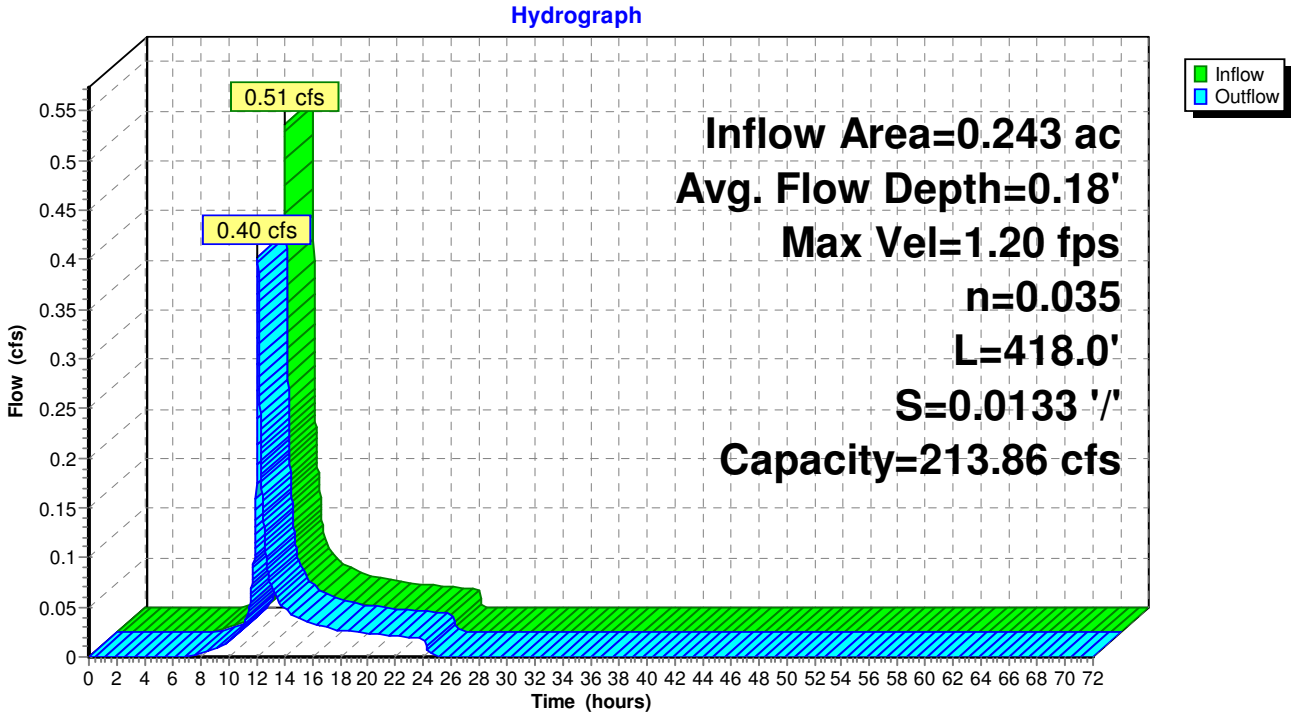
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.20 fps, Min. Travel Time= 5.8 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 12.9 min

Peak Storage= 140 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 2.74'
Bank-Full Depth= 3.50' Flow Area= 28.0 sf, Capacity= 213.86 cfs

12.00' x 3.50' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 418.0' Slope= 0.0133 '/'
Inlet Invert= 101.34', Outlet Invert= 95.80'



Reach R12: R12



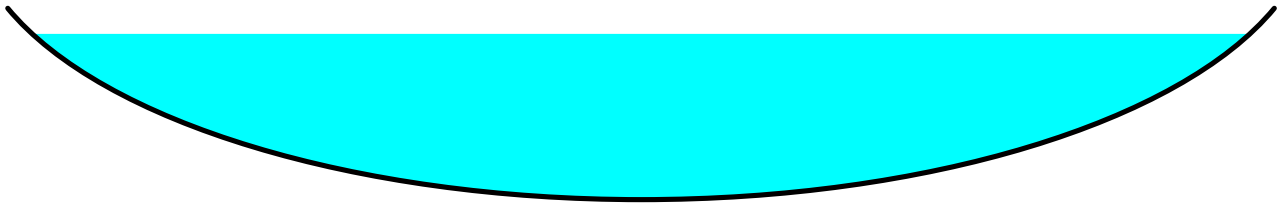
Summary for Reach R13: R13

Inflow Area = 0.991 ac, 48.03% Impervious, Inflow Depth = 3.38" for 10-yr event
Inflow = 2.06 cfs @ 12.16 hrs, Volume= 0.279 af
Outflow = 1.89 cfs @ 12.21 hrs, Volume= 0.279 af, Atten= 8%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.42 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 0.33 fps, Avg. Travel Time= 15.9 min

Peak Storage= 421 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 4.65'
Bank-Full Depth= 0.50' Flow Area= 1.7 sf, Capacity= 2.60 cfs

5.00' x 0.50' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 315.0' Slope= 0.0060 '/'
Inlet Invert= 96.50', Outlet Invert= 94.60'



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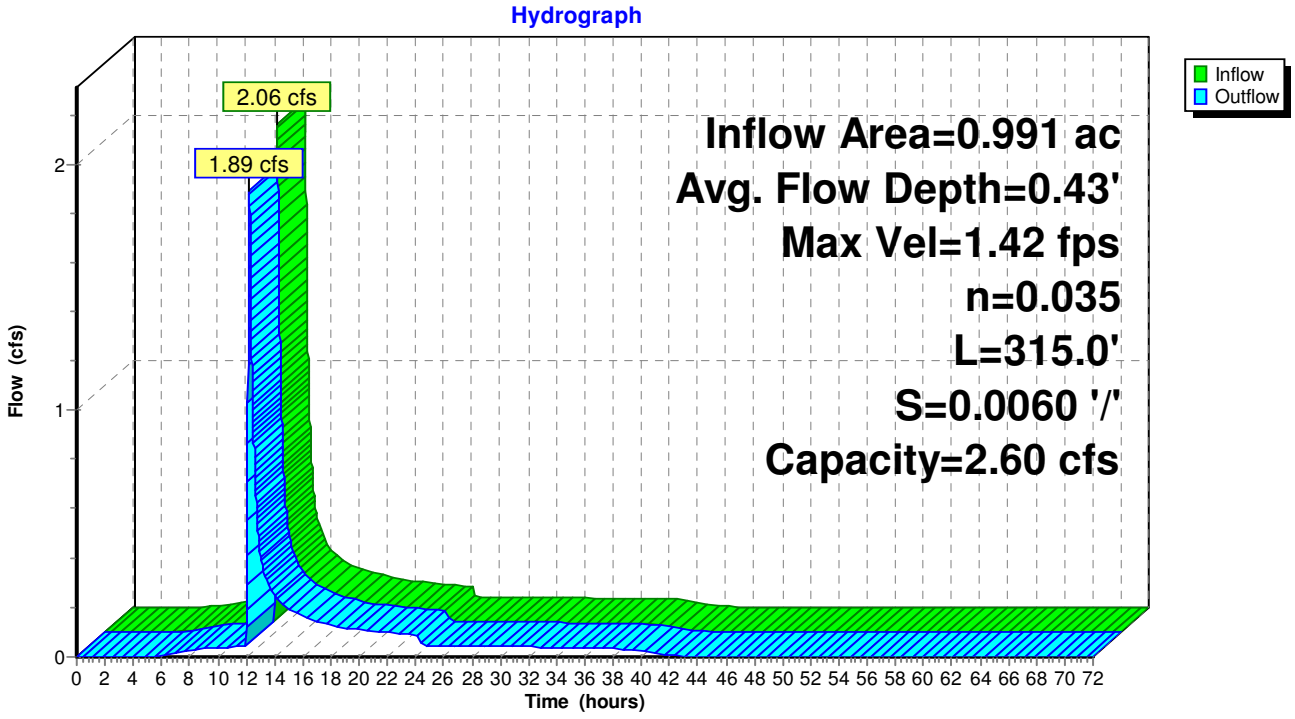
Reach R13: R13



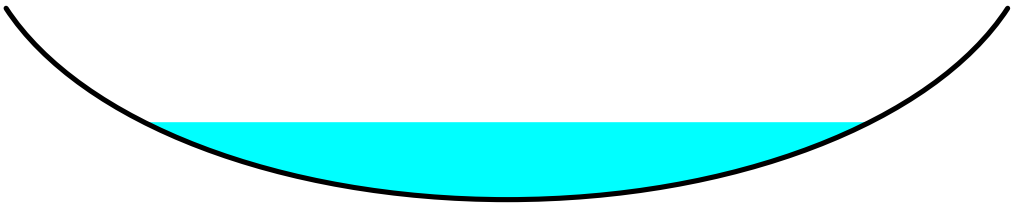
Summary for Reach R2: R2

Inflow Area = 8.170 ac, 25.41% Impervious, Inflow Depth > 3.42" for 10-yr event
Inflow = 6.18 cfs @ 12.28 hrs, Volume= 2.328 af
Outflow = 6.13 cfs @ 12.30 hrs, Volume= 2.328 af, Atten= 1%, Lag= 1.4 min

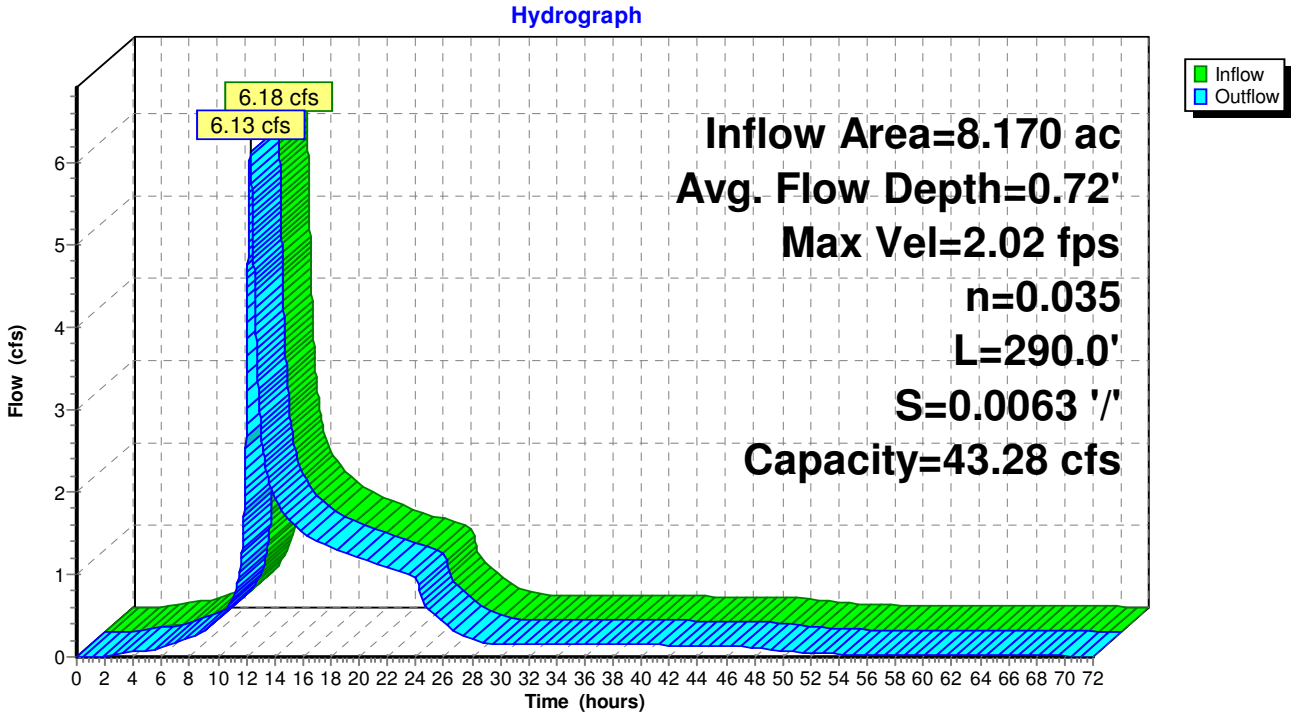
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.02 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 7.0 min

Peak Storage= 881 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 6.33'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 43.28 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 290.0' Slope= 0.0063 '/'
Inlet Invert= 96.92', Outlet Invert= 95.10'



Reach R2: R2



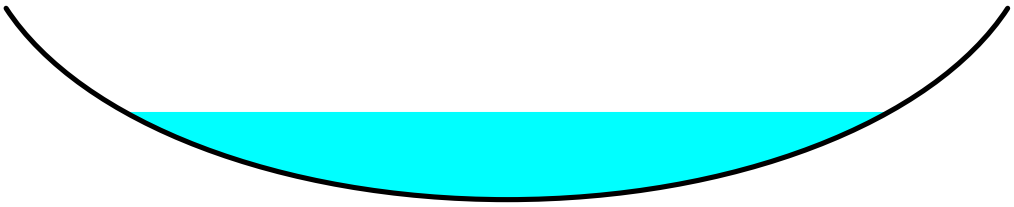
Summary for Reach R3: R3

Inflow Area = 8.624 ac, 28.14% Impervious, Inflow Depth > 3.48" for 10-yr event
Inflow = 6.82 cfs @ 12.29 hrs, Volume= 2.503 af
Outflow = 6.77 cfs @ 12.32 hrs, Volume= 2.503 af, Atten= 1%, Lag= 2.0 min

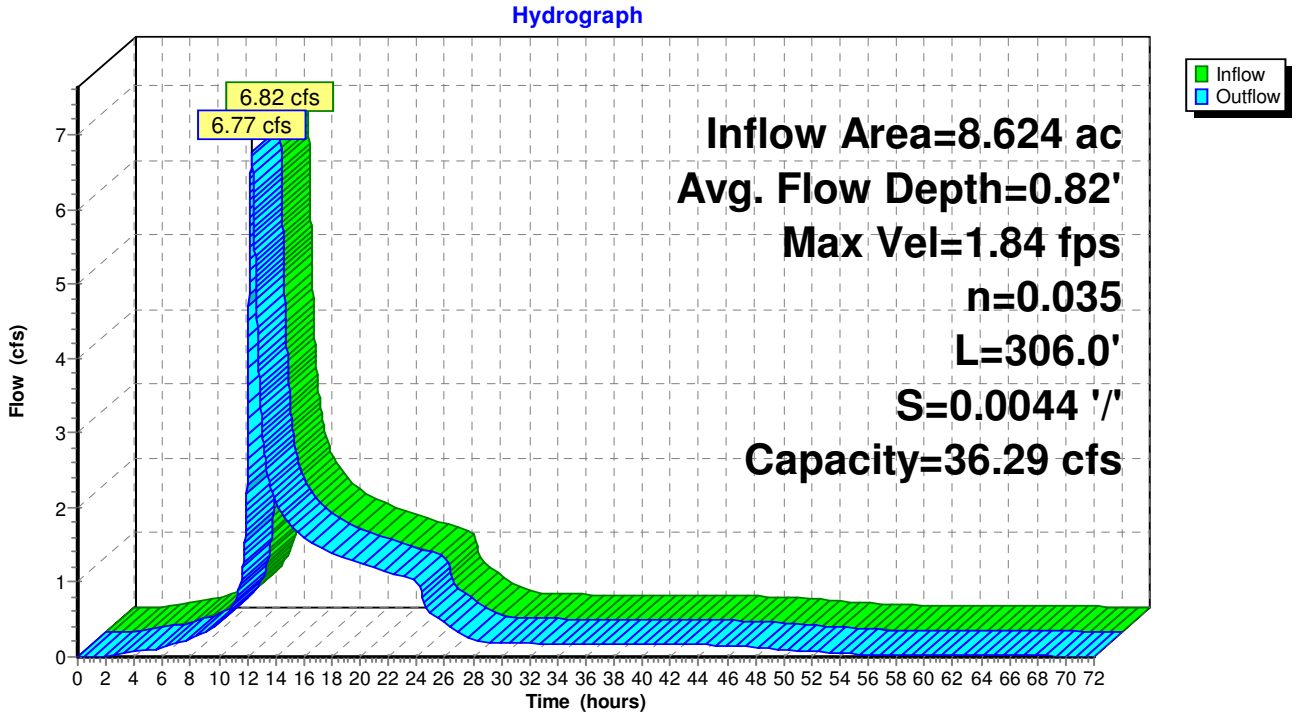
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 8.1 min

Peak Storage= 1,127 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.82' , Surface Width= 6.75'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 36.29 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 306.0' Slope= 0.0044 '/'
Inlet Invert= 95.10', Outlet Invert= 93.75'



Reach R3: R3



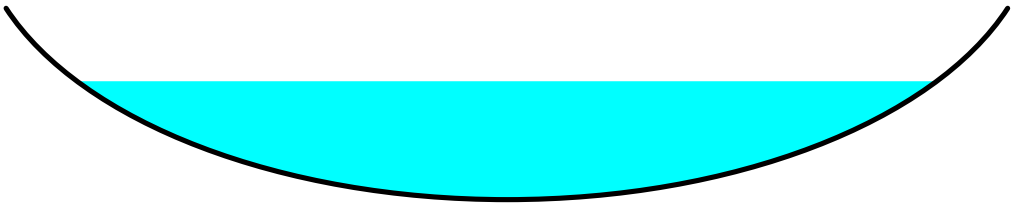
Summary for Reach R4: R4

Inflow Area = 14.595 ac, 16.63% Impervious, Inflow Depth > 3.36" for 10-yr event
Inflow = 15.66 cfs @ 12.31 hrs, Volume= 4.087 af
Outflow = 15.65 cfs @ 12.32 hrs, Volume= 4.087 af, Atten= 0%, Lag= 0.3 min

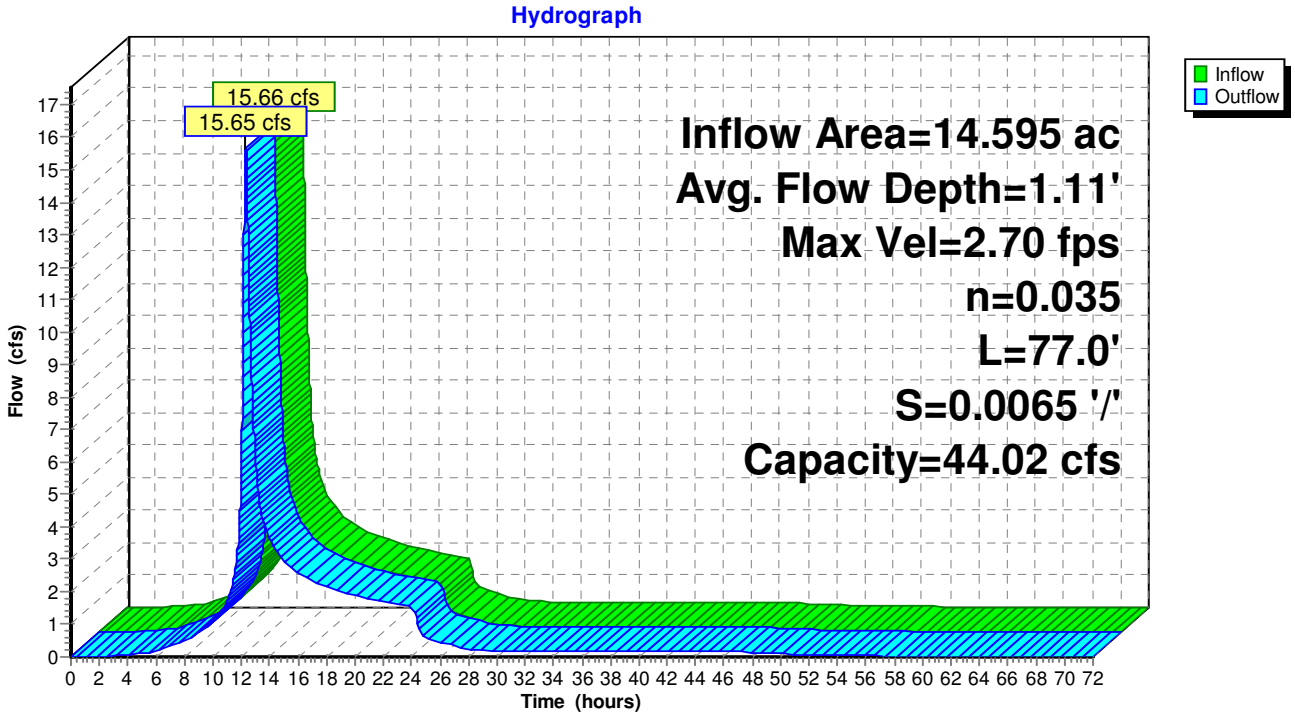
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.70 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.78 fps, Avg. Travel Time= 1.7 min

Peak Storage= 446 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.11' , Surface Width= 7.84'
Bank-Full Depth= 1.80' Flow Area= 12.0 sf, Capacity= 44.02 cfs

10.00' x 1.80' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 77.0' Slope= 0.0065 '/'
Inlet Invert= 93.50', Outlet Invert= 93.00'



Reach R4: R4



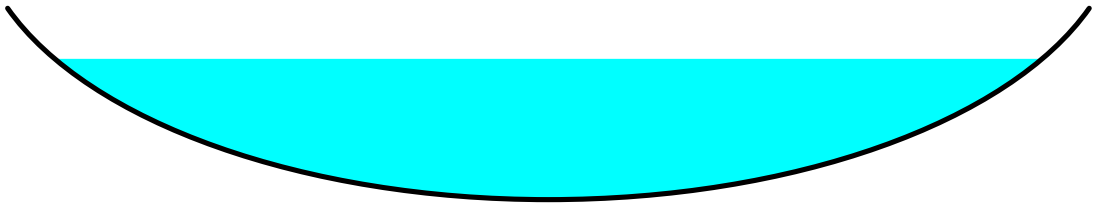
Summary for Reach R5: R5

Inflow Area = 21.814 ac, 13.31% Impervious, Inflow Depth > 3.20" for 10-yr event
Inflow = 25.70 cfs @ 12.29 hrs, Volume= 5.825 af
Outflow = 21.31 cfs @ 12.45 hrs, Volume= 5.823 af, Atten= 17%, Lag= 9.5 min

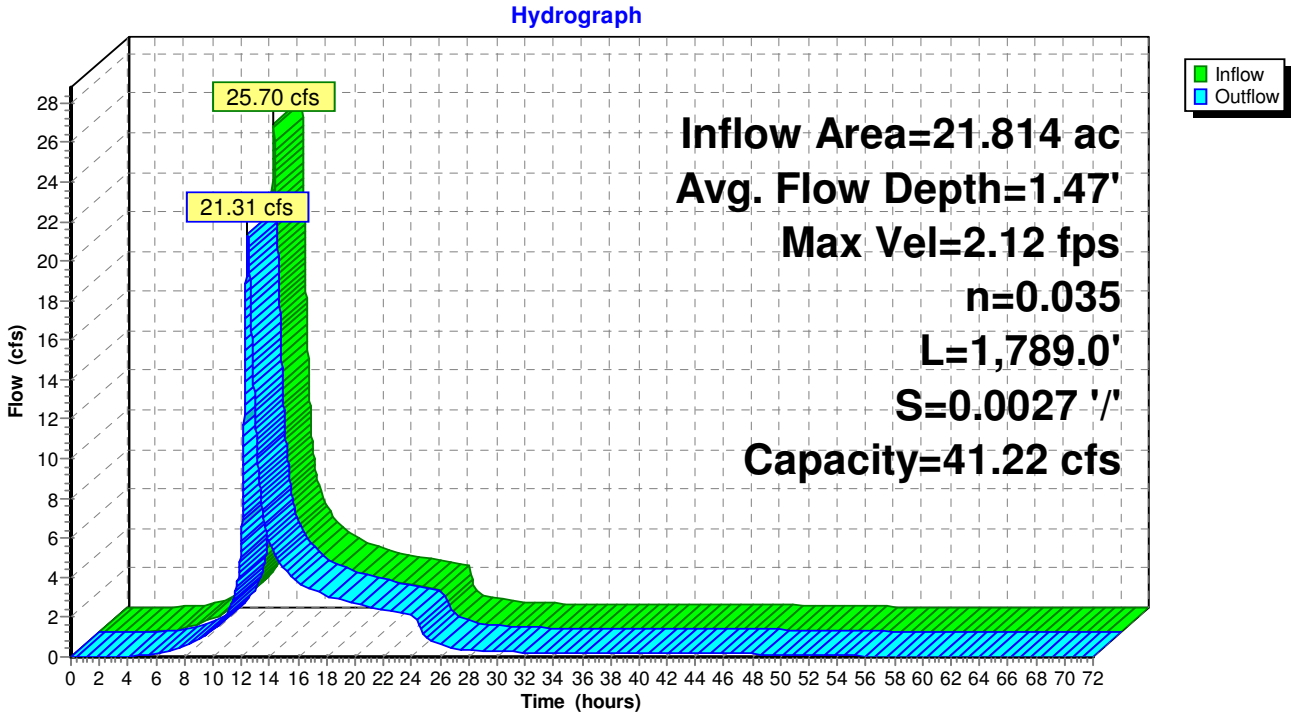
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.12 fps, Min. Travel Time= 14.1 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 50.1 min

Peak Storage= 17,988 cf @ 12.45 hrs
Average Depth at Peak Storage= 1.47' , Surface Width= 10.28'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 41.22 cfs

12.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 1,789.0' Slope= 0.0027 '/'
Inlet Invert= 93.01', Outlet Invert= 88.10'



Reach R5: R5



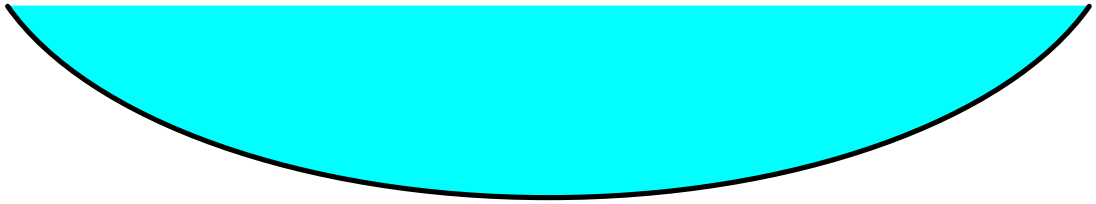
Summary for Reach R6: R6

Inflow Area = 57.757 ac, 5.03% Impervious, Inflow Depth > 3.19" for 10-yr event
Inflow = 54.60 cfs @ 12.59 hrs, Volume= 15.359 af
Outflow = 54.42 cfs @ 12.64 hrs, Volume= 15.359 af, Atten= 0%, Lag= 2.8 min

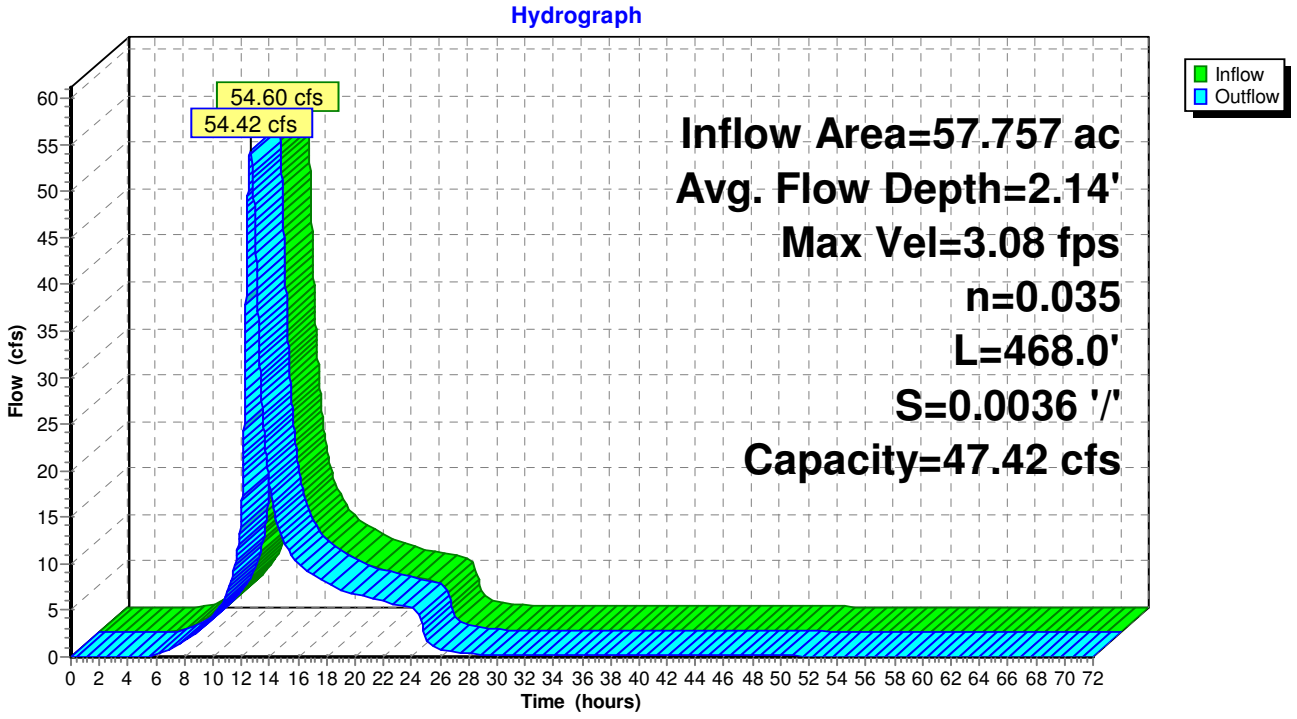
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.08 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.78 fps, Avg. Travel Time= 10.0 min

Peak Storage= 8,271 cf @ 12.64 hrs
Average Depth at Peak Storage= 2.14' , Surface Width= 12.41'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 47.42 cfs

12.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 468.0' Slope= 0.0036 '/'
Inlet Invert= 88.10', Outlet Invert= 86.40'



Reach R6: R6



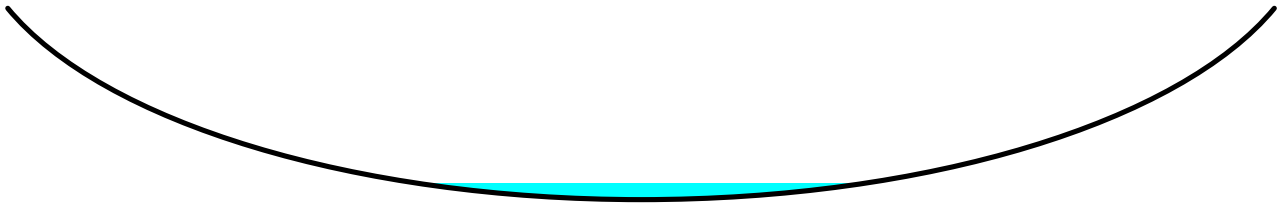
Summary for Reach R7: R7

Inflow = 0.03 cfs @ 12.93 hrs, Volume= 0.009 af
Outflow = 0.03 cfs @ 12.94 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.87 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.71 fps, Avg. Travel Time= 1.0 min

Peak Storage= 1 cf @ 12.94 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 1.15'
Bank-Full Depth= 0.50' Flow Area= 1.3 sf, Capacity= 6.00 cfs

4.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 42.0' Slope= 0.0202 '/'
Inlet Invert= 103.00', Outlet Invert= 102.15'



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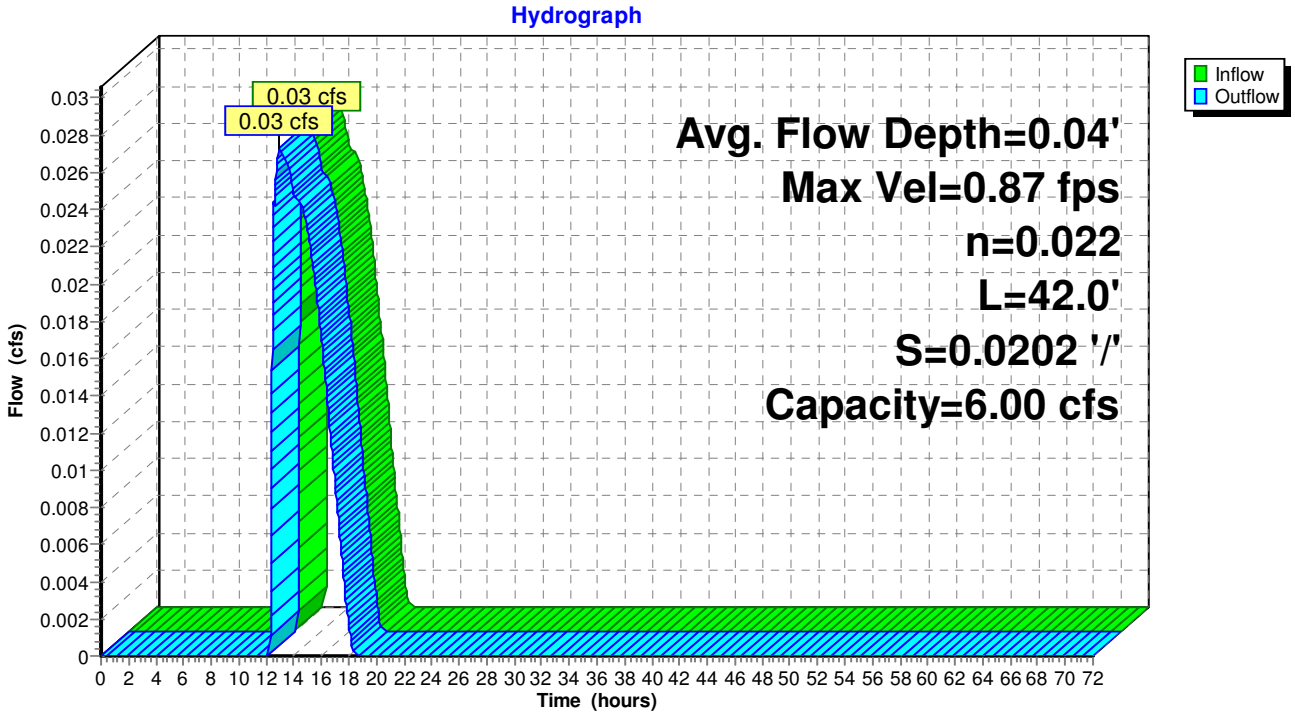
Reach R7: R7



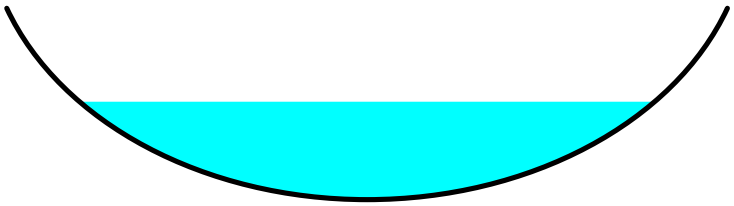
Summary for Reach R8: R8

Inflow Area = 5.032 ac, 37.12% Impervious, Inflow Depth > 3.55" for 10-yr event
Inflow = 2.92 cfs @ 12.01 hrs, Volume= 1.487 af
Outflow = 2.82 cfs @ 12.02 hrs, Volume= 1.487 af, Atten= 3%, Lag= 0.7 min

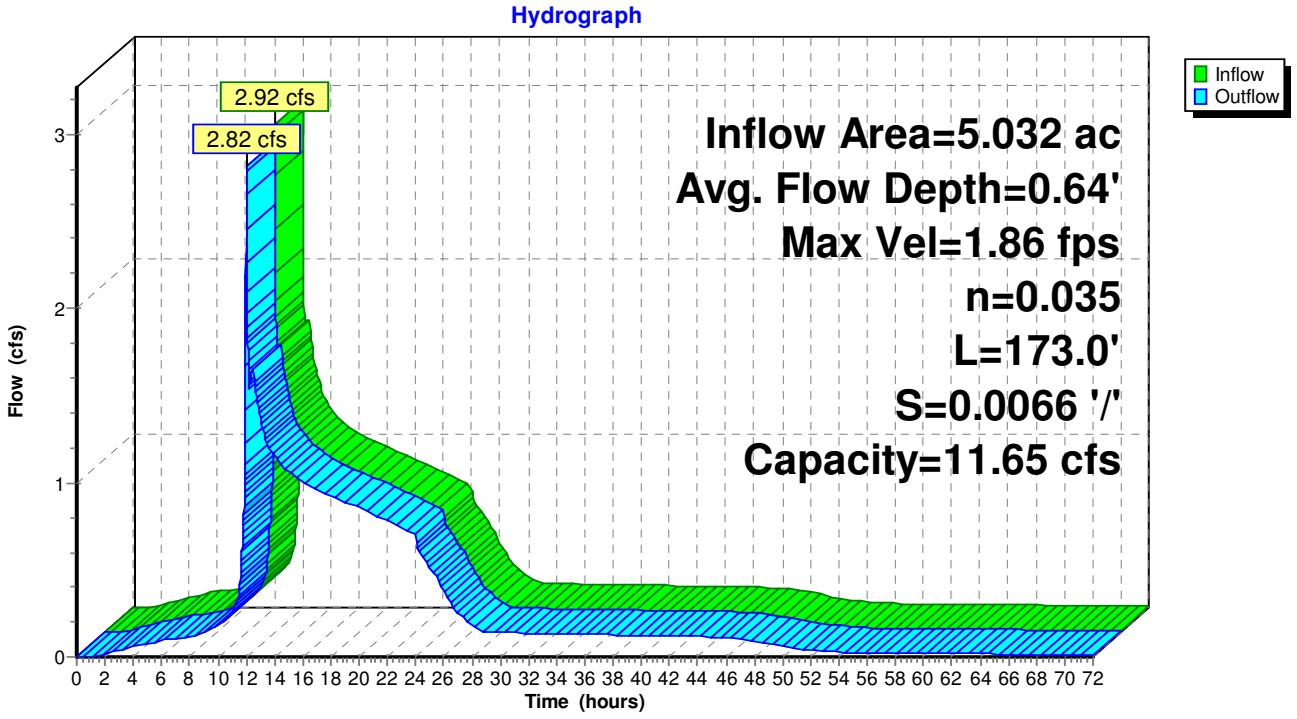
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.86 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 3.9 min

Peak Storage= 262 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.64' , Surface Width= 3.57'
Bank-Full Depth= 1.25' Flow Area= 4.2 sf, Capacity= 11.65 cfs

5.00' x 1.25' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 173.0' Slope= 0.0066 '/'
Inlet Invert= 101.66', Outlet Invert= 100.51'



Reach R8: R8



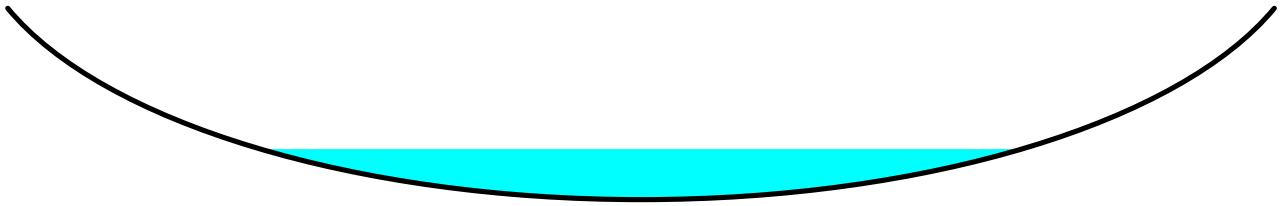
Summary for Reach R9: R9

Inflow Area = 0.296 ac, 70.47% Impervious, Inflow Depth > 4.63" for 10-yr event
Inflow = 0.32 cfs @ 12.23 hrs, Volume= 0.114 af
Outflow = 0.32 cfs @ 12.25 hrs, Volume= 0.114 af, Atten= 1%, Lag= 1.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.04 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.38 fps, Avg. Travel Time= 5.3 min

Peak Storage= 37 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 3.57'
Bank-Full Depth= 0.50' Flow Area= 2.3 sf, Capacity= 5.94 cfs

7.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 120.0' Slope= 0.0063 '/'
Inlet Invert= 101.75', Outlet Invert= 101.00'



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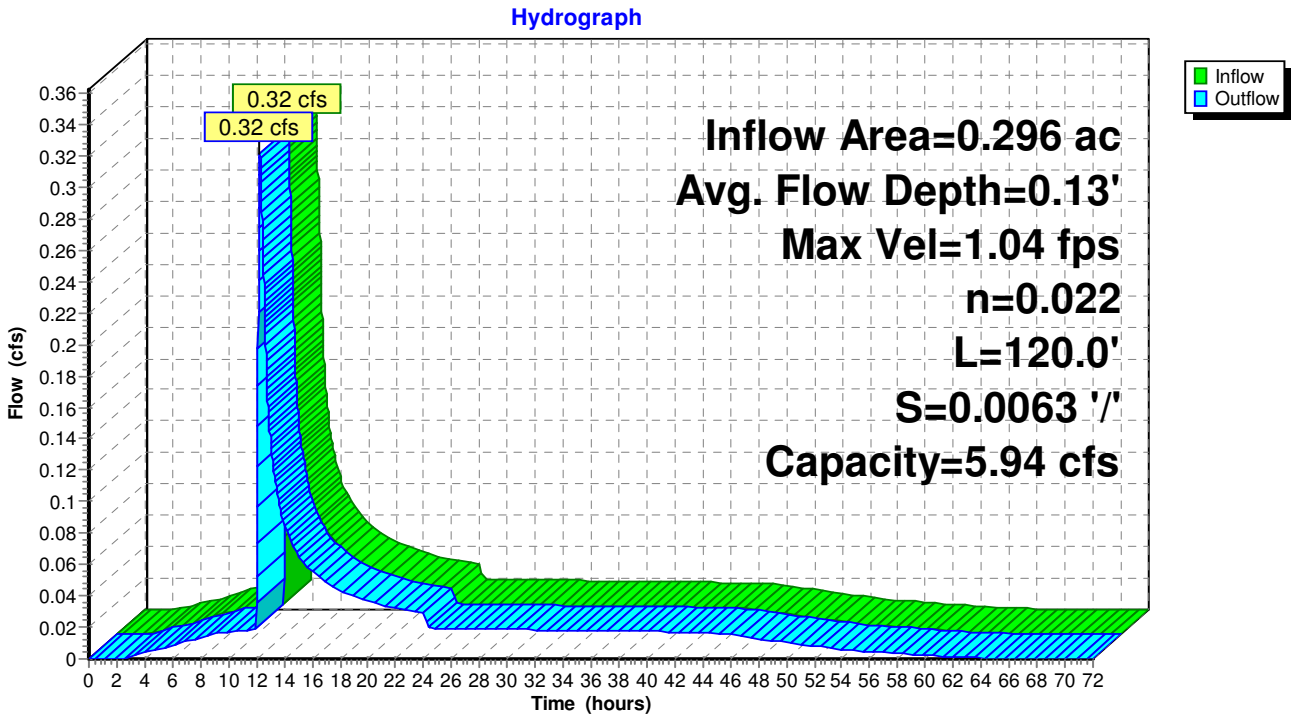
Reach R9: R9



Summary for Pond BR1: BioRetention 1

Inflow Area = 3.215 ac, 49.81% Impervious, Inflow Depth = 4.01" for 10-yr event
Inflow = 8.00 cfs @ 12.00 hrs, Volume= 1.073 af
Outflow = 0.75 cfs @ 14.23 hrs, Volume= 1.073 af, Atten= 91%, Lag= 133.4 min
Primary = 0.75 cfs @ 14.23 hrs, Volume= 1.073 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 102.50' Surf.Area= 6,255 sf Storage= 2,737 cf
Peak Elev= 106.00' @ 14.23 hrs Surf.Area= 34,337 sf Storage= 25,115 cf (22,378 cf above start)
Flood Elev= 107.00' Surf.Area= 38,083 sf Storage= 61,272 cf (58,535 cf above start)

Plug-Flow detention time= 585.6 min calculated for 1.010 af (94% of inflow)
Center-of-Mass det. time= 496.7 min (1,301.4 - 804.7)

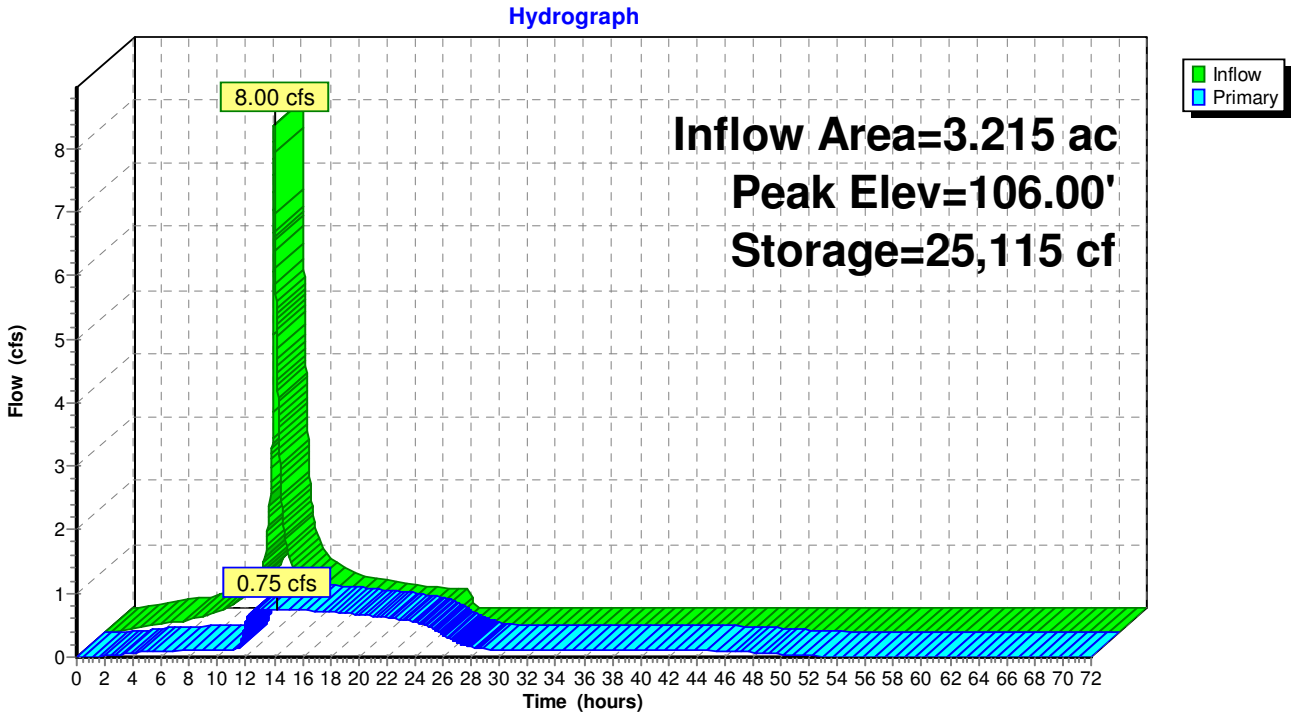
Volume	Invert	Avail.Storage	Storage Description
#1	101.25'	61,272 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.25	6,255	324.0	0.0	0	0	6,255
102.50	6,255	324.0	35.0	2,737	2,737	6,660
102.75	6,255	324.0	20.0	313	3,049	6,741
104.25	6,255	324.0	10.0	938	3,988	7,227
105.00	7,000	338.1	100.0	4,968	8,956	8,010
105.25	7,255	342.8	100.0	1,782	10,737	8,279
106.00	34,333	840.1	100.0	14,343	25,080	55,093
107.00	38,083	885.8	100.0	36,192	61,272	61,428

Device	Routing	Invert	Outlet Devices
#1	Primary	102.50'	**1.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 1	101.58'	**6.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.58' / 101.58' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Device 2	101.25'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Primary	105.25'	**8.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	106.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.75 cfs @ 14.23 hrs HW=106.00' TW=103.57' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.12 cfs @ 7.51 fps)
  - **2=Culvert** (Passes 0.12 cfs of 0.84 cfs potential flow)
    - **3=Exfiltration** (Passes 0.12 cfs of 7.95 cfs potential flow)
- **4=Orifice/Grate** (Orifice Controls 0.63 cfs @ 3.80 fps)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Pond BR1: BioRetention 1



Summary for Pond BR2: BioRetention 2

Inflow Area = 0.707 ac, 37.68% Impervious, Inflow Depth = 3.68" for 10-yr event
Inflow = 1.94 cfs @ 12.07 hrs, Volume= 0.217 af
Outflow = 0.48 cfs @ 12.53 hrs, Volume= 0.211 af, Atten= 75%, Lag= 27.4 min
Primary = 0.27 cfs @ 12.53 hrs, Volume= 0.190 af
Secondary = 0.21 cfs @ 12.53 hrs, Volume= 0.021 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 102.15' Surf.Area= 3,359 sf Storage= 1,470 cf
Peak Elev= 104.57' @ 12.53 hrs Surf.Area= 7,323 sf Storage= 5,368 cf (3,899 cf above start)
Flood Elev= 104.75' Surf.Area= 9,875 sf Storage= 6,932 cf (5,462 cf above start)

Plug-Flow detention time= 948.7 min calculated for 0.177 af (82% of inflow)
Center-of-Mass det. time= 703.3 min (1,541.8 - 838.4)

Volume	Invert	Avail.Storage	Storage Description
#1	100.90'	6,932 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

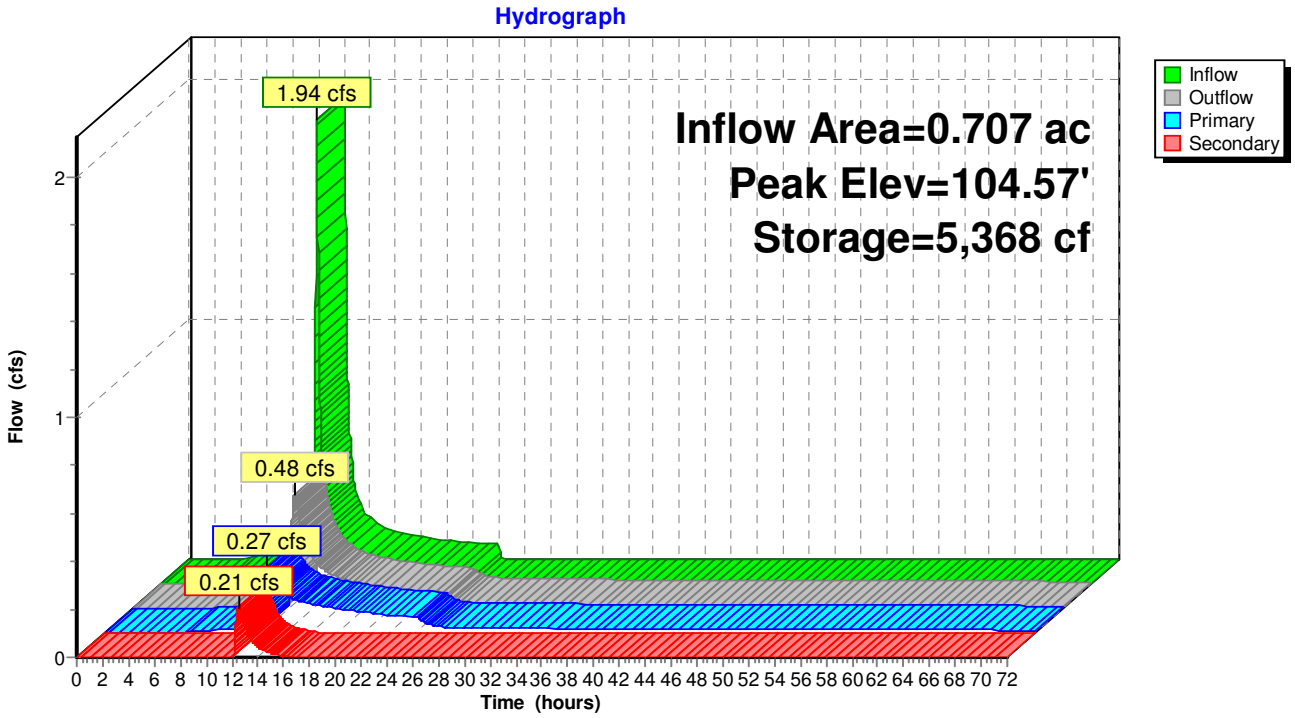
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.90	3,359	233.8	0.0	0	0	3,359
102.15	3,359	233.8	35.0	1,470	1,470	3,651
102.40	3,359	233.8	20.0	168	1,638	3,710
103.90	3,359	233.8	10.0	504	2,141	4,060
104.00	3,803	278.5	100.0	358	2,499	5,883
104.40	5,315	422.6	100.0	1,815	4,314	13,924
104.75	9,875	568.6	100.0	2,617	6,932	25,441

Device	Routing	Invert	Outlet Devices
#1	Primary	102.15'	**6.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 102.15' / 102.10' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	102.15'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	101.23'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.23' / 101.23' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#4	Device 3	100.90'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#5	Device 1	104.40'	**48.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	104.50'	**5.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.27 cfs @ 12.53 hrs HW=104.57' TW=102.70' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.27 cfs of 1.29 cfs potential flow)
  └─**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 6.58 fps)
    └─**3=Culvert** (Passes 0.02 cfs of 0.98 cfs potential flow)
      └─**4=Exfiltration** (Passes 0.02 cfs of 1.70 cfs potential flow)
  └─**5=Orifice/Grate** (Orifice Controls 0.25 cfs @ 1.39 fps)

Secondary OutFlow Max=0.21 cfs @ 12.53 hrs HW=104.57' TW=102.70' (Dynamic Tailwater)
└─**6=Broad-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.62 fps)

Pond BR2: BioRetention 2



Summary for Pond BR3: BioRetention 3

Inflow Area = 0.454 ac, 77.14% Impervious, Inflow Depth = 4.63" for 10-yr event
Inflow = 1.94 cfs @ 12.00 hrs, Volume= 0.175 af
Outflow = 0.94 cfs @ 12.06 hrs, Volume= 0.175 af, Atten= 52%, Lag= 3.7 min
Primary = 0.94 cfs @ 12.06 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.25' Surf.Area= 693 sf Storage= 303 cf
Peak Elev= 105.27' @ 12.06 hrs Surf.Area= 1,840 sf Storage= 3,083 cf (2,780 cf above start)
Flood Elev= 106.00' Surf.Area= 2,575 sf Storage= 4,683 cf (4,380 cf above start)

Plug-Flow detention time= 595.6 min calculated for 0.168 af (96% of inflow)
Center-of-Mass det. time= 530.7 min (1,315.8 - 785.2)

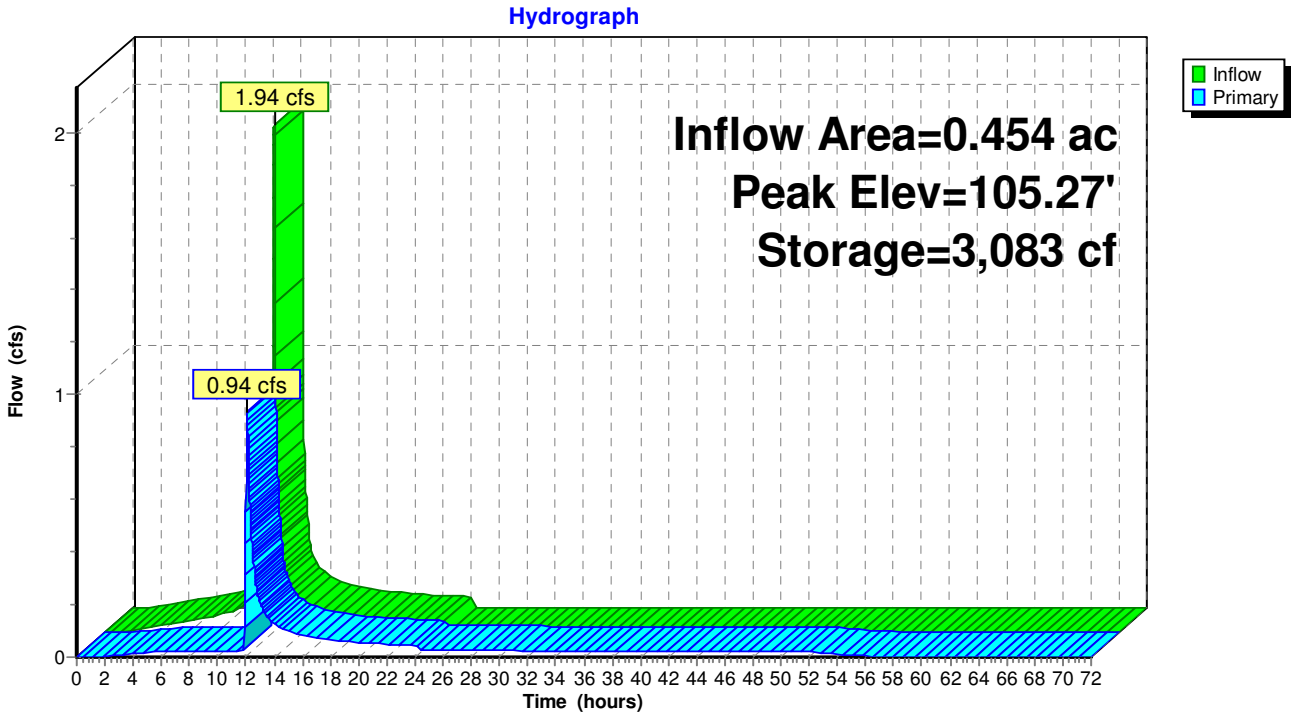
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	4,683 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	693	108.0	0.0	0	0	693
101.25	693	108.0	35.0	303	303	828
101.50	693	108.0	20.0	35	338	855
103.00	693	108.0	10.0	104	442	1,017
104.00	1,045	126.8	100.0	863	1,305	1,387
105.00	1,597	192.0	100.0	1,311	2,616	3,049
106.00	2,575	324.2	100.0	2,067	4,683	8,486

Device	Routing	Invert	Outlet Devices
#1	Primary	101.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.25' / 101.00' S= 0.0114 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	101.25'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	100.33'	**6.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 100.33' / 100.33' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#4	Device 3	100.00'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#5	Device 1	105.00'	**24.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	105.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.94 cfs @ 12.06 hrs HW=105.27' TW=101.20' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.94 cfs of 10.89 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 9.62 fps)
    - **3=Culvert** (Passes 0.03 cfs of 1.50 cfs potential flow)
      - **4=Exfiltration** (Passes 0.03 cfs of 0.43 cfs potential flow)
  - **5=Orifice/Grate** (Orifice Controls 0.91 cfs @ 1.67 fps)
  - **6=Orifice/Grate** (Controls 0.00 cfs)

Pond BR3: BioRetention 3



Summary for Pond BR4: BioRetention 4

Inflow Area = 0.296 ac, 70.47% Impervious, Inflow Depth = 4.63" for 10-yr event
Inflow = 1.26 cfs @ 12.00 hrs, Volume= 0.114 af
Outflow = 0.32 cfs @ 12.23 hrs, Volume= 0.114 af, Atten= 74%, Lag= 13.5 min
Primary = 0.32 cfs @ 12.23 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.85' Surf.Area= 2,475 sf Storage= 1,083 cf
Peak Elev= 104.18' @ 12.23 hrs Surf.Area= 2,838 sf Storage= 3,124 cf (2,041 cf above start)
Flood Elev= 104.75' Surf.Area= 3,221 sf Storage= 4,842 cf (3,759 cf above start)

Plug-Flow detention time= 951.4 min calculated for 0.089 af (78% of inflow)
Center-of-Mass det. time= 632.8 min (1,418.0 - 785.2)

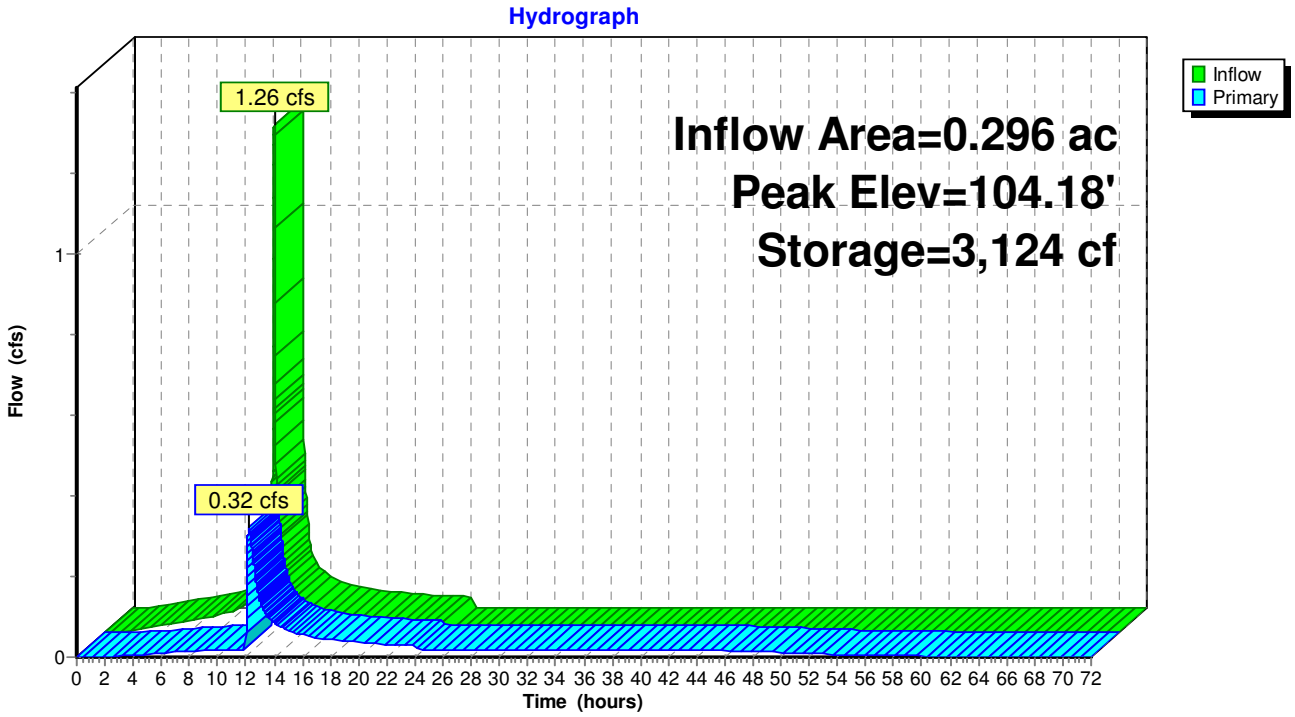
Volume	Invert	Avail.Storage	Storage Description
#1	100.60'	4,842 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.60	2,475	200.0	0.0	0	0	2,475
101.85	2,475	200.0	35.0	1,083	1,083	2,725
102.10	2,475	200.0	20.0	124	1,207	2,775
103.60	2,475	200.0	10.0	371	1,578	3,075
104.00	2,720	207.5	100.0	1,039	2,616	3,332
104.75	3,221	221.5	100.0	2,225	4,842	3,836

Device	Routing	Invert	Outlet Devices
#1	Primary	101.85'	**15.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.85' / 101.75' S= 0.0083 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	101.85'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	100.93'	**6.0" Round Culvert** L= 51.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 100.93' / 100.93' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#4	Device 3	100.60'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#5	Device 1	104.10'	**48.0" W x 48.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 12.23 hrs HW=104.18' TW=101.88' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.32 cfs of 6.10 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 7.31 fps)
    - **3=Culvert** (Passes 0.02 cfs of 1.03 cfs potential flow)
      - **4=Exfiltration** (Passes 0.02 cfs of 0.66 cfs potential flow)
  - **5=Orifice/Grate** (Orifice Controls 0.30 cfs @ 0.92 fps)

Pond BR4: BioRetention 4



Summary for Pond BR5: BioRetention 5

Inflow Area = 0.991 ac, 48.03% Impervious, Inflow Depth = 3.38" for 10-yr event
Inflow = 2.12 cfs @ 12.13 hrs, Volume= 0.279 af
Outflow = 2.06 cfs @ 12.16 hrs, Volume= 0.279 af, Atten= 3%, Lag= 1.7 min
Primary = 2.06 cfs @ 12.16 hrs, Volume= 0.279 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 96.60' Surf.Area= 1,296 sf Storage= 567 cf
Peak Elev= 99.61' @ 12.16 hrs Surf.Area= 2,316 sf Storage= 3,095 cf (2,528 cf above start)
Flood Elev= 100.00' Surf.Area= 2,826 sf Storage= 4,085 cf (3,518 cf above start)

Plug-Flow detention time= 296.5 min calculated for 0.266 af (95% of inflow)
Center-of-Mass det. time= 243.0 min (1,098.6 - 855.6)

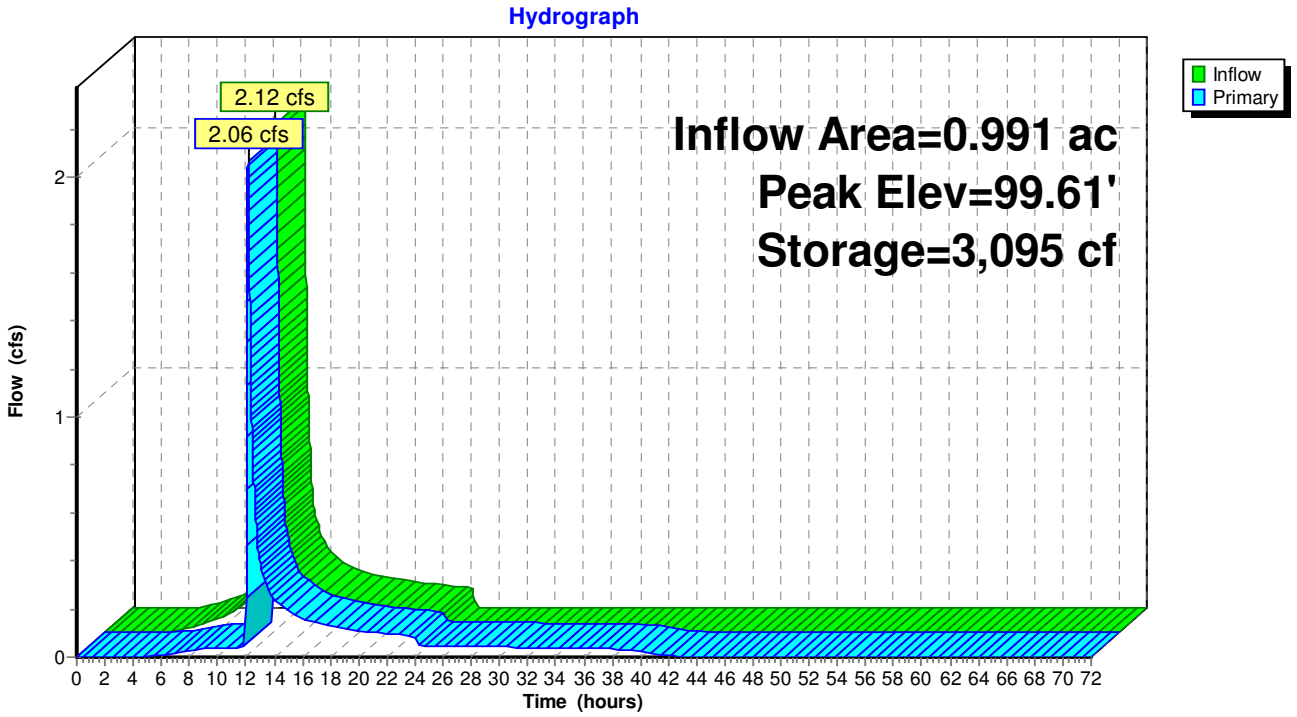
Volume	Invert	Avail.Storage	Storage Description
#1	95.35'	4,085 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.35	1,296	144.0	0.0	0	0	1,296
96.60	1,296	144.0	35.0	567	567	1,476
96.85	1,296	144.0	20.0	65	632	1,512
98.35	1,296	144.0	10.0	194	826	1,728
99.00	1,832	224.0	100.0	1,012	1,838	4,074
99.50	2,175	233.4	100.0	1,001	2,838	4,435
100.00	2,826	322.1	100.0	1,247	4,085	8,358

Device	Routing	Invert	Outlet Devices
#1	Primary	96.60'	**15.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.60' / 96.50' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	96.60'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	95.68'	**6.0" Round Culvert** L= 32.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.68' / 95.68' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#4	Device 3	95.35'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#5	Device 1	99.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.06 cfs @ 12.16 hrs HW=99.61' TW=96.91' (Dynamic Tailwater)
- **1=Culvert** (Passes 2.06 cfs of 9.13 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.92 fps)
    - **3=Culvert** (Passes 0.04 cfs of 1.23 cfs potential flow)
      - **4=Exfiltration** (Passes 0.04 cfs of 0.54 cfs potential flow)
  - **5=Orifice/Grate** (Weir Controls 2.02 cfs @ 1.11 fps)

Pond BR5: BioRetention 5



Summary for Pond CB1: CB1

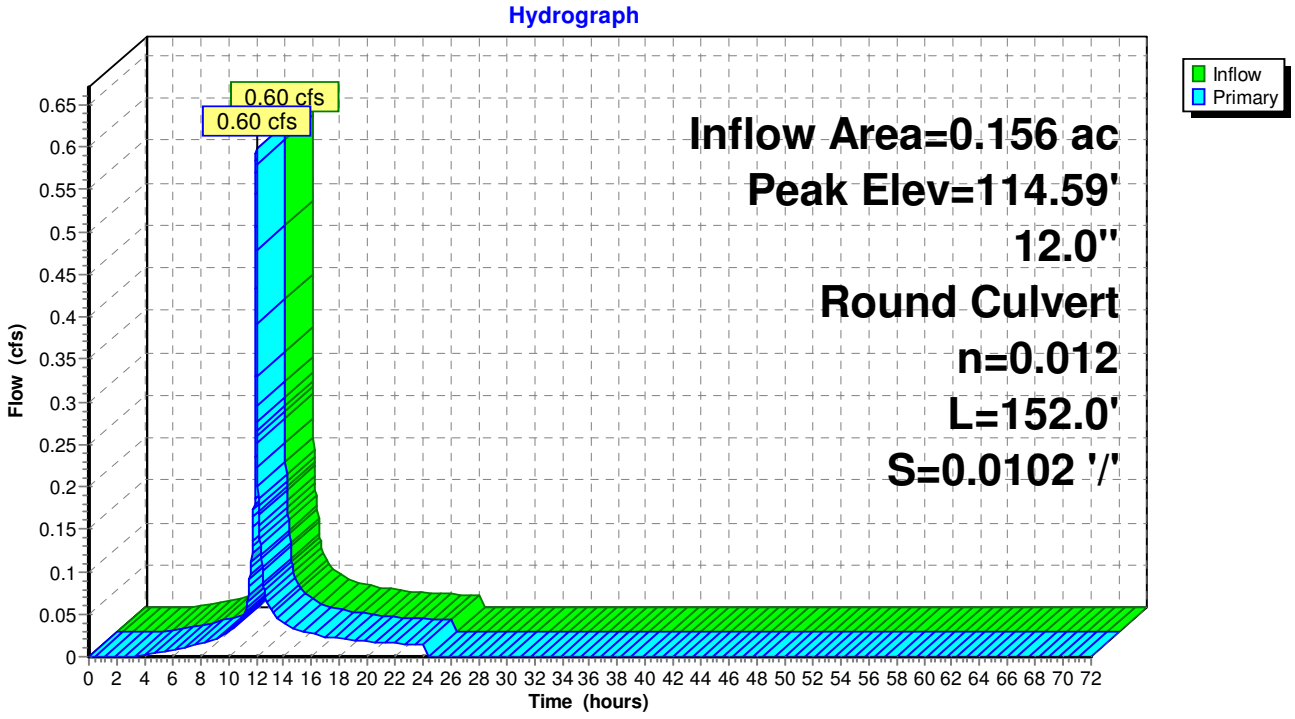
Inflow Area = 0.156 ac, 69.74% Impervious, Inflow Depth = 3.98" for 10-yr event
Inflow = 0.60 cfs @ 12.00 hrs, Volume= 0.052 af
Outflow = 0.60 cfs @ 12.00 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.60 cfs @ 12.00 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 114.59' @ 12.00 hrs
Flood Elev= 117.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	114.20'	**12.0" Round Culvert** L= 152.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 114.20' / 112.65' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.60 cfs @ 12.00 hrs HW=114.59' TW=112.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.60 cfs @ 2.12 fps)

Pond CB1: CB1



Summary for Pond CB2: CB2

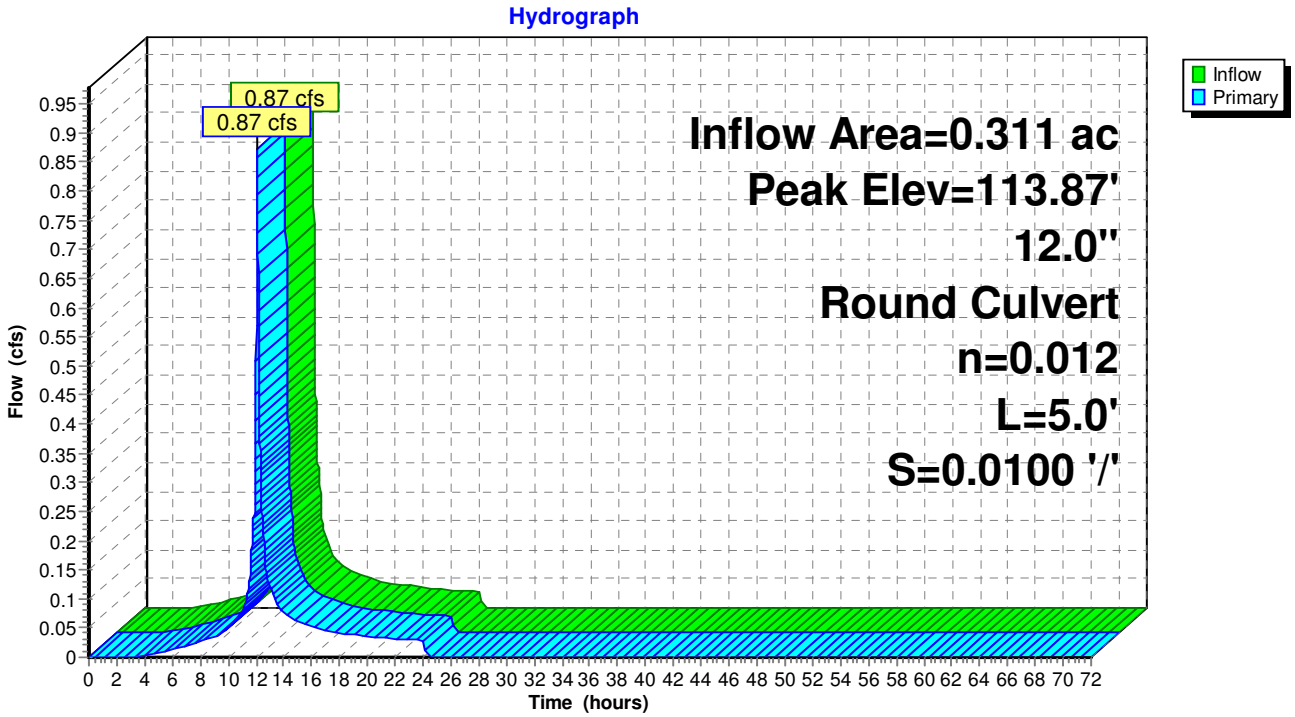
Inflow Area = 0.311 ac, 56.26% Impervious, Inflow Depth = 3.78" for 10-yr event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.098 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.098 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 113.87' @ 12.07 hrs
Flood Elev= 117.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.30'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.30' / 113.25' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.07 hrs HW=113.87' TW=112.81' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.87 cfs @ 2.73 fps)

Pond CB2: CB2



Summary for Pond CB3: CB3

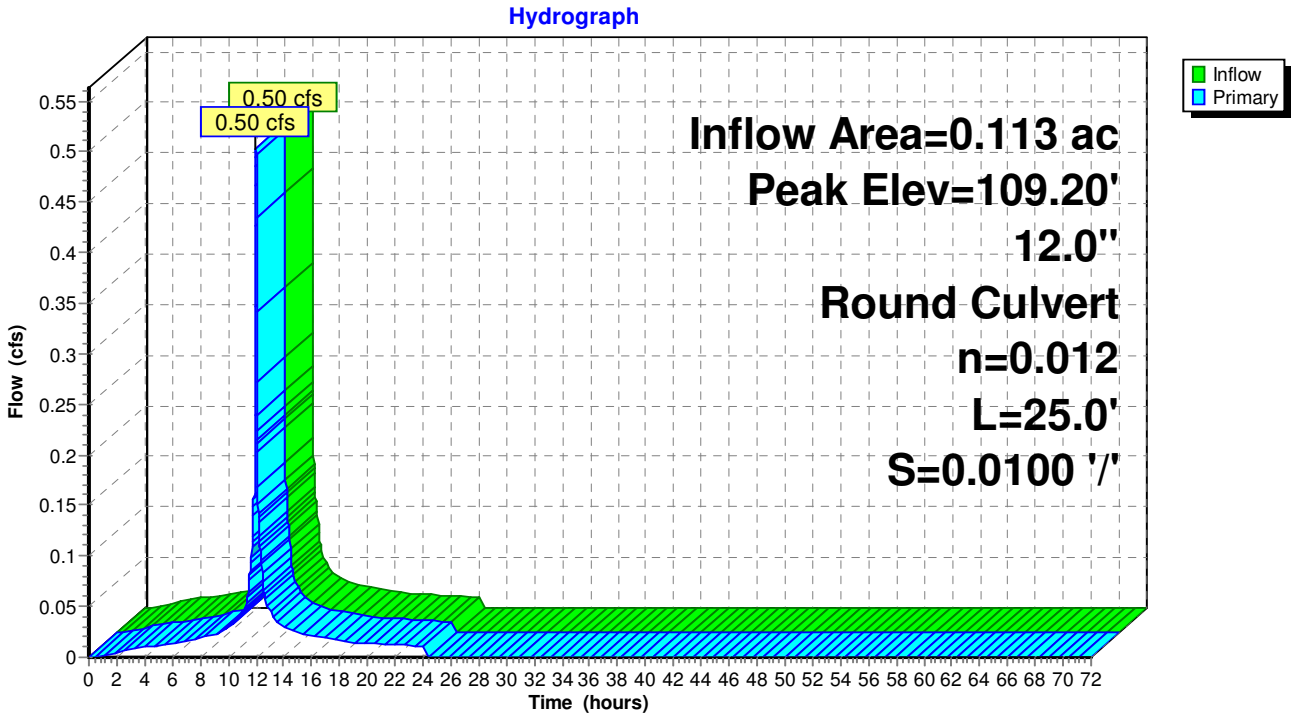
Inflow Area = 0.113 ac, 90.60% Impervious, Inflow Depth = 4.97" for 10-yr event
Inflow = 0.50 cfs @ 12.00 hrs, Volume= 0.047 af
Outflow = 0.50 cfs @ 12.00 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.00 hrs, Volume= 0.047 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 109.20' @ 12.01 hrs
Flood Elev= 112.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.80'	**12.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.80' / 108.55' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.00 hrs HW=109.19' TW=108.93' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.49 cfs @ 2.53 fps)

Pond CB3: CB3



Summary for Pond CB4: CB4

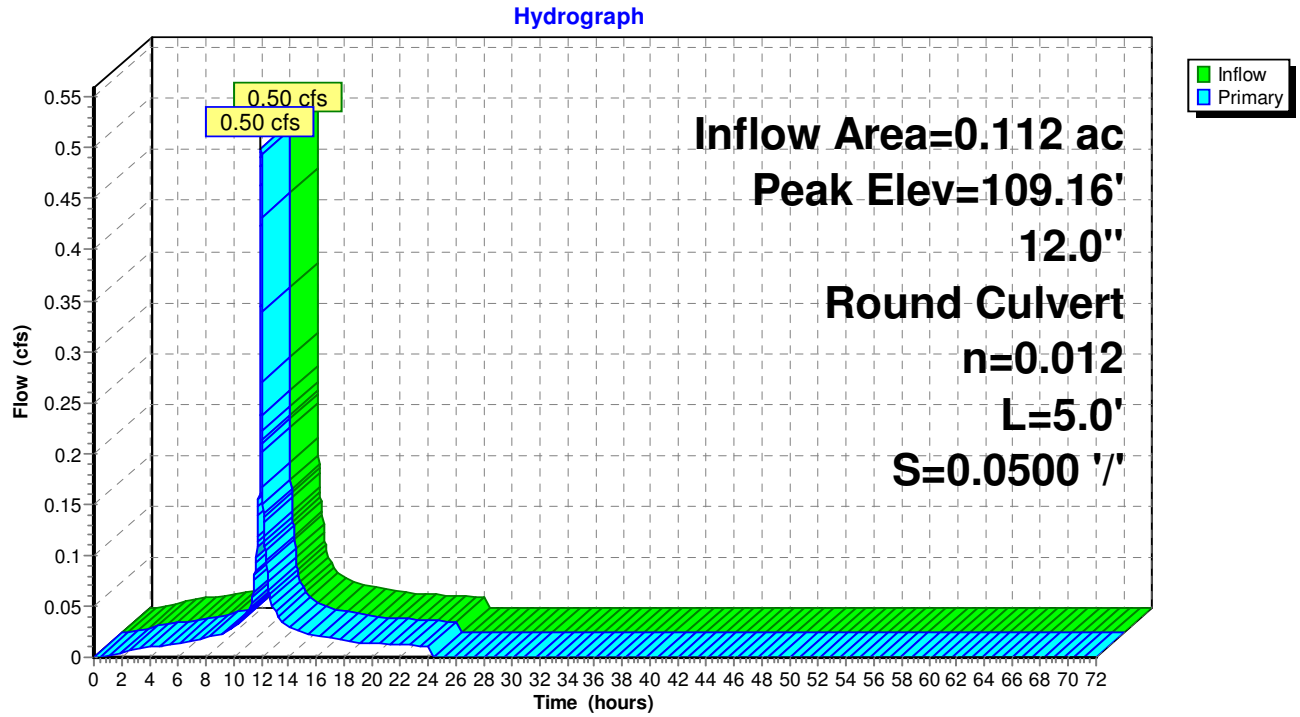
Inflow Area = 0.112 ac, 92.25% Impervious, Inflow Depth = 4.97" for 10-yr event
Inflow = 0.50 cfs @ 12.00 hrs, Volume= 0.046 af
Outflow = 0.50 cfs @ 12.00 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.00 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 109.16' @ 12.01 hrs
Flood Elev= 112.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.80'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.80' / 108.55' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.48 cfs @ 12.00 hrs HW=109.15' TW=108.93' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.48 cfs @ 2.88 fps)

Pond CB4: CB4



Summary for Pond CB5: CB5

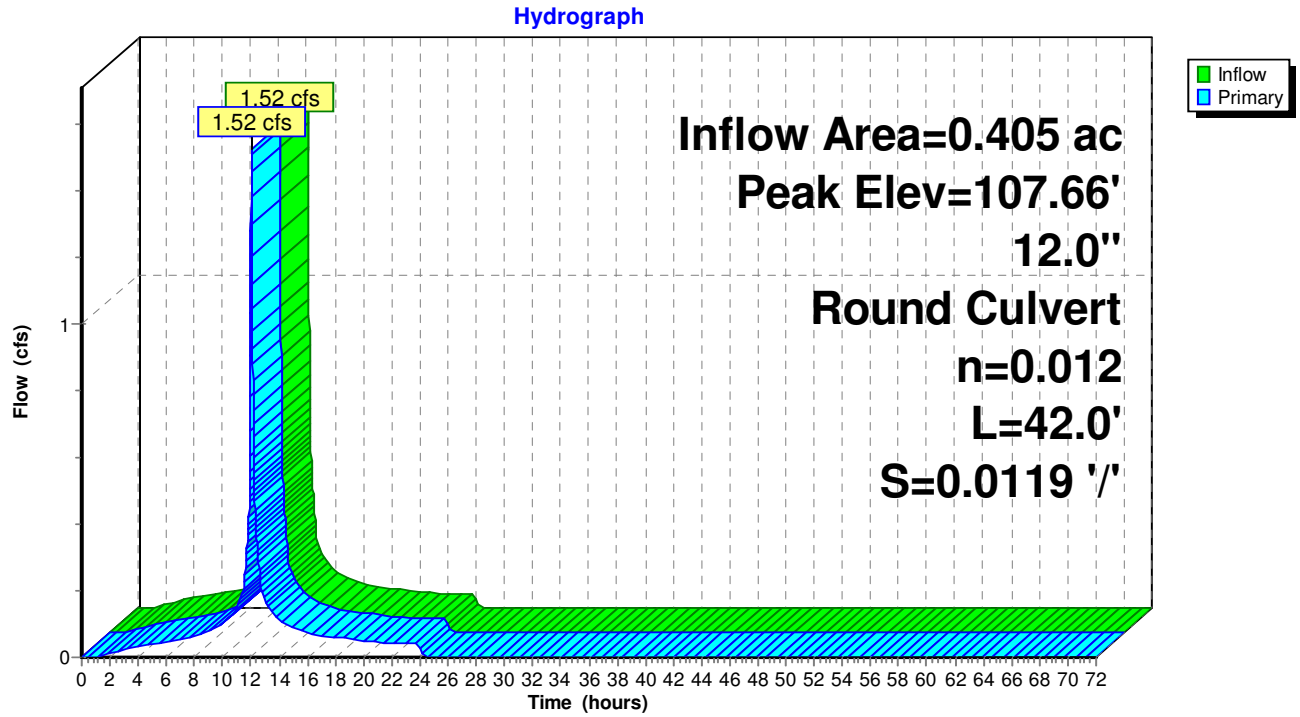
Inflow Area = 0.405 ac, 89.57% Impervious, Inflow Depth = 4.86" for 10-yr event
Inflow = 1.52 cfs @ 12.04 hrs, Volume= 0.164 af
Outflow = 1.52 cfs @ 12.04 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.0 min
Primary = 1.52 cfs @ 12.04 hrs, Volume= 0.164 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 107.66' @ 12.04 hrs
Flood Elev= 110.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.00'	**12.0" Round Culvert** L= 42.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 107.00' / 106.50' S= 0.0119 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.52 cfs @ 12.04 hrs HW=107.66' TW=106.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.52 cfs @ 2.77 fps)

Pond CB5: CB5



Summary for Pond CB6: CB6

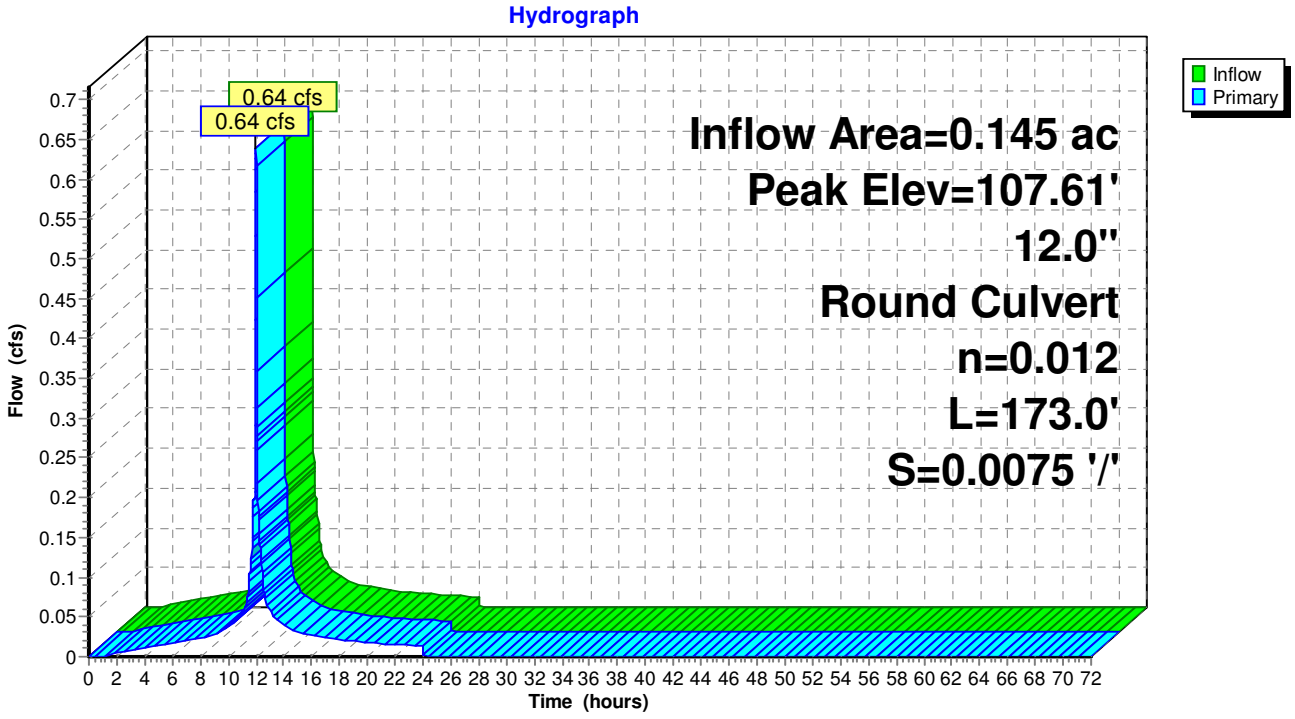
Inflow Area = 0.145 ac, 90.17% Impervious, Inflow Depth = 4.86" for 10-yr event
Inflow = 0.64 cfs @ 12.00 hrs, Volume= 0.059 af
Outflow = 0.64 cfs @ 12.00 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.00 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 107.61' @ 12.01 hrs
Flood Elev= 110.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.15'	**12.0" Round Culvert** L= 173.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 107.15' / 105.85' S= 0.0075 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.00 hrs HW=107.61' TW=106.75' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.62 cfs @ 2.61 fps)

Pond CB6: CB6



Summary for Pond CB7: CB7

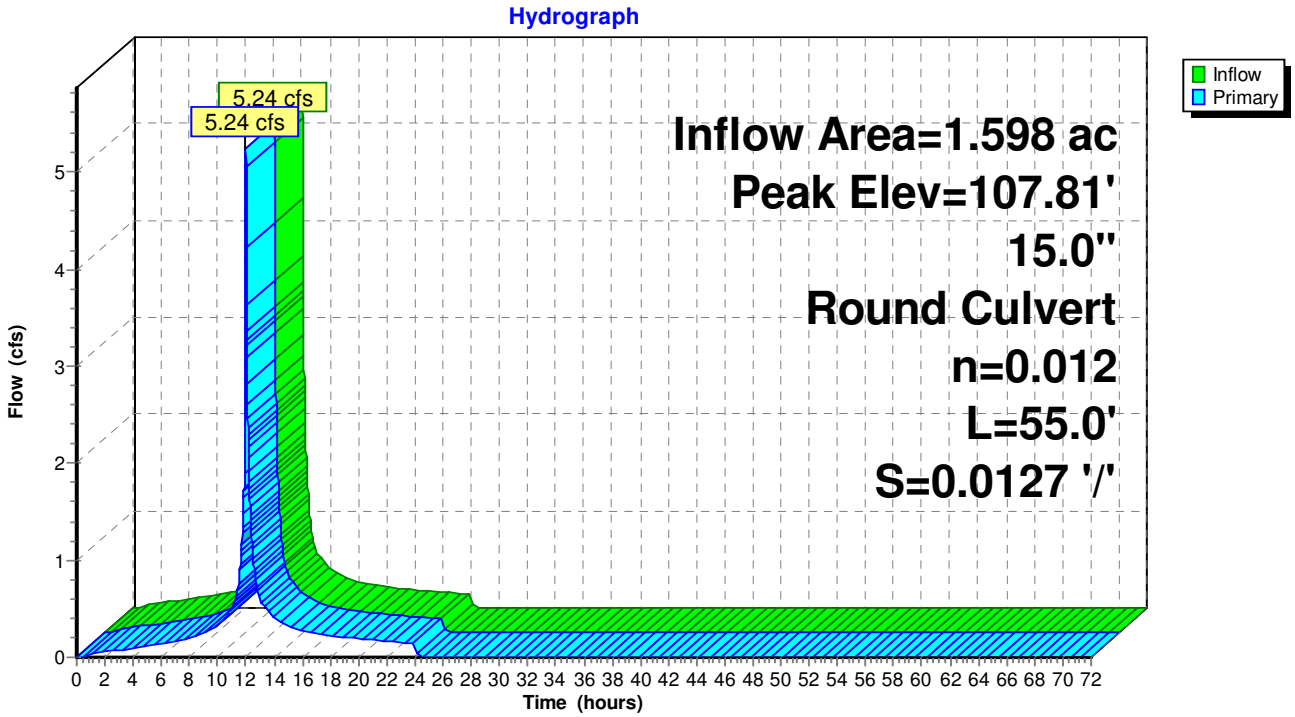
Inflow Area = 1.598 ac, 69.32% Impervious, Inflow Depth = 4.33" for 10-yr event
Inflow = 5.24 cfs @ 12.00 hrs, Volume= 0.576 af
Outflow = 5.24 cfs @ 12.00 hrs, Volume= 0.576 af, Atten= 0%, Lag= 0.0 min
Primary = 5.24 cfs @ 12.00 hrs, Volume= 0.576 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 107.81' @ 12.00 hrs
Flood Elev= 109.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.40'	**15.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 106.40' / 105.70' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.23 cfs @ 12.00 hrs HW=107.81' TW=105.66' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.23 cfs @ 4.26 fps)

Pond CB7: CB7



Summary for Pond DMH1: DMH1

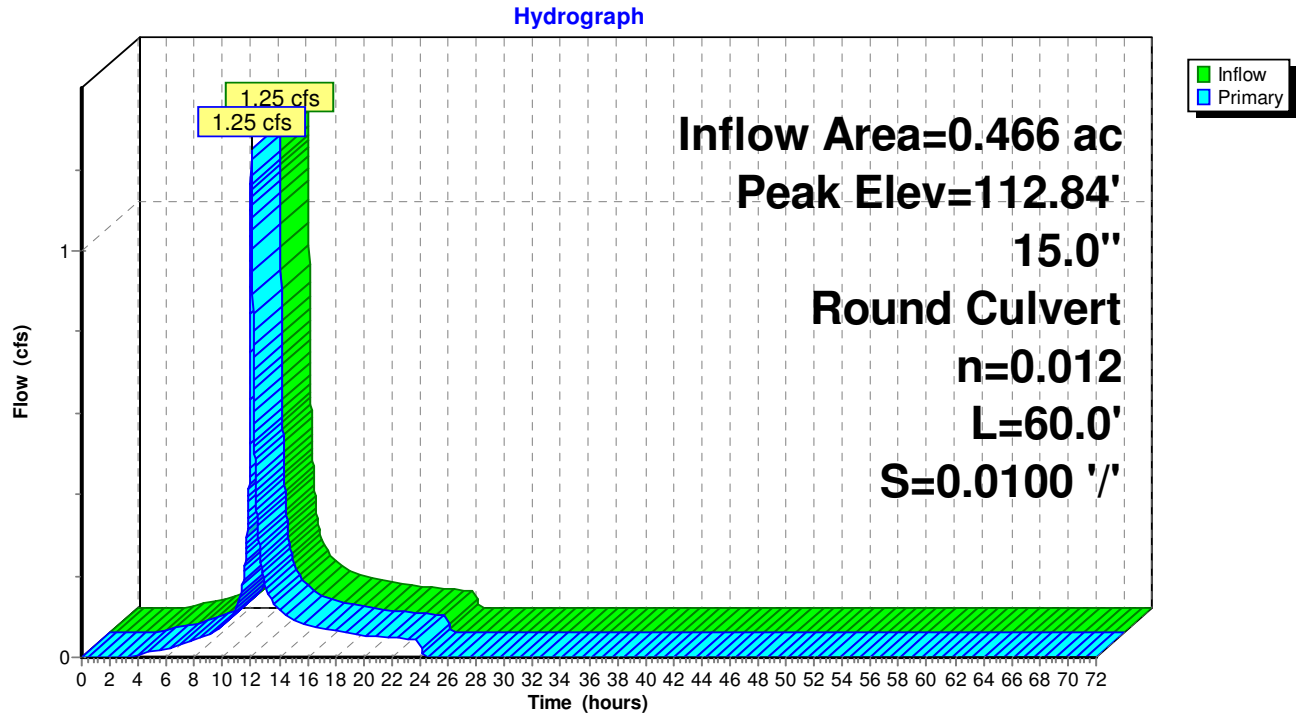
Inflow Area = 0.466 ac, 60.76% Impervious, Inflow Depth = 3.85" for 10-yr event
Inflow = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af
Outflow = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 112.84' @ 12.02 hrs
Flood Elev= 117.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.30'	**15.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.30' / 111.70' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.25 cfs @ 12.02 hrs HW=112.84' TW=112.14' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.25 cfs @ 2.49 fps)

Pond DMH1: DMH1



Summary for Pond DMH2: DMH2

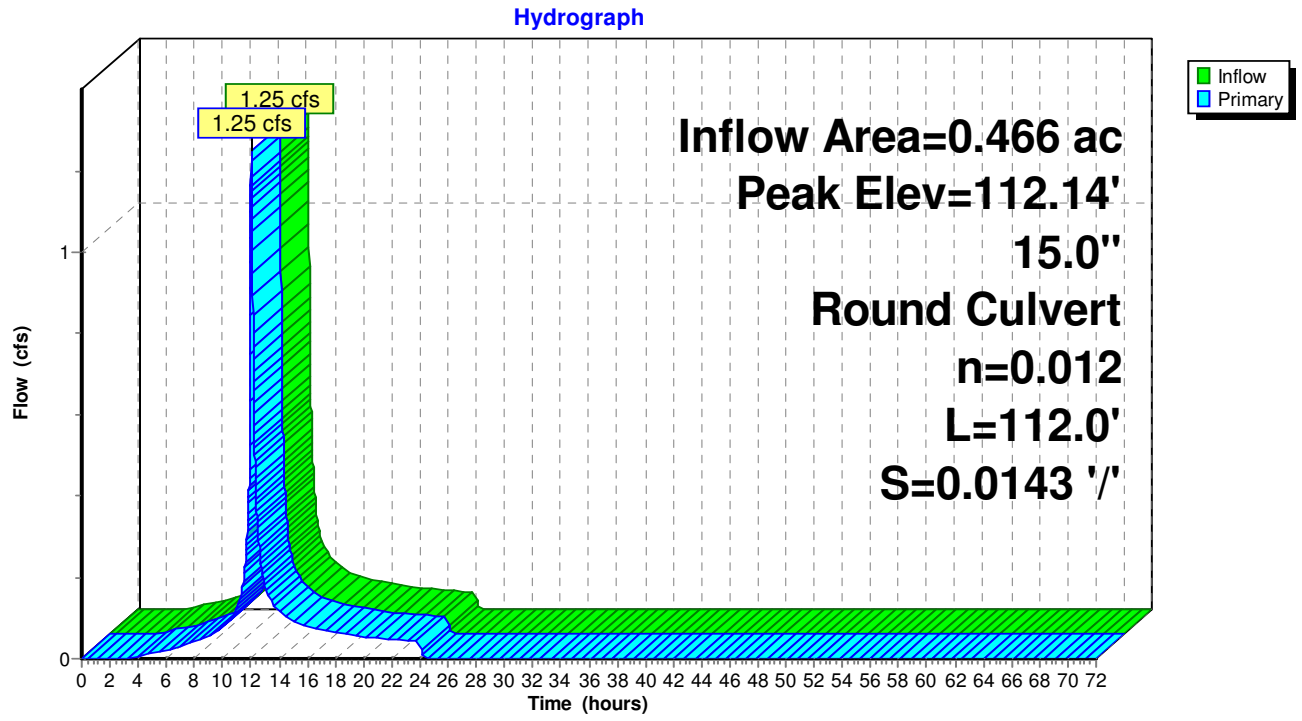
Inflow Area = 0.466 ac, 60.76% Impervious, Inflow Depth = 3.85" for 10-yr event
Inflow = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af
Outflow = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.02 hrs, Volume= 0.150 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 112.14' @ 12.02 hrs
Flood Elev= 118.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.60'	**15.0" Round Culvert** L= 112.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.60' / 110.00' S= 0.0143 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.25 cfs @ 12.02 hrs HW=112.14' TW=108.66' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.25 cfs @ 2.49 fps)

Pond DMH2: DMH2



Summary for Pond DMH3: DMH3

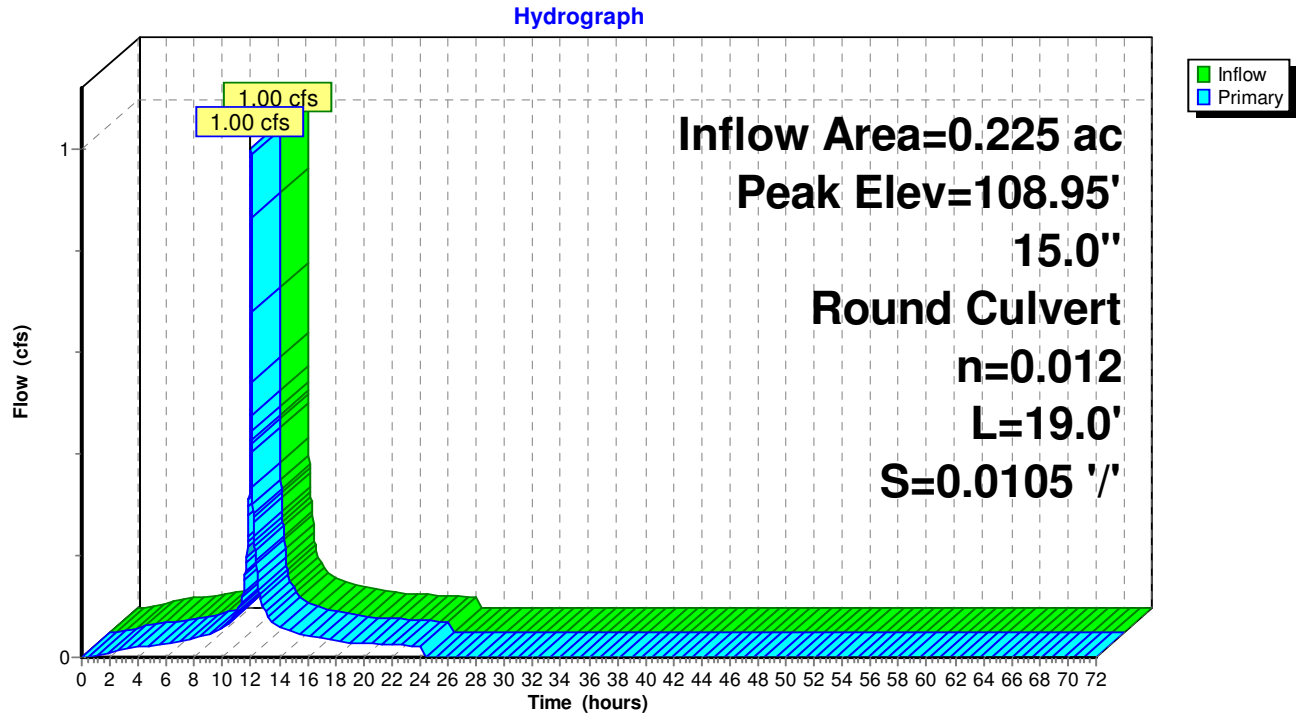
Inflow Area = 0.225 ac, 91.42% Impervious, Inflow Depth = 4.97" for 10-yr event
Inflow = 1.00 cfs @ 12.00 hrs, Volume= 0.093 af
Outflow = 1.00 cfs @ 12.00 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.00 cfs @ 12.00 hrs, Volume= 0.093 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 108.95' @ 12.01 hrs
Flood Elev= 112.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.20'	**15.0" Round Culvert** L= 19.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.20' / 108.00' S= 0.0105 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.90 cfs @ 12.00 hrs HW=108.93' TW=108.84' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.90 cfs @ 1.74 fps)

Pond DMH3: DMH3



Summary for Pond DMH4: DMH4

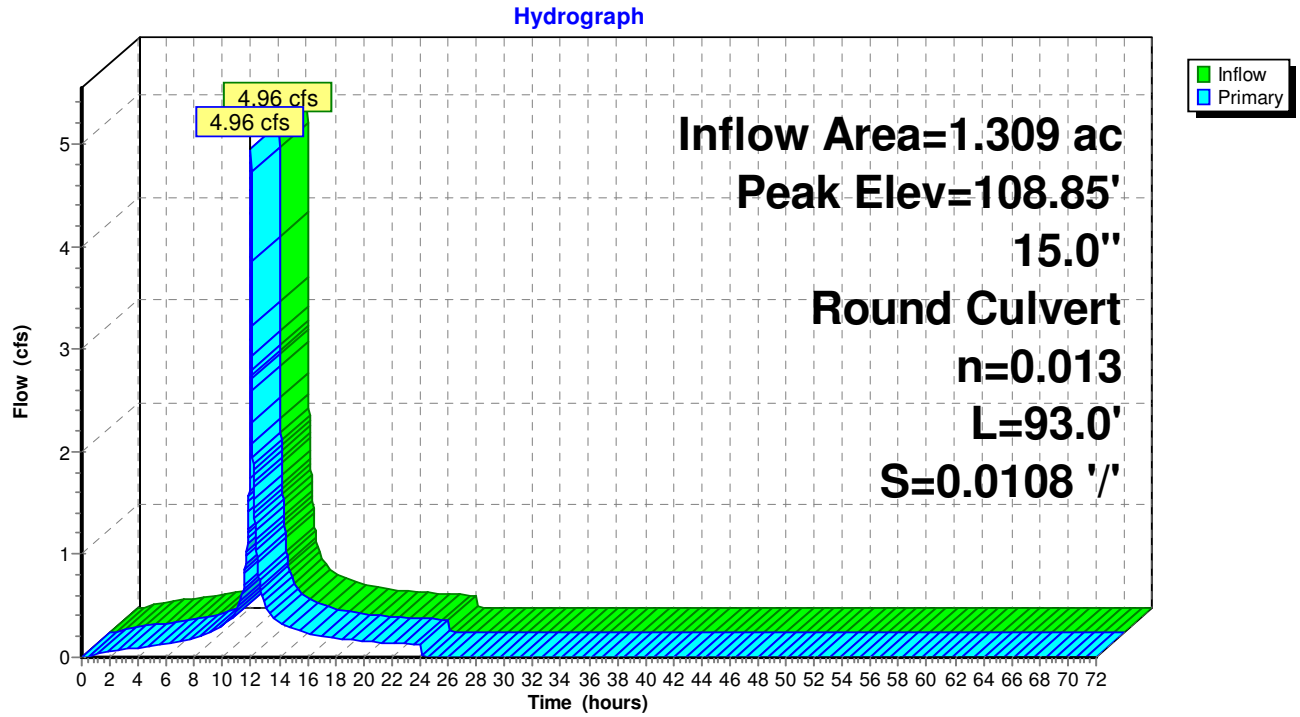
Inflow Area = 1.309 ac, 84.54% Impervious, Inflow Depth = 4.68" for 10-yr event
Inflow = 4.96 cfs @ 12.00 hrs, Volume= 0.510 af
Outflow = 4.96 cfs @ 12.00 hrs, Volume= 0.510 af, Atten= 0%, Lag= 0.0 min
Primary = 4.96 cfs @ 12.00 hrs, Volume= 0.510 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 108.85' @ 12.00 hrs
Flood Elev= 113.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.50'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 107.50' / 106.50' S= 0.0108 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.86 cfs @ 12.00 hrs HW=108.84' TW=107.80' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.86 cfs @ 4.59 fps)

Pond DMH4: DMH4



Summary for Pond DMH5: DMH5

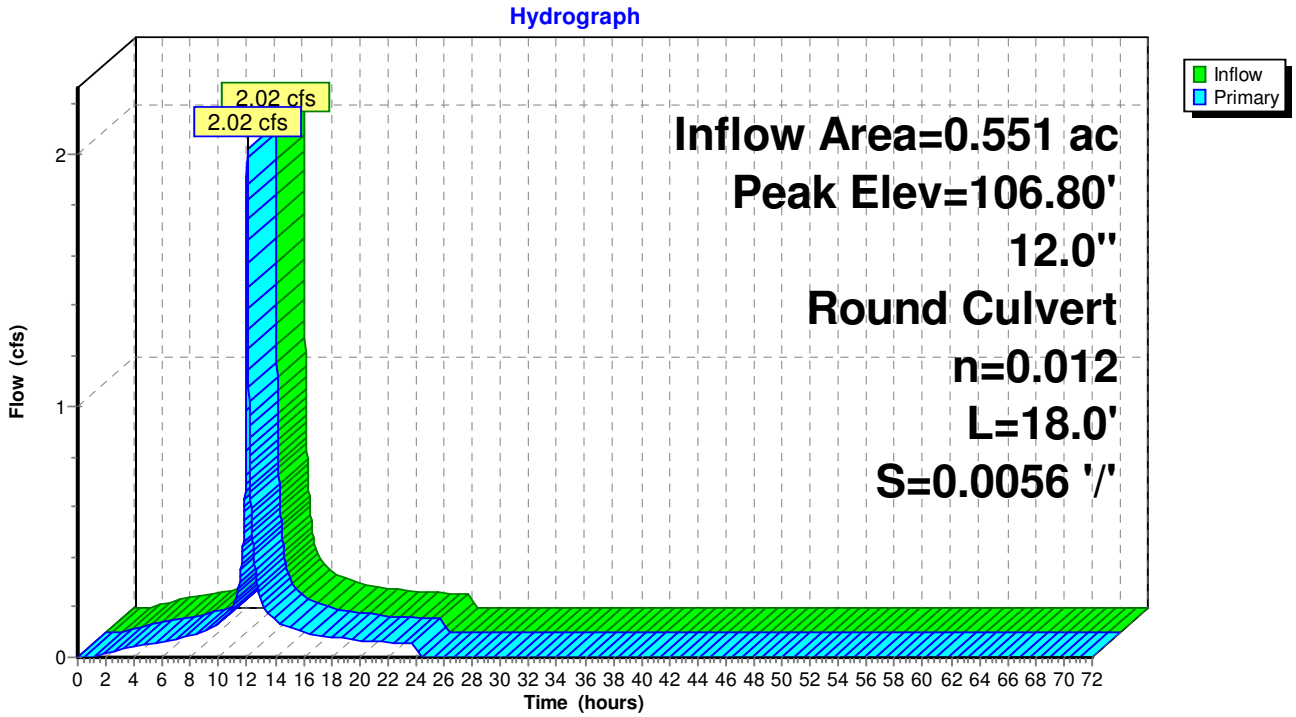
Inflow Area = 0.551 ac, 89.73% Impervious, Inflow Depth = 4.86" for 10-yr event
Inflow = 2.02 cfs @ 12.02 hrs, Volume= 0.223 af
Outflow = 2.02 cfs @ 12.02 hrs, Volume= 0.223 af, Atten= 0%, Lag= 0.0 min
Primary = 2.02 cfs @ 12.02 hrs, Volume= 0.223 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 106.80' @ 12.02 hrs
Flood Elev= 109.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.85'	**12.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 105.85' / 105.75' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 12.02 hrs HW=106.79' TW=105.68' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.01 cfs @ 3.39 fps)

Pond DMH5: DMH5



Summary for Pond OSBR1: OS BioRetention 1

Inflow Area = 3.215 ac, 49.81% Impervious, Inflow Depth > 4.00" for 10-yr event
Inflow = 0.75 cfs @ 14.23 hrs, Volume= 1.073 af
Outflow = 0.75 cfs @ 14.23 hrs, Volume= 1.073 af, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 14.23 hrs, Volume= 1.064 af
Secondary = 0.03 cfs @ 12.93 hrs, Volume= 0.009 af

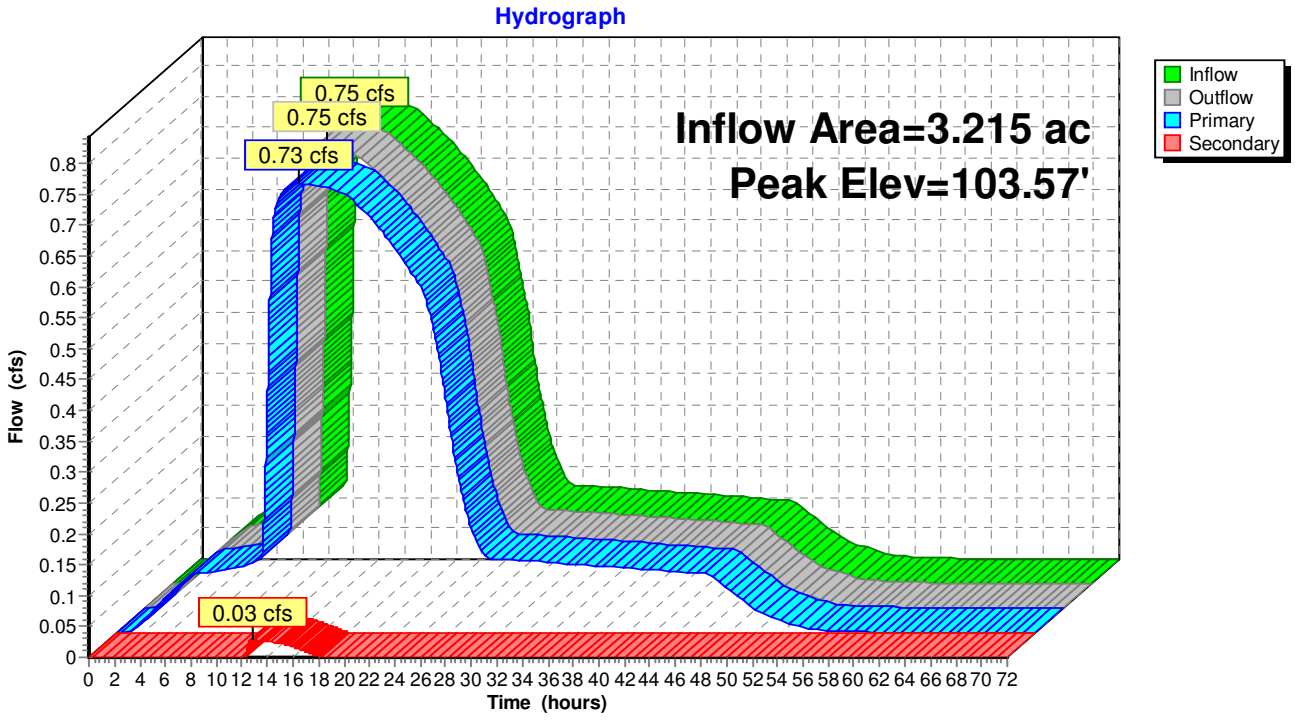
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 103.57' @ 12.93 hrs
Flood Elev= 107.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.50'	**6.0" Round Culvert** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 102.50' / 102.10' S= 0.0089 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	103.50'	**18.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.50' / 103.00' S= 0.0313 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.73 cfs @ 14.23 hrs HW=103.57' TW=102.60' (Dynamic Tailwater)
↳**1=Culvert** (Barrel Controls 0.73 cfs @ 3.71 fps)

Secondary OutFlow Max=0.03 cfs @ 12.93 hrs HW=103.57' TW=103.04' (Dynamic Tailwater)
↳**2=Culvert** (Inlet Controls 0.03 cfs @ 0.90 fps)

Pond OSBR1: OS BioRetention 1



Summary for Pond P2: Pipe 2

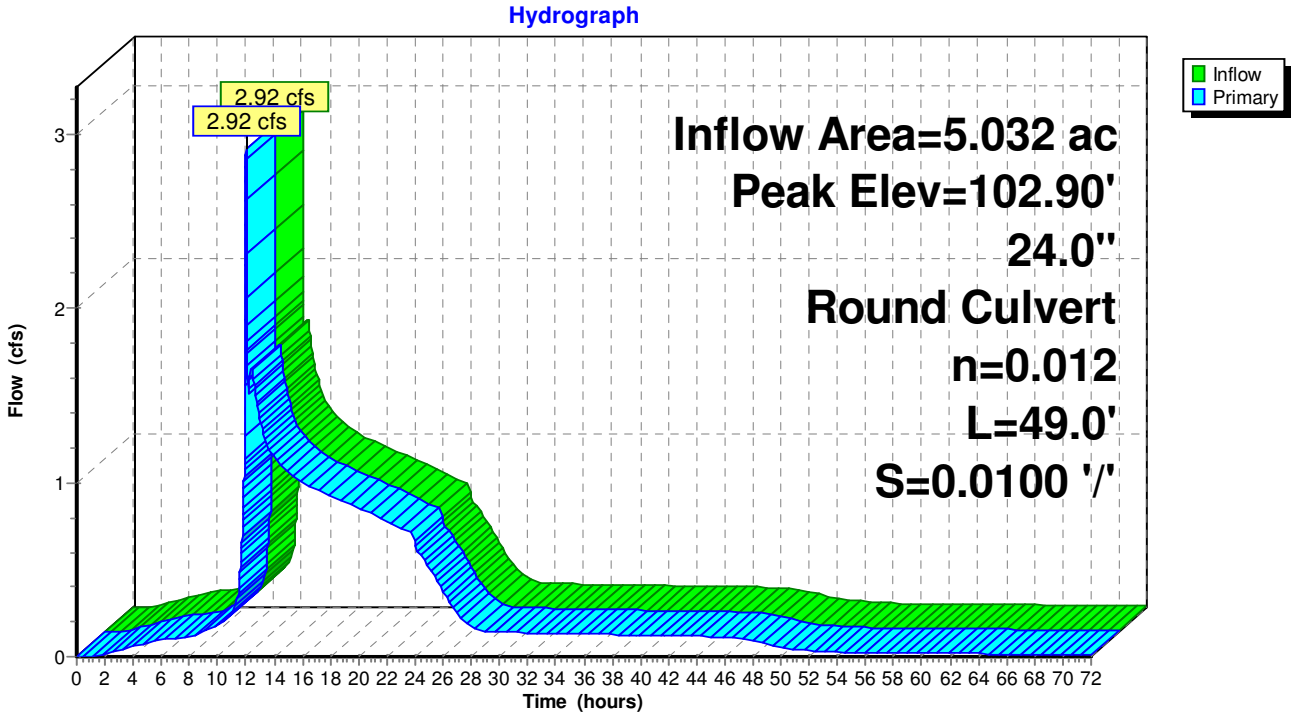
Inflow Area = 5.032 ac, 37.12% Impervious, Inflow Depth > 3.55" for 10-yr event
Inflow = 2.92 cfs @ 12.01 hrs, Volume= 1.487 af
Outflow = 2.92 cfs @ 12.01 hrs, Volume= 1.487 af, Atten= 0%, Lag= 0.0 min
Primary = 2.92 cfs @ 12.01 hrs, Volume= 1.487 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 102.90' @ 12.01 hrs
Flood Elev= 106.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.15'	**24.0" Round Culvert** L= 49.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 102.15' / 101.66' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=2.89 cfs @ 12.01 hrs HW=102.90' TW=102.29' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.89 cfs @ 4.01 fps)

Pond P2: Pipe 2



Summary for Pond P3: Pipe 3

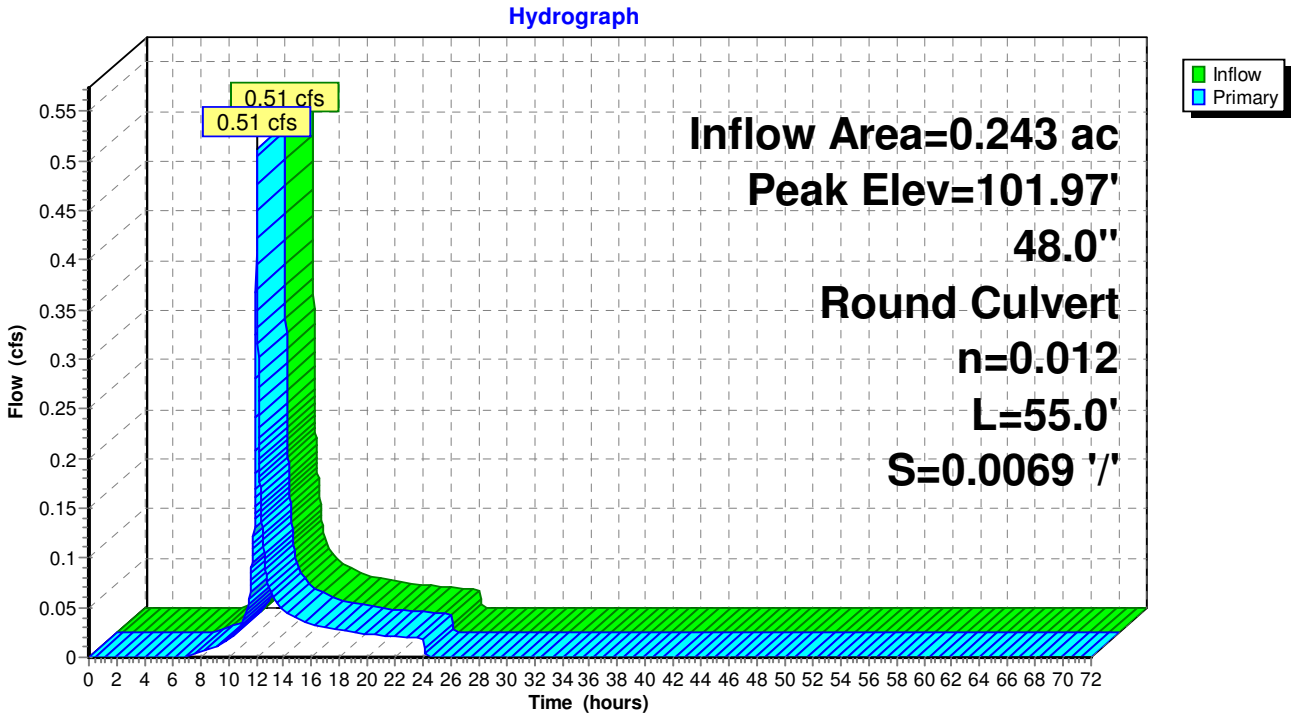
Inflow Area = 0.243 ac, 0.00% Impervious, Inflow Depth = 2.54" for 10-yr event
Inflow = 0.51 cfs @ 12.04 hrs, Volume= 0.051 af
Outflow = 0.51 cfs @ 12.04 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.04 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 101.97' @ 12.04 hrs
Flood Elev= 105.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.72'	**48.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.72' / 101.34' S= 0.0069 '/' Cc= 0.900 n= 0.012, Flow Area= 12.57 sf

Primary OutFlow Max=0.51 cfs @ 12.04 hrs HW=101.97' TW=101.51' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.51 cfs @ 2.33 fps)

Pond P3: Pipe 3



Summary for Pond RD1: RD1

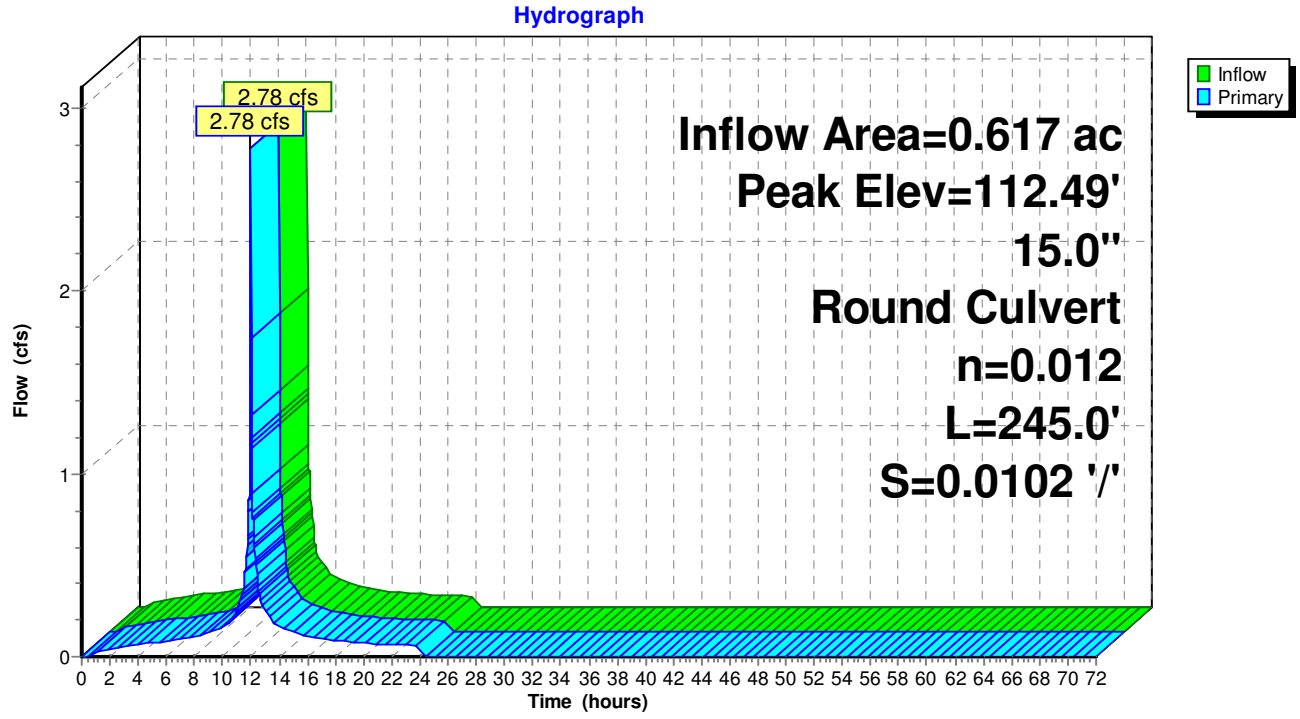
Inflow Area = 0.617 ac,100.00% Impervious, Inflow Depth = 5.20" for 10-yr event
Inflow = 2.78 cfs @ 11.99 hrs, Volume= 0.268 af
Outflow = 2.78 cfs @ 11.99 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min
Primary = 2.78 cfs @ 11.99 hrs, Volume= 0.268 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 112.49' @ 11.99 hrs
Flood Elev= 114.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.50'	**15.0" Round Culvert** L= 245.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 111.50' / 109.00' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.78 cfs @ 11.99 hrs HW=112.49' TW=108.83' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.78 cfs @ 2.67 fps)

Pond RD1: RD1

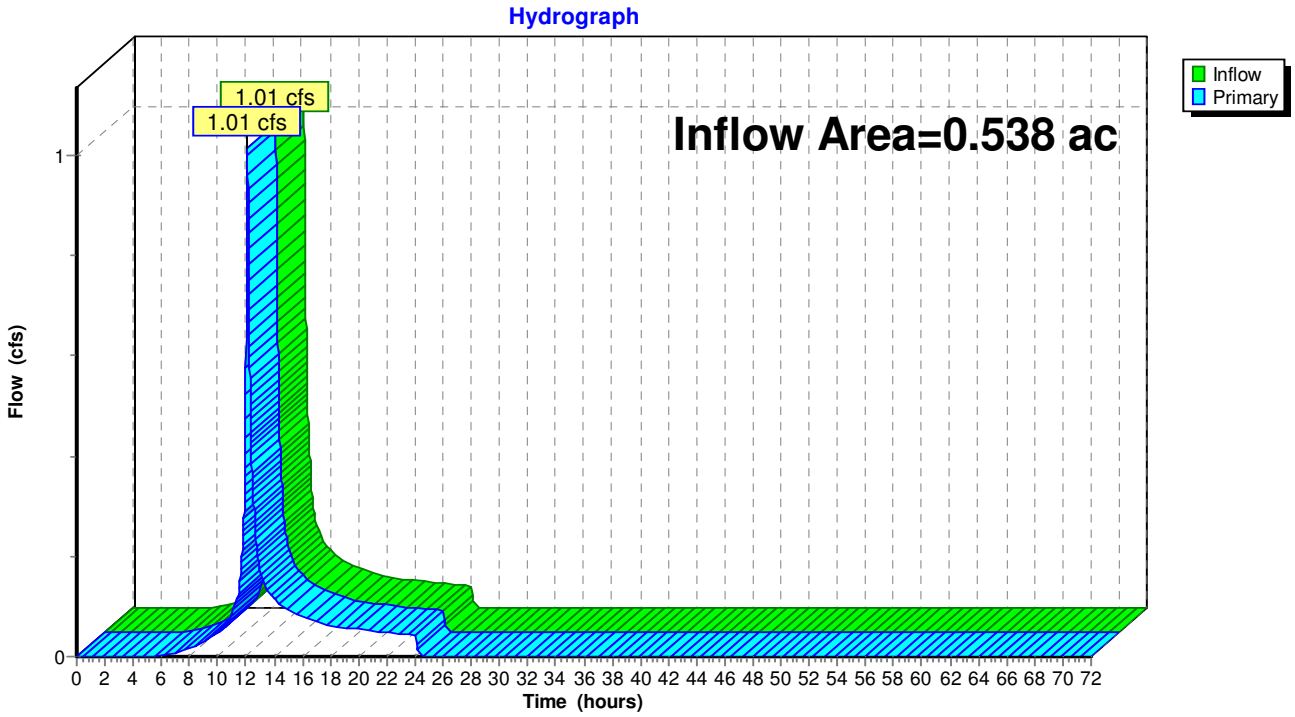


Summary for Link A: A

Inflow Area = 0.538 ac, 22.51% Impervious, Inflow Depth = 2.83" for 10-yr event
Inflow = 1.01 cfs @ 12.10 hrs, Volume= 0.127 af
Primary = 1.01 cfs @ 12.10 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link A: A

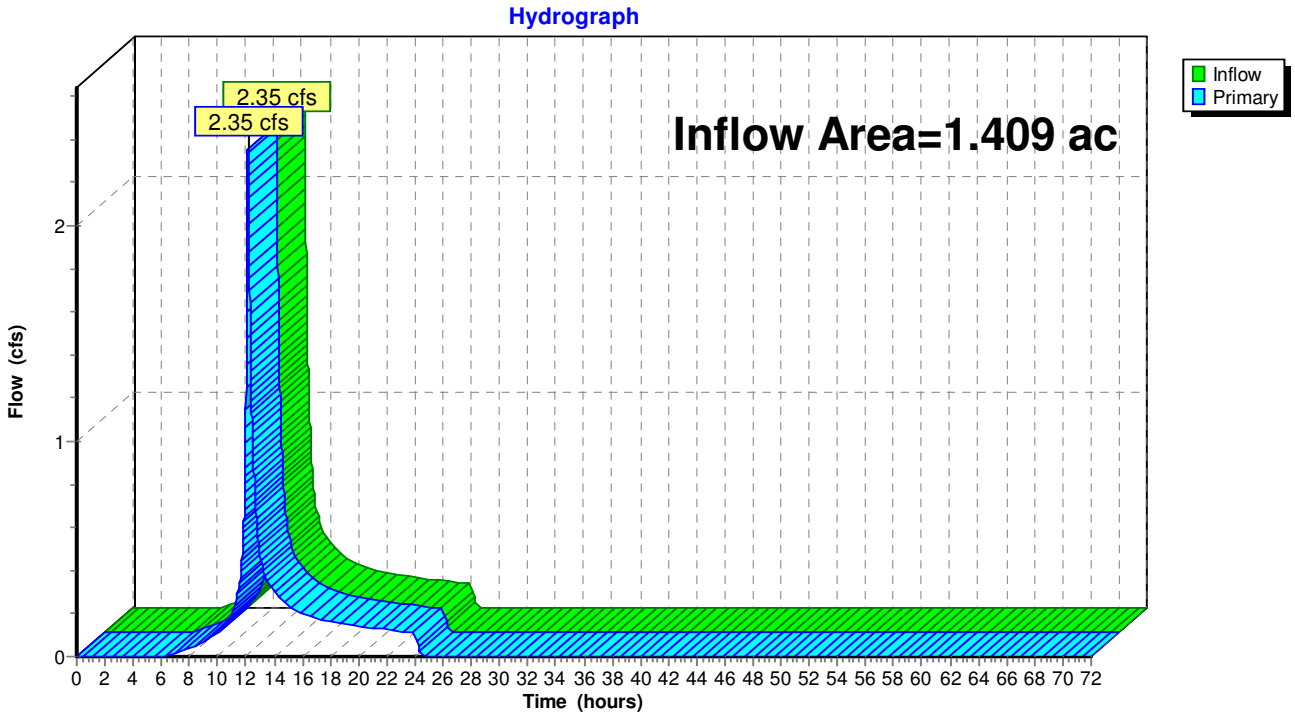


Summary for Link B: B

Inflow Area = 1.409 ac, 0.00% Impervious, Inflow Depth = 2.76" for 10-yr event
Inflow = 2.35 cfs @ 12.14 hrs, Volume= 0.324 af
Primary = 2.35 cfs @ 12.14 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link B: B

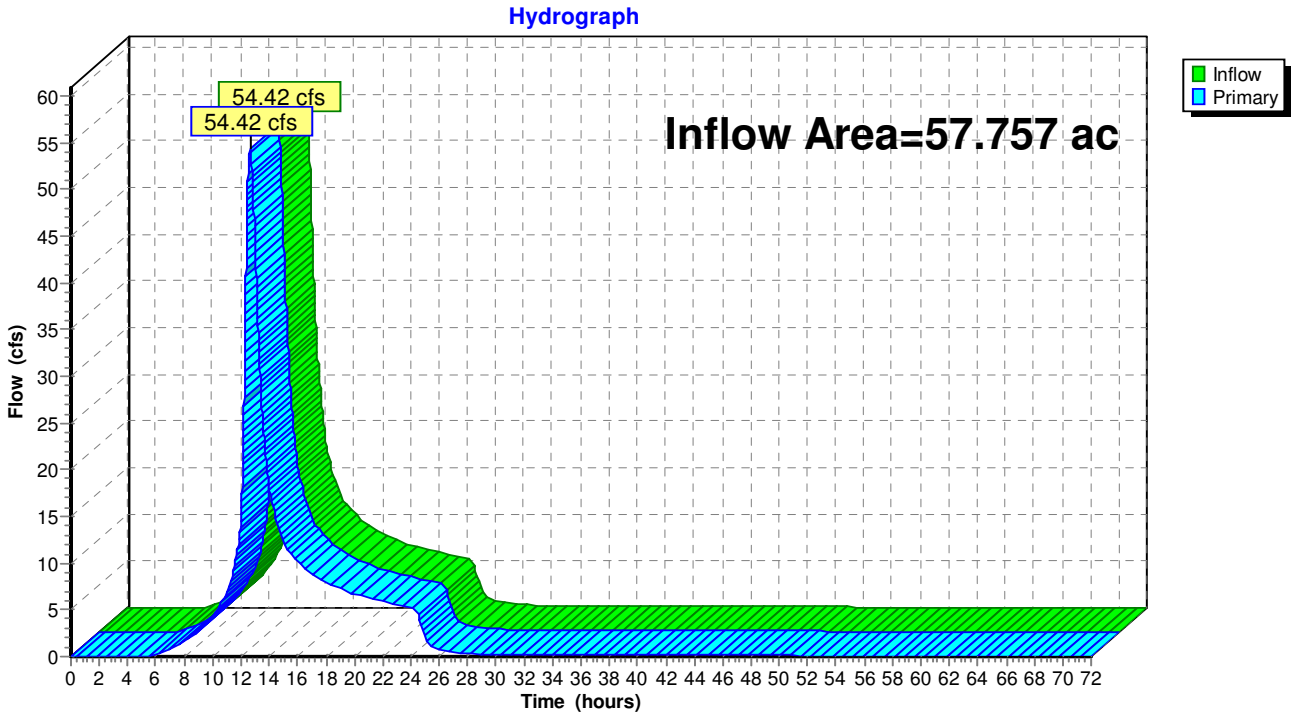


Summary for Link C: C

Inflow Area = 57.757 ac, 5.03% Impervious, Inflow Depth > 3.19" for 10-yr event
Inflow = 54.42 cfs @ 12.64 hrs, Volume= 15.359 af
Primary = 54.42 cfs @ 12.64 hrs, Volume= 15.359 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link C: C



A – 2

NODE LISTING – 25-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=14,060 sf 36.26% Impervious Runoff Depth=4.15"
Flow Length=329' Tc=12.5 min CN=76 Runoff=0.82 cfs 0.112 af

Subcatchment 2: 2 Runoff Area=9,380 sf 1.90% Impervious Runoff Depth=3.94"
Flow Length=140' Tc=9.3 min CN=74 Runoff=0.58 cfs 0.071 af

Subcatchment 3: 3 Runoff Area=6,787 sf 69.74% Impervious Runoff Depth=5.36"
Flow Length=119' Tc=2.5 min CN=87 Runoff=0.74 cfs 0.070 af

Subcatchment 4: 4 Runoff Area=13,533 sf 56.26% Impervious Runoff Depth=5.14"
Flow Length=92' Tc=9.0 min CN=85 Runoff=1.10 cfs 0.133 af

Subcatchment 5: 5 Runoff Area=4,926 sf 90.60% Impervious Runoff Depth=6.40"
Flow Length=215' Tc=2.0 min CN=96 Runoff=0.59 cfs 0.060 af

Subcatchment 6: 6 Runoff Area=4,890 sf 92.25% Impervious Runoff Depth=6.40"
Flow Length=206' Tc=2.0 min CN=96 Runoff=0.59 cfs 0.060 af

Subcatchment 7: 7 Runoff Area=6,327 sf 90.17% Impervious Runoff Depth=6.29"
Flow Length=182' Tc=2.1 min CN=95 Runoff=0.76 cfs 0.076 af

Subcatchment 8: 8 Runoff Area=17,659 sf 89.57% Impervious Runoff Depth=6.29"
Flow Length=198' Tc=6.4 min CN=95 Runoff=1.81 cfs 0.212 af

Subcatchment 9: 9 Runoff Area=12,572 sf 0.29% Impervious Runoff Depth=3.94"
Flow Length=264' Tc=11.0 min CN=74 Runoff=0.73 cfs 0.095 af

Subcatchment 10: 10 Runoff Area=26,880 sf 100.00% Impervious Runoff Depth=6.64"
Flow Length=112' Tc=1.2 min CN=98 Runoff=3.27 cfs 0.342 af

Subcatchment 11: 11 Runoff Area=46,481 sf 0.00% Impervious Runoff Depth=4.37"
Flow Length=281' Tc=16.9 min CN=78 Runoff=2.49 cfs 0.388 af

Subcatchment 12: 12 Runoff Area=48,341 sf 0.00% Impervious Runoff Depth=3.31"
Flow Length=661' Tc=2.8 min CN=68 Runoff=3.35 cfs 0.306 af

Subcatchment 13: 13 Runoff Area=19,790 sf 77.14% Impervious Runoff Depth=6.05"
Flow Length=360' Tc=2.5 min CN=93 Runoff=2.31 cfs 0.229 af

Subcatchment 14: 14 Runoff Area=12,887 sf 70.47% Impervious Runoff Depth=6.05"
Flow Length=361' Tc=2.5 min CN=93 Runoff=1.51 cfs 0.149 af

Subcatchment 15: 15 Runoff Area=30,793 sf 37.68% Impervious Runoff Depth=5.03"
Flow Length=204' Tc=8.8 min CN=84 Runoff=2.45 cfs 0.296 af

Subcatchment 16: 16 Runoff Area=31,967 sf 0.00% Impervious Runoff Depth=4.58"
Flow Length=233' Tc=18.6 min CN=80 Runoff=1.72 cfs 0.280 af

Subcatchment 17: 17 Runoff Area=91,848 sf 0.00% Impervious Runoff Depth=4.26"
Flow Length=569' Tc=24.4 min CN=77 Runoff=4.07 cfs 0.748 af

Subcatchment 18: 18 Runoff Area=260,071 sf 0.00% Impervious Runoff Depth=4.47"
Flow Length=1,365' Tc=25.6 min CN=79 Runoff=11.78 cfs 2.226 af

Subcatchment 19: 19 Runoff Area=271,263 sf 0.00% Impervious Runoff Depth=4.04"
Flow Length=1,033' Tc=23.9 min CN=75 Runoff=11.54 cfs 2.099 af

Subcatchment 20: 20 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=4.47"
Flow Length=1,678' Tc=55.8 min CN=79 Runoff=48.69 cfs 13.403 af

Subcatchment 21: 21 Runoff Area=10,571 sf 0.00% Impervious Runoff Depth=3.73"
Flow Length=418' Tc=6.5 min CN=72 Runoff=0.71 cfs 0.075 af

Subcatchment 22: 22 Runoff Area=43,189 sf 48.03% Impervious Runoff Depth=4.69"
Flow Length=289' Tc=13.3 min CN=81 Runoff=2.75 cfs 0.388 af

Subcatchment 23: 23 Runoff Area=50,787 sf 0.00% Impervious Runoff Depth=4.04"
Flow Length=477' Tc=14.5 min CN=75 Runoff=2.69 cfs 0.393 af

Reach R1: R1 Avg. Flow Depth=0.74' Max Vel=2.33 fps Inflow=5.87 cfs 2.462 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=5.52 cfs 2.461 af

Reach R10: R10 Avg. Flow Depth=0.26' Max Vel=2.49 fps Inflow=1.63 cfs 0.229 af
n=0.022 L=206.0' S=0.0141 '/' Capacity=6.31 cfs Outflow=1.59 cfs 0.229 af

Reach R11: R11 Avg. Flow Depth=0.35' Max Vel=1.37 fps Inflow=1.59 cfs 0.229 af
n=0.035 L=397.0' S=0.0076 '/' Capacity=47.49 cfs Outflow=1.38 cfs 0.229 af

Reach R12: R12 Avg. Flow Depth=0.22' Max Vel=1.33 fps Inflow=0.71 cfs 0.075 af
n=0.035 L=418.0' S=0.0133 '/' Capacity=213.86 cfs Outflow=0.57 cfs 0.075 af

Reach R13: R13 Avg. Flow Depth=0.50' Max Vel=1.55 fps Inflow=2.69 cfs 0.388 af
n=0.035 L=315.0' S=0.0060 '/' Capacity=2.60 cfs Outflow=2.56 cfs 0.388 af

Reach R2: R2 Avg. Flow Depth=0.88' Max Vel=2.29 fps Inflow=9.35 cfs 3.209 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=9.30 cfs 3.209 af

Reach R3: R3 Avg. Flow Depth=1.00' Max Vel=2.08 fps Inflow=10.35 cfs 3.438 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=10.29 cfs 3.438 af

Reach R4: R4 Avg. Flow Depth=1.30' Max Vel=2.99 fps Inflow=22.06 cfs 5.664 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=22.05 cfs 5.664 af

Reach R5: R5 Avg. Flow Depth=1.74' Max Vel=2.36 fps Inflow=35.79 cfs 8.151 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=30.73 cfs 8.149 af

Reach R6: R6 Avg. Flow Depth=2.53' Max Vel=3.31 fps Inflow=74.15 cfs 21.551 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=73.90 cfs 21.551 af

Reach R7: R7 Avg. Flow Depth=0.09' Max Vel=1.44 fps Inflow=0.14 cfs 0.086 af
n=0.022 L=42.0' S=0.0202 '/' Capacity=6.00 cfs Outflow=0.14 cfs 0.086 af

Reach R8: R8 Avg. Flow Depth=0.77' Max Vel=2.09 fps Inflow=4.30 cfs 2.032 af
n=0.035 L=173.0' S=0.0066 '/' Capacity=11.65 cfs Outflow=4.18 cfs 2.032 af

Reach R9: R9 Avg. Flow Depth=0.21' Max Vel=1.43 fps Inflow=0.93 cfs 0.149 af
n=0.022 L=120.0' S=0.0063 '/' Capacity=5.94 cfs Outflow=0.91 cfs 0.149 af

Pond BR1: BioRetention 1 Peak Elev=106.24' Storage=33,447 cf Inflow=9.79 cfs 1.436 af
Outflow=0.87 cfs 1.435 af

Pond BR2: BioRetention 2 Peak Elev=104.65' Storage=6,010 cf Inflow=2.45 cfs 0.296 af
Primary=0.57 cfs 0.233 af Secondary=0.68 cfs 0.057 af Outflow=1.25 cfs 0.290 af

Pond BR3: BioRetention 3 Peak Elev=105.40' Storage=3,319 cf Inflow=2.31 cfs 0.229 af
Outflow=1.63 cfs 0.229 af

Pond BR4: BioRetention 4 Peak Elev=104.27' Storage=3,379 cf Inflow=1.51 cfs 0.149 af
Outflow=0.93 cfs 0.149 af

Pond BR5: BioRetention 5 Peak Elev=99.64' Storage=3,148 cf Inflow=2.75 cfs 0.388 af
Outflow=2.69 cfs 0.388 af

Pond CB1: CB1 Peak Elev=114.64' Inflow=0.74 cfs 0.070 af
12.0" Round Culvert n=0.012 L=152.0' S=0.0102 '/' Outflow=0.74 cfs 0.070 af

Pond CB2: CB2 Peak Elev=113.95' Inflow=1.10 cfs 0.133 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0100 '/' Outflow=1.10 cfs 0.133 af

Pond CB3: CB3 Peak Elev=109.54' Inflow=0.59 cfs 0.060 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0100 '/' Outflow=0.59 cfs 0.060 af

Pond CB4: CB4 Peak Elev=109.53' Inflow=0.59 cfs 0.060 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0500 '/' Outflow=0.59 cfs 0.060 af

Pond CB5: CB5 Peak Elev=107.74' Inflow=1.81 cfs 0.212 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0119 '/' Outflow=1.81 cfs 0.212 af

Pond CB6: CB6 Peak Elev=107.67' Inflow=0.76 cfs 0.076 af
12.0" Round Culvert n=0.012 L=173.0' S=0.0075 '/' Outflow=0.76 cfs 0.076 af

Pond CB7: CB7 Peak Elev=108.17' Inflow=6.33 cfs 0.759 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=6.33 cfs 0.759 af

Pond DMH1: DMH1 Peak Elev=112.91' Inflow=1.57 cfs 0.203 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0100 '/' Outflow=1.57 cfs 0.203 af

Pond DMH2: DMH2 Peak Elev=112.21' Inflow=1.57 cfs 0.203 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0143 '/' Outflow=1.57 cfs 0.203 af

Pond DMH3: DMH3 Peak Elev=109.49' Inflow=1.18 cfs 0.120 af
15.0" Round Culvert n=0.012 L=19.0' S=0.0105 '/' Outflow=1.18 cfs 0.120 af

Pond DMH4: DMH4 Peak Elev=109.45' Inflow=5.92 cfs 0.664 af
15.0" Round Culvert n=0.013 L=93.0' S=0.0108 '/' Outflow=5.92 cfs 0.664 af

Pond DMH5: DMH5 Peak Elev=106.92' Inflow=2.41 cfs 0.288 af
12.0" Round Culvert n=0.012 L=18.0' S=0.0056 '/' Outflow=2.41 cfs 0.288 af

Pond OSBR1: OS BioRetention 1 Peak Elev=103.66' Inflow=0.87 cfs 1.435 af
Primary=0.75 cfs 1.349 af Secondary=0.14 cfs 0.086 af Outflow=0.87 cfs 1.435 af

Pond P2: Pipe 2 Peak Elev=103.08' Inflow=4.30 cfs 2.032 af
24.0" Round Culvert n=0.012 L=49.0' S=0.0100 '/' Outflow=4.30 cfs 2.032 af

Pond P3: Pipe 3 Peak Elev=102.02' Inflow=0.71 cfs 0.075 af
48.0" Round Culvert n=0.012 L=55.0' S=0.0069 '/' Outflow=0.71 cfs 0.075 af

Pond RD1: RD1 Peak Elev=112.61' Inflow=3.27 cfs 0.342 af
15.0" Round Culvert n=0.012 L=245.0' S=0.0102 '/' Outflow=3.27 cfs 0.342 af

Link A: A Inflow=1.37 cfs 0.182 af
Primary=1.37 cfs 0.182 af

Link B: B Inflow=3.21 cfs 0.468 af
Primary=3.21 cfs 0.468 af

Link C: C Inflow=73.90 cfs 21.551 af
Primary=73.90 cfs 21.551 af

Total Runoff Area = 59.703 ac Runoff Volume = 22.211 af Average Runoff Depth = 4.46"
94.93% Pervious = 56.679 ac 5.07% Impervious = 3.024 ac

A – 2

NODE LISTING – 50-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=14,060 sf 36.26% Impervious Runoff Depth=5.35"
Flow Length=329' Tc=12.5 min CN=76 Runoff=1.00 cfs 0.144 af

Subcatchment 2: 2 Runoff Area=9,380 sf 1.90% Impervious Runoff Depth=5.11"
Flow Length=140' Tc=9.3 min CN=74 Runoff=0.72 cfs 0.092 af

Subcatchment 3: 3 Runoff Area=6,787 sf 69.74% Impervious Runoff Depth=6.65"
Flow Length=119' Tc=2.5 min CN=87 Runoff=0.85 cfs 0.086 af

Subcatchment 4: 4 Runoff Area=13,533 sf 56.26% Impervious Runoff Depth=6.42"
Flow Length=92' Tc=9.0 min CN=85 Runoff=1.29 cfs 0.166 af

Subcatchment 5: 5 Runoff Area=4,926 sf 90.60% Impervious Runoff Depth=7.73"
Flow Length=215' Tc=2.0 min CN=96 Runoff=0.67 cfs 0.073 af

Subcatchment 6: 6 Runoff Area=4,890 sf 92.25% Impervious Runoff Depth=7.73"
Flow Length=206' Tc=2.0 min CN=96 Runoff=0.67 cfs 0.072 af

Subcatchment 7: 7 Runoff Area=6,327 sf 90.17% Impervious Runoff Depth=7.61"
Flow Length=182' Tc=2.1 min CN=95 Runoff=0.86 cfs 0.092 af

Subcatchment 8: 8 Runoff Area=17,659 sf 89.57% Impervious Runoff Depth=7.61"
Flow Length=198' Tc=6.4 min CN=95 Runoff=2.06 cfs 0.257 af

Subcatchment 9: 9 Runoff Area=12,572 sf 0.29% Impervious Runoff Depth=5.11"
Flow Length=264' Tc=11.0 min CN=74 Runoff=0.90 cfs 0.123 af

Subcatchment 10: 10 Runoff Area=26,880 sf 100.00% Impervious Runoff Depth=7.97"
Flow Length=112' Tc=1.2 min CN=98 Runoff=3.69 cfs 0.410 af

Subcatchment 11: 11 Runoff Area=46,481 sf 0.00% Impervious Runoff Depth=5.59"
Flow Length=281' Tc=16.9 min CN=78 Runoff=3.03 cfs 0.497 af

Subcatchment 12: 12 Runoff Area=48,341 sf 0.00% Impervious Runoff Depth=4.41"
Flow Length=661' Tc=2.8 min CN=68 Runoff=4.23 cfs 0.408 af

Subcatchment 13: 13 Runoff Area=19,790 sf 77.14% Impervious Runoff Depth=7.37"
Flow Length=360' Tc=2.5 min CN=93 Runoff=2.63 cfs 0.279 af

Subcatchment 14: 14 Runoff Area=12,887 sf 70.47% Impervious Runoff Depth=7.37"
Flow Length=361' Tc=2.5 min CN=93 Runoff=1.72 cfs 0.182 af

Subcatchment 15: 15 Runoff Area=30,793 sf 37.68% Impervious Runoff Depth=6.30"
Flow Length=204' Tc=8.8 min CN=84 Runoff=2.89 cfs 0.371 af

Subcatchment 16: 16 Runoff Area=31,967 sf 0.00% Impervious Runoff Depth=5.82"
Flow Length=233' Tc=18.6 min CN=80 Runoff=2.07 cfs 0.356 af

Subcatchment 17: 17 Runoff Area=91,848 sf 0.00% Impervious Runoff Depth=5.47"
Flow Length=569' Tc=24.4 min CN=77 Runoff=4.99 cfs 0.961 af

Subcatchment 18: 18 Runoff Area=260,071 sf 0.00% Impervious Runoff Depth=5.70"
Flow Length=1,365' Tc=25.6 min CN=79 Runoff=14.33 cfs 2.838 af

Subcatchment 19: 19 Runoff Area=271,263 sf 0.00% Impervious Runoff Depth=5.23"
Flow Length=1,033' Tc=23.9 min CN=75 Runoff=14.28 cfs 2.715 af

Subcatchment 20: 20 Runoff Area=1,565,675 sf 0.00% Impervious Runoff Depth=5.70"
Flow Length=1,678' Tc=55.8 min CN=79 Runoff=59.70 cfs 17.084 af

Subcatchment 21: 21 Runoff Area=10,571 sf 0.00% Impervious Runoff Depth=4.88"
Flow Length=418' Tc=6.5 min CN=72 Runoff=0.88 cfs 0.099 af

Subcatchment 22: 22 Runoff Area=43,189 sf 48.03% Impervious Runoff Depth=5.94"
Flow Length=289' Tc=13.3 min CN=81 Runoff=3.29 cfs 0.491 af

Subcatchment 23: 23 Runoff Area=50,787 sf 0.00% Impervious Runoff Depth=5.23"
Flow Length=477' Tc=14.5 min CN=75 Runoff=3.32 cfs 0.508 af

Reach R1: R1 Avg. Flow Depth=0.85' Max Vel=2.56 fps Inflow=7.91 cfs 3.086 af
n=0.035 L=343.0' S=0.0084 '/' Capacity=36.29 cfs Outflow=7.51 cfs 3.086 af

Reach R10: R10 Avg. Flow Depth=0.28' Max Vel=2.61 fps Inflow=1.89 cfs 0.279 af
n=0.022 L=206.0' S=0.0141 '/' Capacity=6.31 cfs Outflow=1.85 cfs 0.279 af

Reach R11: R11 Avg. Flow Depth=0.37' Max Vel=1.44 fps Inflow=1.85 cfs 0.279 af
n=0.035 L=397.0' S=0.0076 '/' Capacity=47.49 cfs Outflow=1.63 cfs 0.279 af

Reach R12: R12 Avg. Flow Depth=0.24' Max Vel=1.43 fps Inflow=0.88 cfs 0.099 af
n=0.035 L=418.0' S=0.0133 '/' Capacity=213.86 cfs Outflow=0.73 cfs 0.099 af

Reach R13: R13 Avg. Flow Depth=0.54' Max Vel=1.64 fps Inflow=3.23 cfs 0.491 af
n=0.035 L=315.0' S=0.0060 '/' Capacity=2.60 cfs Outflow=3.09 cfs 0.491 af

Reach R2: R2 Avg. Flow Depth=0.97' Max Vel=2.44 fps Inflow=11.66 cfs 4.047 af
n=0.035 L=290.0' S=0.0063 '/' Capacity=43.28 cfs Outflow=11.61 cfs 4.047 af

Reach R3: R3 Avg. Flow Depth=1.10' Max Vel=2.22 fps Inflow=12.85 cfs 4.326 af
n=0.035 L=306.0' S=0.0044 '/' Capacity=36.29 cfs Outflow=12.80 cfs 4.325 af

Reach R4: R4 Avg. Flow Depth=1.43' Max Vel=3.18 fps Inflow=27.06 cfs 7.163 af
n=0.035 L=77.0' S=0.0065 '/' Capacity=44.02 cfs Outflow=27.06 cfs 7.163 af

Reach R5: R5 Avg. Flow Depth=1.94' Max Vel=2.53 fps Inflow=44.03 cfs 10.369 af
n=0.035 L=1,789.0' S=0.0027 '/' Capacity=41.22 cfs Outflow=38.56 cfs 10.367 af

Reach R6: R6 Avg. Flow Depth=2.87' Max Vel=3.44 fps Inflow=91.10 cfs 27.451 af
n=0.035 L=468.0' S=0.0036 '/' Capacity=47.42 cfs Outflow=90.87 cfs 27.450 af

Reach R7: R7 Avg. Flow Depth=0.12' Max Vel=1.74 fps Inflow=0.26 cfs 0.194 af
n=0.022 L=42.0' S=0.0202 '/' Capacity=6.00 cfs Outflow=0.26 cfs 0.194 af

Reach R8: R8 Avg. Flow Depth=0.89' Max Vel=2.29 fps Inflow=5.87 cfs 2.549 af
n=0.035 L=173.0' S=0.0066 '/' Capacity=11.65 cfs Outflow=5.75 cfs 2.549 af

Reach R9: R9 Avg. Flow Depth=0.23' Max Vel=1.54 fps Inflow=1.18 cfs 0.182 af
n=0.022 L=120.0' S=0.0063 '/' Capacity=5.94 cfs Outflow=1.16 cfs 0.182 af

Pond BR1: BioRetention 1 Peak Elev=106.46' Storage=41,345 cf Inflow=11.35 cfs 1.776 af
Outflow=0.96 cfs 1.776 af

Pond BR2: BioRetention 2 Peak Elev=104.69' Storage=6,395 cf Inflow=2.89 cfs 0.371 af
Primary=0.78 cfs 0.272 af Secondary=1.01 cfs 0.093 af Outflow=1.79 cfs 0.365 af

Pond BR3: BioRetention 3 Peak Elev=105.44' Storage=3,404 cf Inflow=2.63 cfs 0.279 af
Outflow=1.89 cfs 0.279 af

Pond BR4: BioRetention 4 Peak Elev=104.30' Storage=3,467 cf Inflow=1.72 cfs 0.182 af
Outflow=1.18 cfs 0.182 af

Pond BR5: BioRetention 5 Peak Elev=99.65' Storage=3,190 cf Inflow=3.29 cfs 0.491 af
Outflow=3.23 cfs 0.491 af

Pond CB1: CB1 Peak Elev=114.67' Inflow=0.85 cfs 0.086 af
12.0" Round Culvert n=0.012 L=152.0' S=0.0102 '/' Outflow=0.85 cfs 0.086 af

Pond CB2: CB2 Peak Elev=114.01' Inflow=1.29 cfs 0.166 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0100 '/' Outflow=1.29 cfs 0.166 af

Pond CB3: CB3 Peak Elev=110.27' Inflow=0.67 cfs 0.073 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0100 '/' Outflow=0.67 cfs 0.073 af

Pond CB4: CB4 Peak Elev=110.27' Inflow=0.67 cfs 0.072 af
12.0" Round Culvert n=0.012 L=5.0' S=0.0500 '/' Outflow=0.67 cfs 0.072 af

Pond CB5: CB5 Peak Elev=107.80' Inflow=2.06 cfs 0.257 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0119 '/' Outflow=2.06 cfs 0.257 af

Pond CB6: CB6 Peak Elev=107.72' Inflow=0.86 cfs 0.092 af
12.0" Round Culvert n=0.012 L=173.0' S=0.0075 '/' Outflow=0.86 cfs 0.092 af

Pond CB7: CB7 Peak Elev=108.54' Inflow=7.27 cfs 0.931 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=7.27 cfs 0.931 af

Pond DMH1: DMH1 Peak Elev=112.97' Inflow=1.84 cfs 0.253 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0100 '/' Outflow=1.84 cfs 0.253 af

Pond DMH2: DMH2 Peak Elev=112.26' Inflow=1.84 cfs 0.253 af
15.0" Round Culvert n=0.012 L=112.0' S=0.0143 '/' Outflow=1.84 cfs 0.253 af

Pond DMH3: DMH3 Peak Elev=110.25' Inflow=1.34 cfs 0.145 af
15.0" Round Culvert n=0.012 L=19.0' S=0.0105 '/' Outflow=1.34 cfs 0.145 af

Pond DMH4: DMH4 Peak Elev=110.20' Inflow=6.75 cfs 0.808 af
15.0" Round Culvert n=0.013 L=93.0' S=0.0108 '/' Outflow=6.75 cfs 0.808 af

Pond DMH5: DMH5 Peak Elev=107.04' Inflow=2.74 cfs 0.349 af
12.0" Round Culvert n=0.012 L=18.0' S=0.0056 '/' Outflow=2.74 cfs 0.349 af

Pond OSBR1: OS BioRetention 1 Peak Elev=103.72' Inflow=0.96 cfs 1.776 af
Primary=0.76 cfs 1.582 af Secondary=0.26 cfs 0.194 af Outflow=0.96 cfs 1.776 af

Pond P2: Pipe 2 Peak Elev=103.27' Inflow=5.87 cfs 2.549 af
24.0" Round Culvert n=0.012 L=49.0' S=0.0100 '/' Outflow=5.87 cfs 2.549 af

Pond P3: Pipe 3 Peak Elev=102.05' Inflow=0.88 cfs 0.099 af
48.0" Round Culvert n=0.012 L=55.0' S=0.0069 '/' Outflow=0.88 cfs 0.099 af

Pond RD1: RD1 Peak Elev=112.75' Inflow=3.69 cfs 0.410 af
15.0" Round Culvert n=0.012 L=245.0' S=0.0102 '/' Outflow=3.69 cfs 0.410 af

Link A: A Inflow=1.68 cfs 0.236 af
Primary=1.68 cfs 0.236 af

Link B: B Inflow=3.97 cfs 0.607 af
Primary=3.97 cfs 0.607 af

Link C: C Inflow=90.87 cfs 27.450 af
Primary=90.87 cfs 27.450 af

Total Runoff Area = 59.703 ac Runoff Volume = 28.303 af Average Runoff Depth = 5.69"
94.93% Pervious = 56.679 ac 5.07% Impervious = 3.024 ac

APPENDIX B

DESIGN

B – 1

STORMWATER BEST MANAGEMENT PRACTICES

BIORETENTION SYSTEM WITH INTERNAL STORAGE RESERVOIR
(Env-Wq 1508.06)

Type/Node Name: **Bioretention 1**

Enter the node name in the drainage analysis if applicable.

3.22	ac	A = Area draining to the practice	
1.60	ac	A_I = Impervious area draining to the practice	
0.50	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.50	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.60	ac-in	WQV= 1" x Rv x A	
5,815	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
582	cf	10% x WQV (check calc for sediment forebay)	
1,454	cf	25% x WQV (check calc for water stored in saturated zone)	
Deep Sump CB		Method of Pretreatment	
	cf	If pretrt is sed forebay: V_{SED} (sediment forebay volume)	**≥ 10%WQV**
6,750	cf	Volume below lowest orifice[2]	**≥ 100%WQV**
2,737	cf	Water stored in voids of saturated zone	**≥ 26%WQV**
0.13	cfs	$2Q_{avg}$ = 2* WQV / 24 hrs * (1hr / 3600 sec)[3]	
105.12	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.12	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	**< $2Q_{WQV}$**
26.92	hours	T_{ED} = Drawdown time of extended detention = 2WQV/Q_{WQV}	**≥ 24-hrs**
18.00	in	Depth of Filter Media	**≥ 18"**
3.00	:1	Pond side slopes	**≥ 3:1**
Grate		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of ≤6")?	
106.46	ft	Peak elevation of the 50-year storm event (E_{50})	
107.00	ft	Berm elevation of the pond	
YES		E_{50} ≤ the berm elevation?	**← yes**

1. Bio ISRs shall be designed in accordance with the "UNHSC Standard Detail, Bioretention ISR Stormwater System", February 2020, available as noted in Appendix B of teh Env-Wq 1500 rules, with the additional requirement that if a forebay is used for pretreatment of stormwater, it shall be designed to completely drain within 72 hours.

2. Volume stored above the wetland soil and below the high flow by-pass.

3. To ensure orifice is sized so that WQV is released at a relatively stable rate.

Designer's Notes:

Summary for Pond BR1: BioRetention 1

Inflow Area = 3.215 ac, 49.81% Impervious, Inflow Depth = 6.63" for 50-yr event
Inflow = 11.35 cfs @ 12.00 hrs, Volume= 1.776 af
Outflow = 0.96 cfs @ 15.37 hrs, Volume= 1.776 af, Atten= 92%, Lag= 201.6 min
Primary = 0.96 cfs @ 15.37 hrs, Volume= 1.776 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 102.50' Surf.Area= 6,255 sf Storage= 2,737 cf
Peak Elev= 106.46' @ 15.35 hrs Surf.Area= 36,042 sf Storage= 41,345 cf (38,609 cf above start)
Flood Elev= 107.00' Surf.Area= 38,083 sf Storage= 61,272 cf (58,535 cf above start)

Plug-Flow detention time= 642.1 min calculated for 1.713 af (96% of inflow)
Center-of-Mass det. time= 582.2 min (1,374.8 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1	101.25'	61,272 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.25	6,255	324.0	0.0	0	0	6,255
102.50	6,255	324.0	35.0	2,737	2,737	6,660
102.75	6,255	324.0	20.0	313	3,049	6,741
104.25	6,255	324.0	10.0	938	3,988	7,227
105.00	7,000	338.1	100.0	4,968	8,956	8,010
105.25	7,255	342.8	100.0	1,782	10,737	8,279
106.00	34,333	840.1	100.0	14,343	25,080	55,093
107.00	38,083	885.8	100.0	36,192	61,272	61,428

Device	Routing	Invert	Outlet Devices
#1	Primary	102.50'	**1.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Device 1	101.58'	**6.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.58' / 101.58' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Device 2	101.25'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Primary	105.25'	**8.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	106.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.96 cfs @ 15.37 hrs HW=106.46' TW=103.70' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.13 cfs @ 8.00 fps)
  - **2=Culvert** (Passes 0.13 cfs of 0.89 cfs potential flow)
    - **3=Exfiltration** (Passes 0.13 cfs of 8.34 cfs potential flow)
- **4=Orifice/Grate** (Orifice Controls 0.84 cfs @ 5.02 fps)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Stage-Discharge for Pond BR1: BioRetention 1 (continued)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
103.41	0.07	103.95	0.09	104.49	0.11	105.03	0.12
103.42	0.07	103.96	0.09	104.50	0.11	105.04	0.12
103.43	0.07	103.97	0.09	104.51	0.11	105.05	0.12
103.44	0.07	103.98	0.09	104.52	0.11	105.06	0.12
103.45	0.07	103.99	0.09	104.53	0.11	105.07	0.12
103.46	0.07	104.00	0.09	104.54	0.11	105.08	0.12
103.47	0.07	104.01	0.09	104.55	0.11	105.09	0.12
103.48	0.07	104.02	0.09	104.56	0.11	105.10	0.12
103.49	0.07	104.03	0.09	104.57	0.11	105.11	0.12
103.50	0.07	104.04	0.09	104.58	0.11	105.12	0.12
103.51	0.07	104.05	0.09	104.59	0.11	105.13	0.12
103.52	0.07	104.06	0.09	104.60	0.11	105.14	0.12
103.53	0.07	104.07	0.09	104.61	0.11	105.15	0.12
103.54	0.07	104.08	0.09	104.62	0.11	105.16	0.12
103.55	0.08	104.09	0.09	104.63	0.11	105.17	0.12
103.56	0.08	104.10	0.09	104.64	0.11	105.18	0.12
103.57	0.08	104.11	0.09	104.65	0.11	105.19	0.12
103.58	0.08	104.12	0.09	104.66	0.11	105.20	0.12
103.59	0.08	104.13	0.09	104.67	0.11	105.21	0.12
103.60	0.08	104.14	0.10	104.68	0.11	105.22	0.12
103.61	0.08	104.15	0.10	104.69	0.11	105.23	0.12
103.62	0.08	104.16	0.10	104.70	0.11	105.24	0.12
103.63	0.08	104.17	0.10	104.71	0.11	105.25	0.12
103.64	0.08	104.18	0.10	104.72	0.11	105.26	0.13
103.65	0.08	104.19	0.10	104.73	0.11	105.27	0.13
103.66	0.08	104.20	0.10	104.74	0.11	105.28	0.14
103.67	0.08	104.21	0.10	104.75	0.11	105.29	0.14
103.68	0.08	104.22	0.10	104.76	0.11	105.30	0.15
103.69	0.08	104.23	0.10	104.77	0.11	105.31	0.16
103.70	0.08	104.24	0.10	104.78	0.11	105.32	0.17
103.71	0.08	104.25	0.10	104.79	0.11	105.33	0.17
103.72	0.08	104.26	0.10	104.80	0.11	105.34	0.18
103.73	0.08	104.27	0.10	104.81	0.11	105.35	0.19
103.74	0.08	104.28	0.10	104.82	0.11	105.36	0.20
103.75	0.08	104.29	0.10	104.83	0.11	105.37	0.22
103.76	0.08	104.30	0.10	104.84	0.11	105.38	0.23
103.77	0.08	104.31	0.10	104.85	0.11	105.39	0.24
103.78	0.08	104.32	0.10	104.86	0.11	105.40	0.25
103.79	0.08	104.33	0.10	104.87	0.12	105.41	0.26
103.80	0.08	104.34	0.10	104.88	0.12	105.42	0.28
103.81	0.08	104.35	0.10	104.89	0.12	105.43	0.29
103.82	0.08	104.36	0.10	104.90	0.12	105.44	0.31
103.83	0.09	104.37	0.10	104.91	0.12	105.45	0.32
103.84	0.09	104.38	0.10	104.92	0.12	105.46	0.33
103.85	0.09	104.39	0.10	104.93	0.12	105.47	0.35
103.86	0.09	104.40	0.10	104.94	0.12	105.48	0.37
103.87	0.09	104.41	0.10	104.95	0.12	105.49	0.38
103.88	0.09	104.42	0.10	104.96	0.12	105.50	0.40
103.89	0.09	104.43	0.10	104.97	0.12	105.51	0.41
103.90	0.09	104.44	0.10	104.98	0.12	105.52	0.42
103.91	0.09	104.45	0.10	104.99	0.12	105.53	0.44
103.92	0.09	104.46	0.10	105.00	0.12	105.54	0.45
103.93	0.09	104.47	0.10	105.01	0.12	105.55	0.46
103.94	0.09	104.48	0.10	105.02	0.12	105.56	0.47

Stage-Area-Storage for Pond BR1: BioRetention 1 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
105.57	16,356	14,418	106.11	34,736	28,879
105.58	16,700	14,583	106.12	34,773	29,226
105.59	17,046	14,752	106.13	34,810	29,574
105.60	17,397	14,924	106.14	34,846	29,922
105.61	17,751	15,100	106.15	34,883	30,271
105.62	18,108	15,279	106.16	34,920	30,620
105.63	18,469	15,462	106.17	34,957	30,970
105.64	18,834	15,648	106.18	34,994	31,319
105.65	19,202	15,839	106.19	35,031	31,669
105.66	19,574	16,033	106.20	35,067	32,020
105.67	19,949	16,230	106.21	35,104	32,371
105.68	20,328	16,432	106.22	35,141	32,722
105.69	20,710	16,637	106.23	35,178	33,074
105.70	21,096	16,846	106.24	35,215	33,426
105.71	21,486	17,059	106.25	35,252	33,778
105.72	21,879	17,275	106.26	35,289	34,131
105.73	22,276	17,496	106.27	35,326	34,484
105.74	22,676	17,721	106.28	35,363	34,837
105.75	23,080	17,950	106.29	35,400	35,191
105.76	23,487	18,183	106.30	35,438	35,545
105.77	23,898	18,420	106.31	35,475	35,900
105.78	24,312	18,661	106.32	35,512	36,255
105.79	24,731	18,906	106.33	35,549	36,610
105.80	25,152	19,155	106.34	35,586	36,966
105.81	25,577	19,409	106.35	35,623	37,322
105.82	26,006	19,667	106.36	35,661	37,678
105.83	26,438	19,929	106.37	35,698	38,035
105.84	26,874	20,196	106.38	35,735	38,392
105.85	27,314	20,466	106.39	35,772	38,750
105.86	27,757	20,742	106.40	35,810	39,107
105.87	28,203	21,022	106.41	35,847	39,466
105.88	28,653	21,306	106.42	35,884	39,824
105.89	29,107	21,595	106.43	35,922	40,183
105.90	29,564	21,888	106.44	35,959	40,543
105.91	30,025	22,186	106.45	35,996	40,903
105.92	30,490	22,489	106.46	36,034	41,263
105.93	30,958	22,796	106.47	36,071	41,623
105.94	31,429	23,108	106.48	36,109	41,984
105.95	31,904	23,424	106.49	36,146	42,345
105.96	32,383	23,746	106.50	36,184	42,707
105.97	32,865	24,072	106.51	36,221	43,069
105.98	33,351	24,403	106.52	36,259	43,432
105.99	33,840	24,739	106.53	36,296	43,794
106.00	34,333	25,080	106.54	36,334	44,157
106.01	34,370	25,423	106.55	36,371	44,521
106.02	34,406	25,767	106.56	36,409	44,885
106.03	34,443	26,112	106.57	36,447	45,249
106.04	34,479	26,456	106.58	36,484	45,614
106.05	34,516	26,801	106.59	36,522	45,979
106.06	34,553	27,147	106.60	36,560	46,344
106.07	34,589	27,492	106.61	36,597	46,710
106.08	34,626	27,838	106.62	36,635	47,076
106.09	34,663	28,185	106.63	36,673	47,443
106.10	34,699	28,532	106.64	36,711	47,810

B – 2

POLLUTANT REMOVAL

CIVILWORKS NEW ENGLAND
181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443

Objective: In accordance with Chapter 153-14.A.3.b.1 runoff from impervious surfaces shall be treated to provide 80% removal of total suspended solids (TSS) and 50% removal of both total nitrogen and phosphorus using appropriate treatment measures as specified in the NH Stormwater Manual, Volumes 1 and 2, February 2025, as amended.

Narrative: The Proposed Development Site Plan is for a Light Industrial Facility located on Tax Map G, Lot 2, Littleworth Road, a 5.11-acre parcel within the Commercial Manufacturing (CM) District. The lot is currently undeveloped. The ground cover primarily consists of woods, grass, and pavement. The proposed site design includes the construction of a proposed 26,880 square foot light industrial building and general site improvements associated with the construction. The development includes 1.500 acres of new impervious area which will all be directed towards one Bio-retention with ISR which will be constructed on site. The project proposes the treatment of all impervious surfaces and will provide the required pollutant removal per City of Dover standards.

Pollutant Loads: Pollutant loads were calculated in accordance with Appendix F Attachment 3 of the 2017 NH MS4 Permit.

Annual Load (L): Utilizing the sites total impervious area of 1.500 ac of industrial land use and the Event Mean Concentrations identified in Appendix F of the NH MS4 General Permit industrial directly connected impervious area (15 lbs/ac/yr TN, and 1.78 lbs/ac/yr TP) provides the following pollutant loads for the impervious development of the parcel.

Impervious Area:

L_{TN} = 15 lbs/ac/yr * 1.500 ac = 22.507 lb/yr

L_{TP} = 1,78 lbs/ac/yr * 1.500 ac = 2.671 lb/yr

Pollutant Removal Required: In accordance with City of Dover's Site Plan regulations, at a minimum, the following pollutant removal is required.

Pollutant Removal Required			
Pollutant	**Industrial Impervious Annual Load (lbs/yr)**	**% Removal**	**Removal Required (lbs/yr)**
TN	**22.507**	**50%**	**11.25**
TP	**2.671**	**50%**	**1.34**

Pollutant Removal Provided: The project proposes the treatment of 1.500 ac of industrial impervious area all through one Bio-retention with ISR. BMP Pollutant Removal Efficiency rates are provided in Appendix F Attachment 3 of the 2017 NH MS4 Permit and NH Stormwater Manual, Volumes 1 and 2, February 2025. Bio-retention with ISR (filtering) with a capacity for 1.0-inch runoff from impervious area provides greater than or equal to 90% TSS, 75% TN, and 76% TP removal.

Bio-Retention with ISR (BR1):
BR1 captures and treats the entirety of the site's impervious area (1.500 ac) directed through multiple catch basins and roof drains.

Bio-Retention With ISR			
Pollutant	**Industrial Impervious Annual Load (lbs/yr)**	**% Removal**	**Removal Provided (lbs/yr)**
TN	**22.51**	**75%**	**16.88**
TP	**2.67**	**76%**	**2.03**

Total Pollutant Removal Rate Provided:

Pollutant Removal Provided			
Pollutant	**Bio-Retention with ISR**	**Removal Provided (lbs/yr)**	**Effective Removal Rate %**
TN	**16.88**	**16.88**	**75%**
TP	**2.03**	**2.03**	**76%**

Conclusion: The proposed mitigation measures implemented on site meet the minimum treatment rates for TSS, TN, and TP required by the City's regulations. TSS loading and treatment calculations were not shown here but the effective treatment percentage of TSS using Bio-retention with ISR (filtering) is greater than 90% according to the NH Stormwater manual, Volumes 1 and 2, February 2025 which exceeds City of Dover standard requirement of 80%. All the site impervious areas will be directed to Bio-retention with ISR thus meeting stormwater pollutant treatment requirements.

B – 3

OUTLET PROTECTION

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 18043B
Date: 7/1/2025
Structure: Outlet from CB7

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (ft)
Tw= Tailwater depth above the invert of the pipe (ft)
La= Apron length
w_1= Apron width at pipe outlet
w_2= Apron width at downstream end of apron

Input:

Outlet elev:	105.7
Tailwater elev:	106
Tw:	0.3
Q:	7.27
D_0:	1.25

Apron Dimensions

w_1=	**4**	(ft)
w_2=	**22**	(ft)
La=	**19**	(ft)

Apron Length:

Tw > .5D_0	Tw < .5D_0
La: 24.356	La: 18.114

Apron Width:

Tw > .5D_0	Tw < .5D_0
w_2: 13.49	w_2: 21.86

w_1: 3.75

w_1=	3.75
w_2=	21.8635794
La=	18.1135794

RipRap Sizing

d_{50}=	0.75	(ft)
d_{50}=	9.01	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
1.13	TO	1.50	100
0.98	TO	1.35	85
0.75	TO	1.13	50
0.23	TO	0.38	15

Minimum Depth of Rock= 2.25 (ft)

Summary for Pond CB7: CB7

Inflow Area = 1.598 ac, 69.32% Impervious, Inflow Depth = 6.99" for 50-yr event
Inflow = 7.27 cfs @ 12.00 hrs, Volume= 0.931 af
Outflow = 7.27 cfs @ 12.00 hrs, Volume= 0.931 af, Atten= 0%, Lag= 0.0 min
Primary = 7.27 cfs @ 12.00 hrs, Volume= 0.931 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 108.54' @ 12.00 hrs
Flood Elev= 109.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.40'	**15.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 106.40' / 105.70' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.25 cfs @ 12.00 hrs HW=108.53' TW=106.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.25 cfs @ 5.91 fps)

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 18043B
Date: 7/1/2025
Structure: Outlet from DMH5

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (ft)
Tw= Tailwater depth above the invert of the pipe (ft)
La= Apron length
w_1= Apron width at pipe outlet
w_2= Apron width at downstream end of apron

Input:

Outlet elev:	105.75
Tailwater elev:	106.02
Tw:	0.27
Q:	2.74
D_0:	1

Apron Dimensions

w_1=	**3**	(ft)
w_2=	**15**	(ft)
La=	**12**	(ft)

Apron Length:

$Tw > .5D_0$	$Tw < .5D_0$
La: 15.220	La: 11.932

Apron Width:

$Tw > .5D_0$	$Tw < .5D_0$
w_2: 9.09	w_2: 14.93

w_1: 3

w_1=	3.00
w_2=	14.932
La=	11.932

RipRap Sizing

d_{50}=	0.28	(ft)
d_{50}=	3.41	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.43	TO	0.57	100
0.37	TO	0.51	85
0.28	TO	0.43	50
0.09	TO	0.14	15

Minimum Depth of Rock= 0.85 (ft)

Summary for Pond DMH5: DMH5

Inflow Area = 0.551 ac, 89.73% Impervious, Inflow Depth = 7.61" for 50-yr event
Inflow = 2.74 cfs @ 12.02 hrs, Volume= 0.349 af
Outflow = 2.74 cfs @ 12.02 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min
Primary = 2.74 cfs @ 12.02 hrs, Volume= 0.349 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 107.04' @ 12.02 hrs
Flood Elev= 109.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.85'	**12.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 105.85' / 105.75' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.73 cfs @ 12.02 hrs HW=107.04' TW=106.02' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.73 cfs @ 3.69 fps)

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 18043B
Date: 7/1/2025
Structure: Outlet from BR1

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (ft)
Tw= Tailwater depth above the invert of the pipe (ft)
La= Apron length
w_1= Apron width at pipe outlet
w_2= Apron width at downstream end of apron

Input:

Outlet elev:	103
Tailwater elev:	103.12
Tw:	0.12
Q:	0.26
D_0:	1.5

Apron Dimensions

w_1=	**5**	(ft)
w_2=	**16**	(ft)
La=	**11**	(ft)

Apron Length:

Tw > .5D_0	Tw < .5D_0
La: 10.925	La: 10.755

Apron Width:

Tw > .5D_0	Tw < .5D_0
w_2: 8.87	w_2: 15.25

w_1: 4.5

w_1=	4.50
w_2=	15.2547469
La=	10.7547469

RipRap Sizing

d_{50}=	0.02	(ft)
d_{50}=	0.22	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.03	TO	0.04	100
0.02	TO	0.03	85
0.02	TO	0.03	50
0.01	TO	0.01	15

Minimum Depth of Rock= 0.06 (ft)

Summary for Pond OSBR1: OS BioRetention 1

Inflow Area = 3.215 ac, 49.81% Impervious, Inflow Depth > 6.63" for 50-yr event
Inflow = 0.96 cfs @ 15.37 hrs, Volume= 1.776 af
Outflow = 0.96 cfs @ 15.36 hrs, Volume= 1.776 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 19.67 hrs, Volume= 1.582 af
Secondary = 0.26 cfs @ 12.03 hrs, Volume= 0.194 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 103.72' @ 12.03 hrs
Flood Elev= 107.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.50'	**6.0" Round Culvert** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 102.50' / 102.10' S= 0.0089 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	103.50'	**18.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.50' / 103.00' S= 0.0313 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.76 cfs @ 19.67 hrs HW=103.68' TW=102.62' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.76 cfs @ 3.87 fps)

Secondary OutFlow Max=0.26 cfs @ 12.03 hrs HW=103.72' TW=103.12' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 0.26 cfs @ 1.60 fps)

APPENDIX C

INSPECTION AND MAINTENANCE

C – 1

STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN

Stormwater Management System Inspection & Maintenance Plan

LIGHT INDUSTRIAL FACILITY

Tax Map G, Lot 2
Littleworth Road
Dover, New Hampshire
Strafford County

MAY 2025

Prepared for:

SUMMIT LAND DEVELOPMENT, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

Owner of Record:

WESTFIELD, LLC
340 Central Avenue, Suite 202
Dover, New Hampshire 03820

Prepared By:

CIVILWORKS NEW ENGLAND
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks New England has prepared the following Stormwater Management System Inspection & Maintenance Plan for **Westfield, LLC.** The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The inspection and maintenance requirements outlined in this document are required to be performed in perpetuity. In the event the property is sold, future owners will be responsible for implementing the responsibilities outlined in this document.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will also help to minimize potential environmental impacts to the areas surrounding the developed site. By following the enclosed procedures, the property owners, and maintenance personnel will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

This plan also requires the Owner/Operator to prepare and implement a salt minimization plan to reduce salt usage on-site and ultimately within the watershed. This plan will allow the owner/operator to monitor and modify how much salt is needed, when it should be applied, where it needs to be applied, with the ultimate goal of reducing salt-use without compromising safety. It is expected that salt-use reduction will lead to long-term cost-savings as a result of purchasing less salt and reduced impacts on vegetation (e.g., landscaping) and corrosion of infrastructure.

The salt minimization plan should include the retention of a contractor who has completed the Green SnowPro Training course and obtained NHDES Salt Application Certification.

It is anticipated that this be a living document that will be updated at regular intervals (recommend updating annually in advance of the winter season in order to facilitate adjustments).

Owner:

Westfield, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party; transfer shall be documented to NH DES in writing.

Contact / Responsible Party:

Summit Land Development, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

Chad Kageleiry
Phone: (603) 749 2800
Email: chad@summitlanddev.com

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NHDES in writing.

Management Company:

Westfield, LLC
340 Central Avenue, Suite 202
Dover, NH 03820

The contact information for the Management Party shall be kept current.

Inspection Schedule / Record Retention

Inspection frequency should, at a minimum, be in accordance with the New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NHDES. See the Inspection and Maintenance Plan for frequency requirements. Inspections shall include a photograph of each practice that is subject to the I&M requirements each time it is inspected. A copy of the completed Stormwater Management System's Inspection & Maintenance Log, inspection photographs, and Deicing Salt Quantity Use Log shall be maintained, kept on-site, and be made available to local, state, or federal regulators as applicable by law. All Inspection and Maintenance records must be provided to NHDES upon request and to the City of Dover Community Services Department annually before Dec 15th.

Stormwater Management System Components

The Stormwater Management System associated with the project is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Energy Dissipation Structures (Rip Rap)
- Bioretention Basin w/ Internal Storage Reservoir (ISR)
- Drain Manholes
- Pre-Treatment Structures
  - Pre-Treatment Swale
  - Deep Sump Catch Basins
  - Rain Guardian (Ferguson Waterworks)
- Pavement
- Litter / Trash Removal

Design elements are identified in the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

During maintenance activities, check for the presence of invasive plants and remove in a safe manner. Invasive plants shall be controlled to prevent them from reproducing, spreading, or re-growing. See the University of New Hampshire – Cooperative Extension's "Method for Disposing Non-Native Invasive Plants", included at the end of this manual, for guidance on the removal and disposal of invasive species.

Inspection and Maintenance Plan

By implementing the following procedures, the owners will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff.

PIPES/CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

OUTLET STRUCTURE(S):

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

ENERGY DISSIPATION STRUCTURES (RIP RAP):

- Inspect at least once a year.
- Inspect for sediment accumulation.
- Remove all debris immediately.
- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas, they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.

BIORETENTION BASIN W/ ISR:

- Inspection, by a **qualified professional**, of the Bioretention Basin at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection. If the Bioretention Basin systems do not drain within 72-hours following a rainfall event, a **qualified professional** should assess the condition and determine measures required to restore filtration practice (as applicable).
- Inlet and outlet pipes, inlet and outlet structures, containment structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Vegetation should be inspected at least annually and maintained in healthy condition, including pruning, removal and replacement of dead or diseased vegetation, and removal of invasive species.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed at least once annually. The vegetation should be maintained in a healthy condition, as appropriate to the function of the facility and type of vegetation, to prevent the establishment of woody vegetation.
- Pretreatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually.

- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

DRAIN MANHOLES:

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6".
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

PRE-TREATMENT STRUCTURES:

PRE-TREATMENT SWALE:

- Inspect once per year.
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4" stand of vegetative growth.

DEEP SUMP CATCHBASINS:

- Inspect twice per year (recommended in the spring and fall).
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately.
- Sediment should be removed when it approaches half the sump depth. If no sump, remove sediment accumulation ≥ 6".
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

RAIN GUARDIAN (FERGUSON WATERWORKS):

- Common maintenance needs include periodic removal of accumulated leaves (and other organic debris) and garbage from the internal grate and sediment and fine debris from the concrete and metal dry filter box. Contributing watersheds with high sediment concentrations may require up to monthly or twice monthly visits to satisfy maintenance needs.
- If sediment accumulates beyond an acceptable level in the system, it will be necessary to remove. This can be done by manual removal with a shovel or vacuum device. The filter screen can be cleaned manually through brushing or with pressurized water.

PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Clean periodically (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS:

- To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends that the Owner/Operator develop a Road Salt and Deicing Minimization Plan for the parking lots and roadways. The plan should develop the policies that the development will keep in place to minimize salt and other deicer use after the project has been completed. The plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. (See Deicing Salt Quantity Use Log).
- Use sand as primary agent for driveway and access way safety during ice and snow conditions.
- Minimize the use of salt during the winter.
- Use de-icing or anti-caking agents, added to enhance performance and application characteristics of sand mixtures, only as necessary and at minimum application rates.
- Recommend using a certified Winter Operator (Green SnowPro Trained) for applying de-icing agents.
- Monitor weather and apply de-icing agents based on weather conditions and temperatures.

ANTI-ICING AND SALT MINIMIZATION:

- Owner to develop a Road Salt and Deicing Minimization Plan.
- Provide a written policy that the “Development” will keep in place to minimize salt and other deicer use after the project has been completed.
- Use the attached form to track the use of salt and other deicers for each storm event and compiling salt use data annually.

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structure(s)	Annually	• Inspect once per year. • Inspect for clogging and sediment accumulation. • Remove all debris immediately and sediment accumulations ≥ 2 inches.	≥ 2 in. sediment Remove immediately
Energy Dissipation (ED) Structures (Rip Rap)	Annually	• Check for erosion • Check for displaced stones • Check for woody vegetation • Check for sediment accumulation	≥ 3 in. sediment Remove annually Replace/ reset Dislodged stones immediately
Bioretention Basin w/ ISR • Inlet/Outlet Piping • Pond • Sediment • Drawdown • Trash/Debris • Vegetation (Veg.) • Embankments	Bi-Annually “ “ Annually Periodically “ “ “ “	• Check for erosion, settlement, seepage, etc. • Check for sediment accum. in pond • Check drainage time • Check for and remove trash/debris • Maintain >75% veg. (pond & slopes) Maintain healthy stand of veg.	Repair immediately ≥ 2 in sediment >72 hours Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Drain Manholes	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 6” sediment depth or ½ sump depth Remove all floatables Remove immediately
Pre-Treatment Structure: Pre-Treatment Swale	Annually	• Check for sediment accumulation • Check for erosion • Ensure Swale is stabilized • Maintain healthy stand of veg., 4” minimum • Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind Mow twice per year Remove/Dispose of accordingly
Pre-Treatment Structure: Deep Sump Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 6” sediment depth or ½ sump depth Remove all floatables Remove immediately
Pre-Treatment Structure: Rain Guardian	Periodically	• Check for trash, debris, and accumulated sediments in grate • Check sediment level	Remove debris and veg. periodically ≥ 3 in. sediment depth shovel sediment
Pavement: • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As required 1 - 2 x’s Year Periodically	• Minimize use to prevent tracking issues • RECORD APPLICATION RATES • Sweep or vacuum to prevent tracking issues • Check for trash/debris	Sweep to prevent issues Minimize (as required) Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	• Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

The following pages contain a blank copy of the Stormwater Management System's Inspection & Maintenance Log and a Deicing Salt Quantity Use Log. These forms are provided to assist the owners with the inspection and maintenance of the aforementioned Stormwater Management System.

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance_____ Inspector:_____

System Component / BMP	Cleaning / Repair Needed (List Items / Comments)	Date of Cleaning/Repair	Performed By

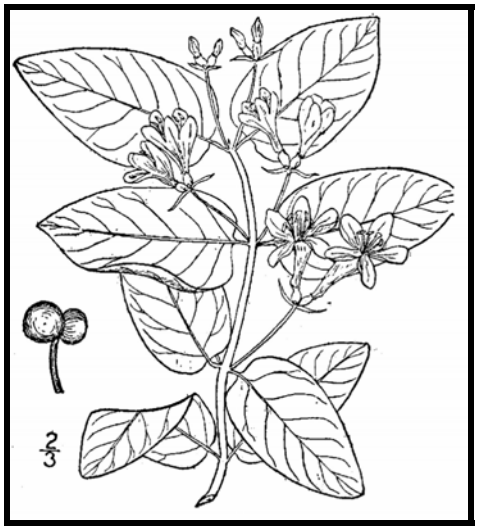
Deicing Salt Quantity Use Log

Date	Amount of Material Applied	Comments

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

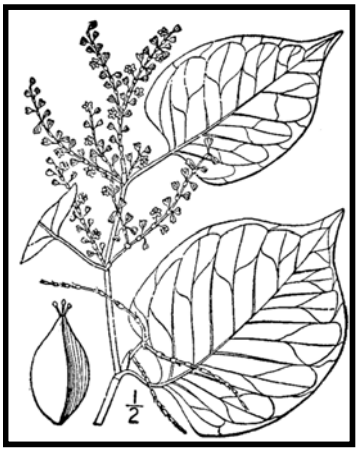
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds
 </td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

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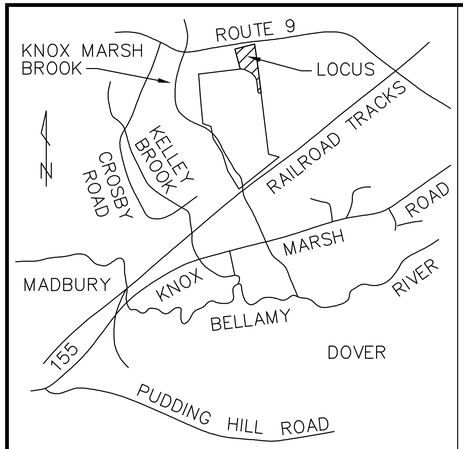

LOCATION PLAN
(NO SCALE)

LIGHT INDUSTRIAL FACILITY

TAX MAP G, LOT No. 2

LITTLEWORTH ROAD
DOVER, NH

MAY 29, 2025
REVISED: JULY 1, 2025

APPLICANT
SUMMIT LAND DEVELOPMENT, LLC
340 CENTRAL AVE, SUITE 202
DOVER, NH 03820

APPLICANT SIGNATURE

OWNER
WESTFIELD, LLC
340 CENTRAL AVE, SUITE 202
DOVER, NH 03820

OWNER SIGNATURE

SITE CIVIL ENGINEER
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LAND SURVEYOR
MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 1166
181 WATSON ROAD
DOVER, NH 03821
(603) 742-0911

WETLAND/SOIL SCIENTIST
BRUCE A. GILDAY, CWS
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
(603) 228-5775

ARCHITECT
JOHN M. TUTTLE, AIA
TW DESIGN LLC
254 DRAKE HILL ROAD
STRAFFORD, NH 03884
(603) 664-2181

LANDSCAPE ARCHITECT
TERRAIN PLANNING & DESIGN, LLC
311 KAST HILL ROAD
HOPKINTON, NH 03229
(603) 491-2322

PERMIT SUMMARY/ WAIVER SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:

   NHDES ALTERATION OF TERRAIN: PENDING

   NH DOT DRIVEWAY PERMIT: PENDING

2. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.

   SITE PLAN: PENDING

   CONDITIONAL USE PERMIT: PENDING

3. WAIVERS REQUESTED: THE PLANNING BOARD HAS FOUND THE CRITERIA OF CHAPTER 153-21 HAVE BEEN MET AND HAVE APPROVED THE FOLLOWING WAIVER(S):

   A WAIVER REQUEST FROM THE SITE REVIEW REGULATIONS SECTION 153-14.K (1)(a), TO ALLOW FOR MORE THAN 50% OF THE PARKING SPACES TO BE LOCATED IN FRONT OF THE BUILDING – PENDING

   A WAIVER REQUEST FROM THE SITE REVIEW REGULATIONS SECTION 153-14.G.(1)(f), TO ALLOW A REDUCTION IN NUMBER OF TREES REQUIRED ADJACENT TO ROADWAYS. – PENDING.

WILDLIFE PROTECTION NOTES:

- ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB-PENDING
- PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
- IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
- THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

NOTE:
LANDSCAPING BOND OR OTHER FORM OF SECURITY ACCEPTABLE TO THE CITY FOR A PERIOD OF 3 YEARS AFTER CERTIFICATION OF OCCUPANCY IS ISSUED TO ENSURE LANDSCAPING IS MAINTAINED OR REPLACED IF NEEDED.

SHEET INDEX

	SHEET
COVER SHEET	1
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	2
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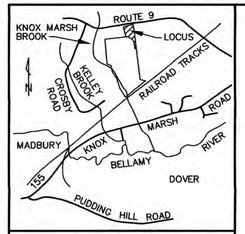
PLAN BY OTHERS:
ARCHITECTURAL PLANS
LANDSCAPE PLANS

PLANNING FILE NO.: SITE-2025-0007



LOCATION PLAN
(NO SCALE)

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	7°42'59"	175.00'	23.57'	23.55'	S64°02'55"W
C2	103°53'24"	30.00'	54.40'	47.25'	N60°08'54"W
C3	58°08'00"	250.00'	253.66'	242.91'	N37°16'12"W
C4	31°52'00"	158.14'	87.95'	86.82'	N82°16'12"W

NH STATE PLANE NAD 83 - GPS OBS.

LEGEND

R.O.W. – RIGHT OF WAY
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o- UP – UTILITY POLE
CB – CATCH BASIN
SMH – SEWER MANHOLE
G PP – GAS – PLASTIC PIPE
HDPE – HIGH DENSITY POLYETHYLENE
CMP – CORRUGATED METAL PIPE
RCP – REINFORCED CONCRETE PIPE
PVC – POLYVINYL CHLORIDE
-106- – CONTOUR LINE (2 FOOT INTERVAL)
cvd – COVERED BY SURFACE MATERIAL

WATERLINE EASEMENT S.C.R.D. 546/347

UP ø 3425/55

EVERSOURCE EASEMENT {100' WIDE – S.C.R.D. 686/130}

C / 2-3
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471

DRAINAGE DITCH (TYP.)

SITE SPECIFIC SOIL BOUNDARY (TYP.)

EDGE OF WETLAND (TYP.)

SEWER STRUCTURES PSMH-2, 1, EXIST.

WESTFIELD ROAD
50' WIDE R.O.W.

SMH 'PSMH-5'

N65°20'12"W 116.20'

C / 2
PARCEL AEA
222,795 S.F.
5.11 Ac.

24" HDPE CULVERT
INV. IN = 102.15'
INV. OUT = 101.66'

233B/P

SMH 'PSMH-3'

203.15'
N08°12'12"W

SMH 'PSMH-4'

32B

953B

C1 C2 C3 C4

48" HDPE CULVERT
INV. IN = 101.72'
INV. OUT = 101.34'

50' WIDE EASEMENT S.C.R.D. 5064/604

C/3A-100
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820
4713 / 625

24" HDPE CULVERT
INV. IN = 102.9'
INV. OUT = 102.6'

S08°12'12"E 522.59'

30' WIDE DRAINAGE EASEMENT S.C.R.D. 5106/313

C / 2-2
BLUEBIRD DOVER LLC
125 OCEAN ROAD
GREENLAND, NH 03840
5059 / 706

N16°23'24"W 416.75'

30' WIDE UTILITY EASEMENT S.C.R.D. 5106/313

PROPOSED 60' WIDE UTILITY EASEMENT

SMH 'PSMH-A'
SMH 'PSMH-B'
SMH 'PSMH-C'

UP 3425/56 UGU

20' WIDE EVERSOURCE EASEMENT S.C.R.D. 797/93

15" HDPE CULVERT
INV. IN = 108.8'
INV. OUT = 108.8'

30" HDPE CULVERT
INV. IN = 116.32' F.E.S.
INV. OUT = 115.33'

SITE SPECIFIC SOIL DELINEATION (TYP.)

232B

20' WIDE WATERLINE EASEMENT S.C.R.D. 5106/313

62B

S09°56'54"E 461.57'

VARIABLE WIDTH R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9

N74°55'12"E 408.04'

F / 26
EVERSOURCE ENERGY
PUBLIC SERVICE COMPANY OF NH
P.O. Box 330
MANCHESTER, NH 03105
683 / 475

F / 26-A
LISA A. NUGENT
69 LITTLEWORTH ROAD
DOVER, NH 03820
1866 / 298

F / 27
DAVID L. RAVELING
16 FORD DRIVE
BARRINGTON, NH 03825
2809 / 475

"LOT 4C"
N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

C / 41
BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328
2710 / 956

SANITARY SEWER STRUCTURE SCHEDULE

SMH 'PSMH-C'		SMH 'PSMH-4'	
RIM	= 116.0' cvd	RIM	= 106.15'
INV. IN 10"	= 109.80' STUB	INV. IN 10"	= 97.54'
INV. OUT 10"	= 109.81'	INV. OUT 10"	= 97.45'
SHELF	= 110.54'	SHELF	= 98.26'
NEXT	= PSMH-B	NEXT	= PSMH-3
SMH 'PSMH-B'		SMH 'PSMH-3'	
RIM	= 113.59'	RIM	= 105.25'
INV. IN 10"	= 104.74'	INV. IN 10"	= 96.71'
INV. OUT 10"	= 104.62'	INV. OUT 10"	= 96.61'
SHELF	= 105.60'	SHELF	= 97.48'
NEXT	= PSMH-A	NEXT	= PSMH-2
SMH 'PSMH-A'		SMH 'PSMH-2'	
RIM	= 106.5' cvd	RIM	= 107.1'
INV. IN 10"	= 103.11'	INV. IN 10"	= 95.38'
INV. OUT 10"	= 103.10'	INV. OUT 10"	= 95.31'
SHELF	= 103.87'	SHELF	= 96.17'
NEXT	= PSMH-6	NEXT	= PSMH-1
SMH 'PSMH-6'		SMH 'PSMH-1'	
RIM	= 108.9' cvd	RIM	= 102.4' no rim
INV. IN 10"	= 101.10' VENT	INV. IN 10"	= 94.40
INV. IN 10"	= 99.10' DROP	NV. IN 10"	= 94.36'
INV. IN 10"	= 99.03' PSMH-7	INV. OUT 10"	= 94.27'
INV. OUT 10"	= 98.97'	SHELF	= 95.06'
SHELF	= 100.03'	NEXT	= EXIST
NEXT	= PSMH-5	SMH 'EXIST'	
SMH 'PSMH-5'		RIM	= 102.1'
RIM	= 108.68'	INV. IN 10"	= 93.10'
INV. IN 10"	= 98.11'	NV. IN 10"	= 93.02'
INV. OUT 10"	= 98.08'	INV. OUT 10"	= 92.56'
SHELF	= 99.00'	SHELF	= 93.17'
NEXT	= PSMH 4	NEXT	= OFFSITE

NOTES:

1.) OWNERS OF RECORD:

WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4733, PAGE 471

2.) C / 2 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PLAN INTENT: TO DEPICT THE PARCEL EXISTING CONDITIONS.

4.) PARCEL AREA = 222,795 S.F. / 5.11 Ac.

5.) ZONING DISTRICT: COMMERCIAL MANUFACTURING (CM) DISTRICT:

MINIMUM LOT SIZE	= 20,000 S.F.
LOT COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 100 FEET
FRONT SETBACK	= 35 FEET
SIDE SETBACK	= 10 FEET MIN.
REAR SETBACK	= 10 FEET MIN.
BUILDING HEIGHT	= 50 FEET MAX.

6.) THE SUBJECT PARCEL IS LOCATED OUTSIDE OF THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JANUARY 22, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING JANUARY 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000

9.) THE PARCEL IS SUBJECT TO RIGHTS OF DOVER TO MAINTAIN A WATER LINE AS DESCRIBED IN S.C.R.D. VOLUME 546, PAGE 347.

10.) THE PARCEL IS SUBJECT TO A 100' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MARCH 12, 1958 AND DESCRIBED IN S.C.R.D. VOLUME 686, PAGE 130.

REFERENCE PLANS:

1.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2, NH ROUTE 9 – LITTLEWORTH ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 200'/100'; DATED: MARCH 15, 2022, REVISED THROUGH 8/5/24; BY THIS OFFICE. RECORDED S.C.R.D. PLANS 13297, 13298, 13299.

2.) SEWER EXTENSION TO LITTLEWORTH ROAD FOR WESTFIELD, LLC. TAX MAP G, LOT No. 2, NH ROUTE 9 – LITTLEWORTH ROAD, DOVER, NH. DATED: OCTOBER 23, 2023; BY: CIVILWORKS NEWENGLAND.

NOTES CONTINUED:

11.) THE PARCEL IS SUBJECT TO A 20' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MAY 27, 1965 AND DESCRIBED IN S.C.R.D. VOLUME 797, PAGE 93.

12.) THE PARCEL BENEFITS FROM A FIFTY (50) FOOT WIDE ACCESS AND UTILITY EASEMENT OVER LOT G/3A-100 AS DESCRIBED IN S.C.R.D. VOLUME 5064, PAGE 604..

13.) THE PARCEL IS SUBJECT TO FOUR (4) EASEMENTS GRANTED TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. VOLUME 5106, PAGE 313.

14.) SITE SPECIFIC SOIL MAPPING WAS PERFORMED BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CSS 012); 43 ROCKINGHAM STREET, CONCORD, NH 03301. SEE REPORT DATED DECEMBER, 2024.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
32B	BOXFORD	B	MODERATELY WELL DRAINED
62B	CHARLTON	B	WELL DRAINED
232B	BUXTON	C	MODERATELY WELL DRAINED
953B	BOXFORD	C	SOMEWHAT POORLY DRAINED
233B/P	SCANTIC	D	POORLY DRAINED (P)

SLOPE

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8 PERCENT
C	8 TO 15 PERCENT

WETLAND CERTIFICATION STATEMENT
The wetland boundaries on this plan were identified and delineated during the growing season (May /June /July 2024) by Bruce A. Gilday, CWS – BAG Land Consultants, Concord, NH. This onsite wetland determination utilized Chapter 5; Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region.

STATE OF NEW HAMPSHIRE BRUCE A. GILDAY No. 088 CERTIFIED WETLAND SCIENTIST

Bruce A. Gilday 5/25/25
Bruce A. Gilday Date

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

"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." (RSA 676:18)

6/27/25
DATE: / KEVIN M. McENEANEY LLS # 661

NO.	DATE	DESCRIPTION	BY	CHK
2	6/27/25	ADD 30" HDPE CULVERT	RJM	KMM
1	5/28/25	UPDATE PLAN PER REVIEW	RJM	KMM

CNE 18043A REVISIONS

24–2210	EXIST. COND.	23–10	16+
PROJECT NO	TYPE	FIELDBOOK & PAGES	

EXISTING CONDITIONS PLAN
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.

DRAWN BY: RJM	FILE: 2210\DWG\2210 G-2EC2024
SCALE: 1" = 40'	DATE: DECEMBER 4, 2024

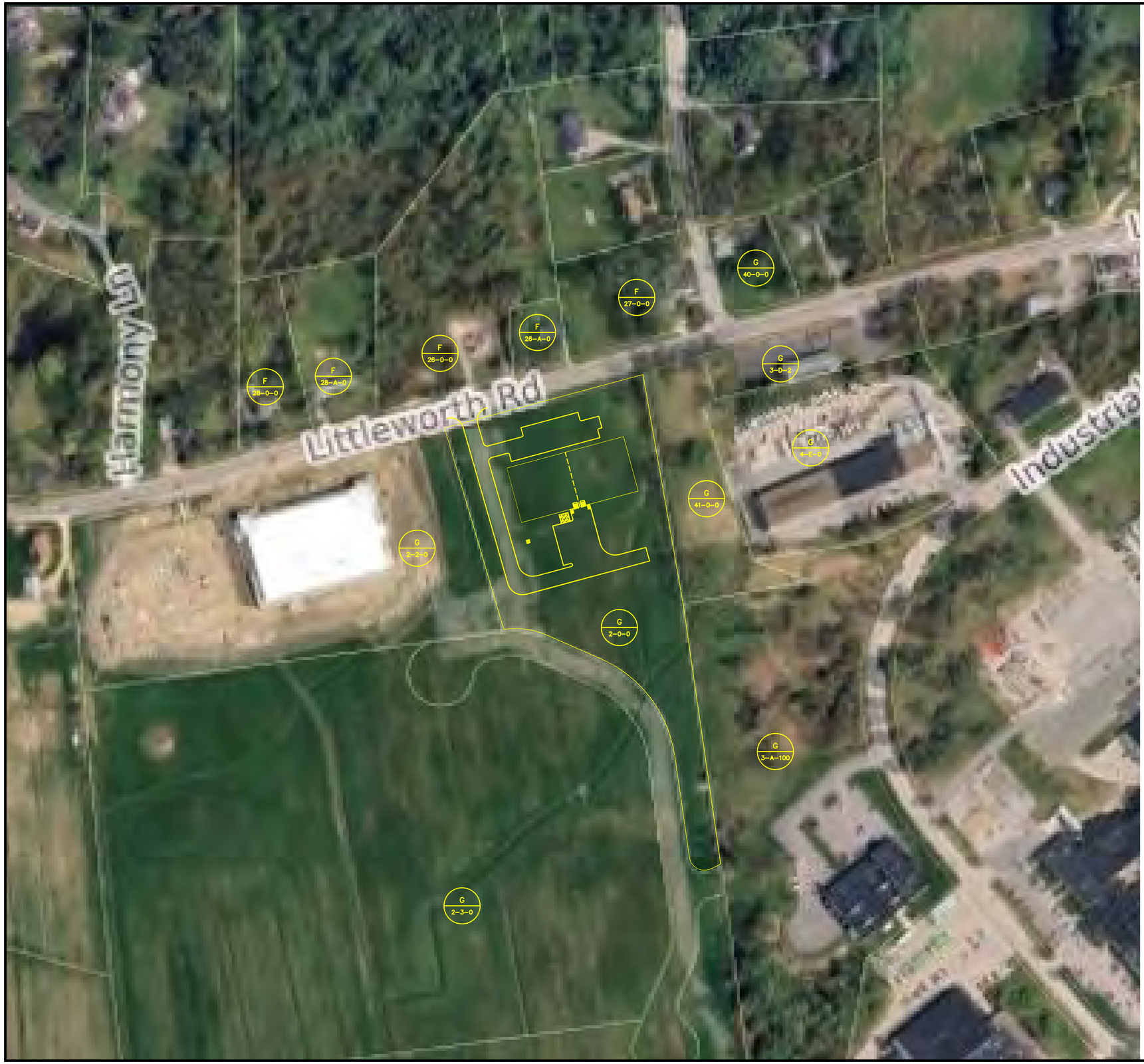
40 20 0 20 40 80 120 160

LICENSED LAND SURVEYOR STATE OF NEW HAMPSHIRE No. 661 KEVIN M. McENEANEY SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 1166 – 181 WATSON ROAD
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

6/27/2025 15:53:36 File: M:\2210\Drawings\2210 G-2 EC 2024.dwg Layout: G-2 EXIST SAc



ABUTTERS LIST
(WITHIN 200 FT)

	TAX MAP	LOT NO.	NAME & ADDRESS
G 2-0-0	G	2-0-0	WESTFIELD LLC 340 CENTRAL AVENUE SUITE 202 DOVER, NH 03820
G 2-2-0	G	2-2-0	BLUEBIRD DOVER LLC 125 OCEAN ROAD GREENLAND, NH 03840
G 2-3-0	G	2-3-0	WESTFIELD, LLC 340 CENTRAL AVENUE SUITE 202 DOVER, NH 03820
G 3-A-100	G	3-A-100	RECON REALTY LLC. 80 INDUSTRIAL PARK DRIVE DOVER, NH 03820
G 40-0-0	G	40-0-0	DAREL CLINTON TATE 61 LITTLEWORTH ROAD DOVER, NH 03820
G 41-0-0	G	41-0-0	BT-NEWYP LLC ATTN: CORP REAL ESTATE DEPT TAX MRG 55 GLENLAKE PARKWAY NE ATLANTA GA 30328
G 4-E-0	G	4-E-0	WILLMANCH CORP C/O BT-NEWYO LLC CORP REAL ESTATE 55 GLENLAKE PARKWAY NE ATLANTA GA 30328
G 3-D-2	G	3-D-2	IWORX REAL ESTATE LLC 62 LITTLEWORTH ROAD DOVER, NH 03820
F 27-0-0	F	27-0-0	RAVELING DAVID L 16 FORD DRIVE DOVER, NH 03820
F 26-A-0	F	26-A-0	NUGENT LISA A. 69 LITTLEWORTH ROAD DOVER, NH 03820
F 26-0-0	F	26-0-0	PUBLIC SERV CO OF NH P.O. BOX 330 MANCHESTER, NH 03105-0330
F 28-0-0	F	28-0-0	BOVEE FAMILY REVOCABLE TRUST OF 2014 DAVID G. & CAROL A. BOVEE, TRUSTEES 75 LITTLEWORTH ROAD DOVER, NH 03820
F 28-A-0	F	28-A-0	SHOCKLEY LUANNE K & HARVEY DAVID MICHAEL 73 LITTLEWORTH ROAD DOVER, NH 03820

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

PLANNING FILE NO.: SITE-2025-0007

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: 1"=80'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY: SJH
PROJECT NO: 1843
FILE: SITE

NEIGHBORHOOD PLAN

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

3

DOVER NOTES:

1. THE OWNER OF RECORD:
   WESTFIELD, LLC
   340 CENTRAL AVENUE, SUITE 202
   DOVER, NEW HAMPSHIRE 03820
   S.C.R.D. VOL. 4733, PAGE 471
2. G / 2 – DENOTES TAX MAP AND PARCEL NUMBER.
3. PLAN INTENT: TO DEPICT A PROPOSED 26,880 S.F. LIGHT INDUSTRIAL BUILDING WITH ASSOCIATED PARKING, GRADING, DRAINAGE, AND UTILITY IMPROVEMENTS.
4. PARCEL AREA = 222,795 S.F. / 5.11 Ac.
5. ZONING DISTRICT: COMMERCIAL MANUFACTURING (CM) DISTRICT:

	REQUIRED	PROPOSED
MINIMUM LOT SIZE	20,000 S.F.	222,795 S.F.
LOT COVERAGE	50 %	12.06%
MINIMUM FRONTAGE	100 FEET	408 FEET
FRONT SETBACK	35 FEET	±109 FEET
SIDE SETBACK	10 FEET MIN.	93.77 FEET
REAR SETBACK	10 FEET MIN.	210.74 FEET
BUILDING HEIGHT	50 FEET MAX.	< 50 FEET

6. THE SUBJECT PARCEL IS LOCATED OUTSIDE OF THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.
7. BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JANUARY 22, 2021.
8. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING JANUARY 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
9. THE PARCEL IS SUBJECT TO RIGHTS OF DOVER TO MAINTAIN A WATER LINE AS DESCRIBED IN S.C.R.D. VOLUME 546, PAGE 347.
10. THE PARCEL IS SUBJECT TO A 100' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MARCH 12, 1958 AND DESCRIBED IN S.C.R.D. VOLUME 686, PAGE 130.
11. THE PARCEL IS SUBJECT TO A 20' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MAY 27, 1965 AND DESCRIBED IN S.C.R.D. VOLUME 797, PAGE 93.
12. THE PARCEL BENEFITS FROM A FIFTY (50) FOOT WIDE ACCESS AND UTILITY EASEMENT OVER LOT G/3A–100 AS DESCRIBED IN S.C.R.D. VOLUME 5064, PAGE 604.
13. THE PARCEL IS SUBJECT TO FOUR (4) EASEMENTS GRANTED TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. VOLUME 5106, PAGE 313.
14. SITE SPECIFIC SOIL MAPPING WAS PERFORMED BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CSS 012); 43 ROCKINGHAM STREET, CONCORD, NH 03301. SEE REPORT DATED DECEMBER, 2024.
15. WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS 018); 43 ROCKINGHAM STREET, CONCORD, NH 03301. JULY 2024.
16. LIST ANY VARIANCE OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS. (SEE PERMIT SUMMARY/WAIVER SUMMARY)
17. 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 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.
18. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
19. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
20. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
21. EROSION CONTROL NOTES INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
22. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
23. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
24. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
25. 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.
26. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM AND SATURDAYS 7AM–4PM. 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. WORK PRECLUDED ON SUNDAYS AND FEDERAL HOLIDAYS.
27. BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS, IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
28. THE FOLLOWING FEDERAL AND STATE PERMINTS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: (SEE PERMIT SUMMARY/WAIVER SUMMARY)

DOVER NOTES CONTINUED:

29. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
30. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
31. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
32. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.HTTPS: //PTAPP.UNH.EDU/
33. IF APPLICABLE, THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
34. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
35. THE MAXIMUM PARKING SPACE CALCULATION IS 41, INCLUDING 2 ACCESSIBLE SPACES, WHILE 41, INCLUDING 2 ACCESSIBLE SPACES, ARE PROVIDED.
36. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
37. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATE, JANUARY 2021.
38. VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED NOVEMBER 18, 2022.
39. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER. (AS APPLICABLE)
40. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
41. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81– 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
42. 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.
43. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
44. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI–117.1) AND NH RSA 155–A: 5.
45. DESIGN ENGINEER SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
46. ALL MANHOLE COVERS SHALL BE LIFTMATE R–1743–LM OR APPROVED EQUAL WITH 90 DEGREE HINGE.
47. REQUIRED BLASTING AND EXCAVATION – DOVER FIRE DEPARTMENT SHALL BE NOTIFIED PRIOR TO ANY BLASTING ACTIVITIES AND A BLASTING PERMIT FROM THE DOVER FIRE DEPARTMENT MUST BE OBTAINED.
48. THE WATER MAIN SHALL BE POLY WRAPPED IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS.
49. ALL SEWER MAINS AND MANHOLES SHALL BE TESTED IN ACCORDANCE WITH NHDES ENV–WQ 700 REQUIREMENTS. COPIES OF TEST RESULTS SHALL BE PROVIDED TO THECITY OF DOVER ENGINEERING DEPARTMENT.
50. WETLAND PLACARDS SHOULD IDENTIFY THE NO CUT WETLAND BUFFER AND SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION AND AFTER.
51. ALL FITTINGS MUST BE CLASS 140 WATER FITTINGS.
52. ALL GATE VALVES MUST BE MANUFACTURED BY MUELLER OR CLOW.

DEMOLITION NOTES:

1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF–SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. STONES FROM REMOVED STONEWALLS SHALL REMAIN ON–SITE. STONES SHALL BE REPURPOSED ON–SITE AND SHALL NOT BE USED AS FILL.
9. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
10. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF–SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.

SITE NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
3. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
4. SEE DETAILS FOR SIGN LEGENDS.
5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNER'S REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE–DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.
7. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
9. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
10. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR AND WILL BE VIA DUMPSTER ON–SITE.
11. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED. ON–SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
12. ALL EXTERIOR DOORS ARE MANUAL AND OPENED FROM THE INTERIOR BY PANIC HARDWARE. ALL EXTERIOR DOORS SHALL COMPLY WITH ADA AND ALL LOCAL BUILDING CODE REQUIREMENTS.

GRADING NOTES:

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING.
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA, SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
10. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF THE FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
11. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR THIS PROJECT. THE SWPPP MUST INCLUDE THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE SITE. PARTIES RESPONSIBLE FOR DEVELOPING THE SWPPP SHOULD REFER TO THE EPA NPDES CONSTRUCTION GENERAL PERMITS NOTICE OF INTENT FOR A COMPLETE OUTLINE OF REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
12. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
13. CONTRACTOR SHALL NOTIFY THE CITY OF DOVER AND THE DESIGN ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF PERMANENT STORMWATER BMP'S TO PROVIDE THE CITY AND THE ENGINEER THE OPPORTUNITY TO WITNESS THE CONSTRUCTION AND MATERIALS. THE DESIGN ENGINEER MUST CERTIFY THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
14. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

*ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T–191, T–204, OR T–238 AND T–239.

UTILITY NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
6. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
7. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.
8. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED AND CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER SEWER DEPARTMENT STANDARDS.
9. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
10. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
11. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
12. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
13. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
15. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY.
16. A 10–FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18–INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
17. THE CONTRACTOR SHALL CONTACT "DIG–SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG–SAFE" NUMBER ON SITE AT ALL TIMES.
18. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
19. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
20. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER.
21. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
22. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
23. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
24. THE PROPOSED STRUCTURE SHALL COMPLY WITH CHAPTER 81, ARTICLE IV, SECTION 81–27 AND THE STATE BUILDING CODES OF THE CODE OF THE CITY OF DOVER.
25. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION AS APPROPRIATE.
26. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
27. SEWAGE LOADING
    26,880 S.F. LIGHT MANUFACTURING BUILDING
    3,276 S.F. OFFICE
    23,604 S.F. WAREHOUSE
    ESTIMATED # EMPLOYEES = 41
    PER NHDES ENV–WQ1008.03 TABLE 1008–1:
    UNSPECIFIED OFFICE SPACE = 5 GPD/100 S.F.
    WAREHOUSE = 10 GPD/ PERSON
    DESIGN FLOW
    OFFICE = 3,276 S.F. x 5 GPD/100 S.F. = 164 GPD
    WAREHOUSE = 41 EMP'S x 10 GPD/EMPL. = 410 GPD
    TOTAL = 574 GPD
28. AN EASEMENT WILL BE GRANTED TO THE CITY ALONG THE WATER LINES TO ALLOW ACCESS FOR OPERATION OF THE WATER INFRASTRUCTURE TO MAINTAIN WATER QUALITY.
29. ALL VALVES SHALL OPEN COUNTER CLOCKWISE.

UTILITY CONTACTS

NATURAL GAS: – CONTACT:
UNITIL CORPORATION
DAVID MACLEAN
325 WEST ROAD
PORTSMOUTH, NH 03801
TEL: (603)–294–5261
EMAIL: MACLEAND@UNITIL.COM

WATER & SEWER: – CONTACT:
CITY OF DOVER COMMUNITY SERVICES DEPARTMENT
PUBLIC WORKS & UTILITIES
KEN MAVROGEORGE, PE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)–516–6450
EMAIL: K.MAVROGEORGE@DOVER.NH.GOV

ELECTRIC: – CONTACT:
EVERSOURCE
TREVOR EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)–332–7515
EMAIL: TREVOR.EMMONS@EVERSOURCE.COM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7–1–25

DATE: 5–29–25
SCALE: N/A
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

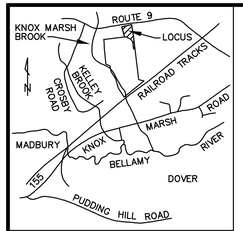
PLANNING FILE NO.: SITE–2025–0007

NOTE SHEET

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

4



LOCATION PLAN
(NO SCALE)

NH STATE PLANE NAD 83 - GPS OBS.

PROPOSED HYDRANT W/ 8" GATE VALVE

TRANSFORMER 3425/58 T1

UP 77/86 3.0' OFFSET

PROPOSED STAINLESS STEEL TAPPING SLEEVE AND GATE

WATERLINE EASEMENT S.C.R.D. 546/347

PROPOSED 60' WIDE UTILITY EASEMENT

30' WIDE UTILITY EASEMENT S.C.R.D. 5106/313

VARIABLE WIDTH R.O.W.

UP 3/85X

UP 3425/55Y

SMH 'PSMH-6'

UP 3425/56 UGU

SMH 'PSMH-A'

SMH 'PSMH-B'

SMH 'PSMH-C'

UP 3425/55

EVERSOURCE EASEMENT
(100' WIDE - S.C.R.D. 686/130)

50' WIDE R.O.W.
WESTFIELD ROAD

30" HDPE CULVERT
INV. IN = 116.32' F.E.S.
INV. OUT = 115.33'

UP 305/19Y

UP 3/84X

20' WIDE EVERSOURCE EASEMENT S.C.R.D. 797/93

GRAVEL DRIVE TO BE REMOVED

FES TO BE REMOVED REPLACE WITH HEADWALL

UP GUY

UP 819
UP GUY

UP 3/84

15" HDPE CULVERT INV. IN = 108.8'
INV. OUT = 108.8'

CULVERT TO BE REMOVED

DRAINAGE DITCH (TYP.)

24" HDPE CULVERT
INV. IN = 102.15'
INV. OUT = 101.66'

C / 2

PARCEL AEA
222,795 S.F.
5.11 Ac.

EDGE OF WETLAND (TYP.)

SEWER STRUCTURES PSMH-2, 1, EXIST.

SMH 'PSMH-5'

UP 3/83

G PP

SMH 'PSMH-3'

SMH 'PSMH-4'

DITCH WILL BE REMOVED BY PROPOSED FINIAL GRADING

LITTLEWORTH ROAD
NH ROUTE 9

UP 3/82

20' WIDE WATERLINE EASEMENT S.C.R.D. 5106/313

48" HDPE CULVERT
INV. IN = 101.72'
INV. OUT = 101.34'

50' WIDE EASEMENT S.C.R.D. 5064/604

30' WIDE DRAINAGE EASEMENT S.C.R.D. 5106/313

UP PSNH 3/810

24" HDPE CULVERT
INV. IN = 102.9'
INV. OUT = 102.6'

UP 3/81S
12/36S

SANITARY SEWER STRUCTURE SCHEDULE

SMH-C'
RIM=116.0' cvd
INV.IN=(10") 109.80' STUB
INV.OUT=(10")109.81'
SHELF=110.54'
NEXT=SMH-B

SMH-B'
RIM= 13.59'
INV.IN=(10") 104.74'
INV.OUT=(10") 104.62'
SHELF=105.60'
NEXT=SMH-A

SMH-A'
RIM= 106.5' cvd
INV.IN=(10") 103.11'
INV.OUT=(10") 103.10'
SHELF=103.87'
NEXT=SMH-6

SMH-6'
RIM=108.9' cvd
INV.IN=(10") 101.10' VENT
INV.IN=(10") 99.10' DROP
INV.IN=(10") 99.03' SMH-7
INV.OUT=(10") 98.97'
SHELF=100.03'
NEXT=SMH-5

SMH-5'
RIM=108.68'
INV.IN=(10") 98.11'
INV.OUT+(10") 98.08'
SHELF=99.00'
NEXT=SMH 4

SMH-4'
RIM=106.15'
INV.IN=(10") 97.54'
INV.OUT=(10") 97.45'
SHELF=98.26'
NEXT=SMH-3

SMH-3'
RIM=105.25'
INV.IN=(10") 96.71'
INV.OUT=(10") 96.61'
SHELF=97.48'
NEXT=SMH-2

SMH-2'
RIM=107.1'
INV.IN=(10") 95.38'
INV.OUT=(10") 95.31'
SHELF=96.17'
NEXT=SMH-1

SMH-1'
RIM=102.4' no rim
INV.IN=(10") 94.40
NV.IN=(10") 94.36'
INV.OUT=(10") 94.27'
SHELF=95.06'
NEXT=EXIST

SMH EXIST
RIM=102.1'
INV.IN=(10") 93.10'
NV.IN=(10") 93.02'
INV.OUT=(10") 92.56'
SHELF=93.17'
NEXT=OFFSITE

LEGEND

S.F. - SQUARE FEET
Ac. - ACRE
(TYP.) - TYPICAL
± - MORE OR LESS
ø - DIAMETER
S.C.R.D. - STRAFFORD COUNTY REGISTRY OF DEEDS
UP - UTILITY POLE
TBR - TO BE REMOVED
SMH - SEWER MANHOLE
WV - WATER SHUT-OFF
- WATER GATE VALVE
- FIRE HYDRANT
92 - CONTOUR LINE - 2' INTERVAL
- EDGE OF WETLAND
- WETLAND
- WETLAND BUFFER

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

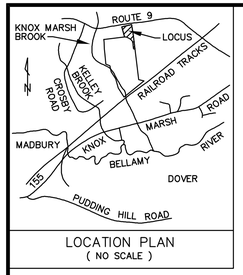
PLANNING FILE NO.: SITE-2025-0007

DEMOLITION PLAN

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

5



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - GPS OBS.

WATERLINE EASEMENT
S.C.R.D. 546/347

EVERSOURCE EASEMENT
(100' WIDE - S.C.R.D. 686/130)

50' WIDE R.O.W.
WESTFIELD ROAD

DRAINAGE DITCH (TYP.)

EDGE OF WETLAND (TYP.)

C / 2
PARCEL AEA
222,795 S.F.
5.11 Ac.

50' WIDE EASEMENT S.C.R.D. 5064/604

20' WIDE WATERLINE EASEMENT
S.C.R.D. 5106/313

30' WIDE DRAINAGE EASEMENT
S.C.R.D. 5106/313

PROPOSED 60' WIDE UTILITY EASEMENT

30' WIDE UTILITY EASEMENT
S.C.R.D. 5106/313

VARIABLE WIDTH R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9

BEGIN SGC
END SGC
BEGIN BCC
END BCC
END ICC
BEGIN ICC
PROPOSED CONCRETE TRANSFORMER PAD
PROPOSED SNOW STORAGE AREA
30' WIDE EVERSOURCE EASEMENT S.C.R.D. 797/93
PROPOSED BUILDING
26,880 S.F.
CONCRETE DUMPSTER PAD WITH ENCLOSURE (SEE DETAIL)
PROPOSED PAINTED ISLAND
PROPOSED FUTURE CAR CHARGING STATION
PROPOSED R7-8 SIGN
PROPOSED RAMP WITH TIP-DOWN CURB
PROPOSED R7-8 & R7-8A SIGN
PROPOSED 5' WIDE CONCRETE SIDEWALK
PROPOSED BIKE RACK
PROPOSED 5' WIDE CONCRETE STAIRS
30'
140'
240'
112'
28'
18'
24'
5'
9'
8'

SITE PARKING CALCULATIONS
COMMERCIAL/MANUFACTURING DISTRICT

USES:	REQUIRED	PROPOSED
OFFICE AREA: 1 SPACE/300 S.F. 3,276 S.F. x 1 / 300 S.F.=10.92	11	11
INDUSTRIAL: 1 SPACE/800 S.F. 23,604 S.F. x 1/800 S.F.=29.51	30	30
TOTAL	41	41
ACCESSIBLE PARKING	2 (1 VAN)	2 (1 VAN)

SNOW STORAGE CALCULATIONS
37,117 S.F. PAVEMENT 1 S.F. STORAGE / 10 SF PAVEMENT = ±3,712 S.F.

SNOW STORAGE AREA PROVIDED ±5,669 S.F.

– PROPOSED HEAVY DUTY PAVEMENT SECTION

LEGEND

Ac.	– ACRE
(TYP.)	– TYPICAL
±	– MORE OR LESS
ø	– DIAMETER
S.C.R.D.	– STRAFFORD COUNTY REGISTRY OF DEEDS
UP	– UTILITY POLE
	– FIRE HYDRANT
	– WETLAND
	– EDGE OF WETLAND
	– WETLAND BUFFER
25'R	– PAVEMENT RADUIS
SGC	– SLOPED GRANITE CURB
ICC	– INTERGRATED CONCRETE CURB
BCC	– BITUMINOUS CONRETE CURB
	– ACCESIBLE PARKING SYMBOL
	– PROPOSED SIDEWALK
	– PROPOSED GRAVEL

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO: 18043
FILE: SITE

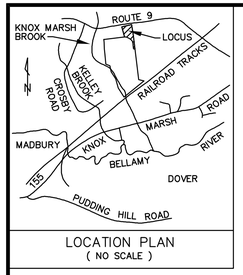
PLANNING FILE NO.: SITE-2025-0007

SITE PLAN

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

6



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - GPS OBS.

WESTFIELD ROAD
50' WIDE R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9
VARIABLE WIDTH R.O.W.

WETLAND BUFFER IMPACT "A"

WETLAND BUFFER IMPACT "B"

PROPOSED 8" DOUBLE ROW SILTSOXX (TYP)

PROPOSED 8" SINGLE ROW SILTSOXX (TYP)

PROPOSED HEADWALL INV.OUT=115.33'

PROPOSED HEADWALL INV.IN=116.32

PROPOSED CHECK DAM (TYP)

PROPOSED BIO-RETENTION W/SR 1 (SEE DETAIL)

30" HDPE CULVERT
INV. IN = 116.32' F.E.S.
INV. OUT = 115.33'

24" HDPE CULVERT
INV. IN = 102.15'
INV. OUT = 101.66'

24" HDPE CULVERT
INV. IN = 102.9'
INV. OUT = 102.6'

48" HDPE CULVERT
INV. IN = 101.72'
INV. OUT = 101.34'

50' WIDE EASEMENT S.C.R.D. 5064/604

DRAINAGE DITCH (TYP.)

EDGE OF WETLAND (TYP.)

POND BOTTOM 104.25

F.F.=119.25

G PP

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
SMH – SEWER MANHOLE
– WATER SHUT-OFF
– WATER GATE VALVE
– FIRE HYDRANT
92 – CONTOUR LINE – 1' INTERVAL
– EDGE OF WETLAND
– WETLAND
– WETLAND BUFFER
92.0 – PROPOSED FINISH GRADE
x 92.0 – PROPOSED SPOT ELEVATIONS
PD – PROPOSED DRAIN LINE

CONDITIONAL USE PERMIT
WETLAND BUFFER IMPACTS

IMPACT	AREA
A	8,010 S.F.
B	8,669 S.F.
TOTAL	16,679 S.F.

– PROPOSED WETLAND BUFFER IMPACTS

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

PLANNING FILE NO.: SITE-2025-0007

GRADING & EROSION CONTROL PLAN

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

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CIVIL & WATERFRONT ENGINEERING
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Dover, New Hampshire 03821
603.749.0443

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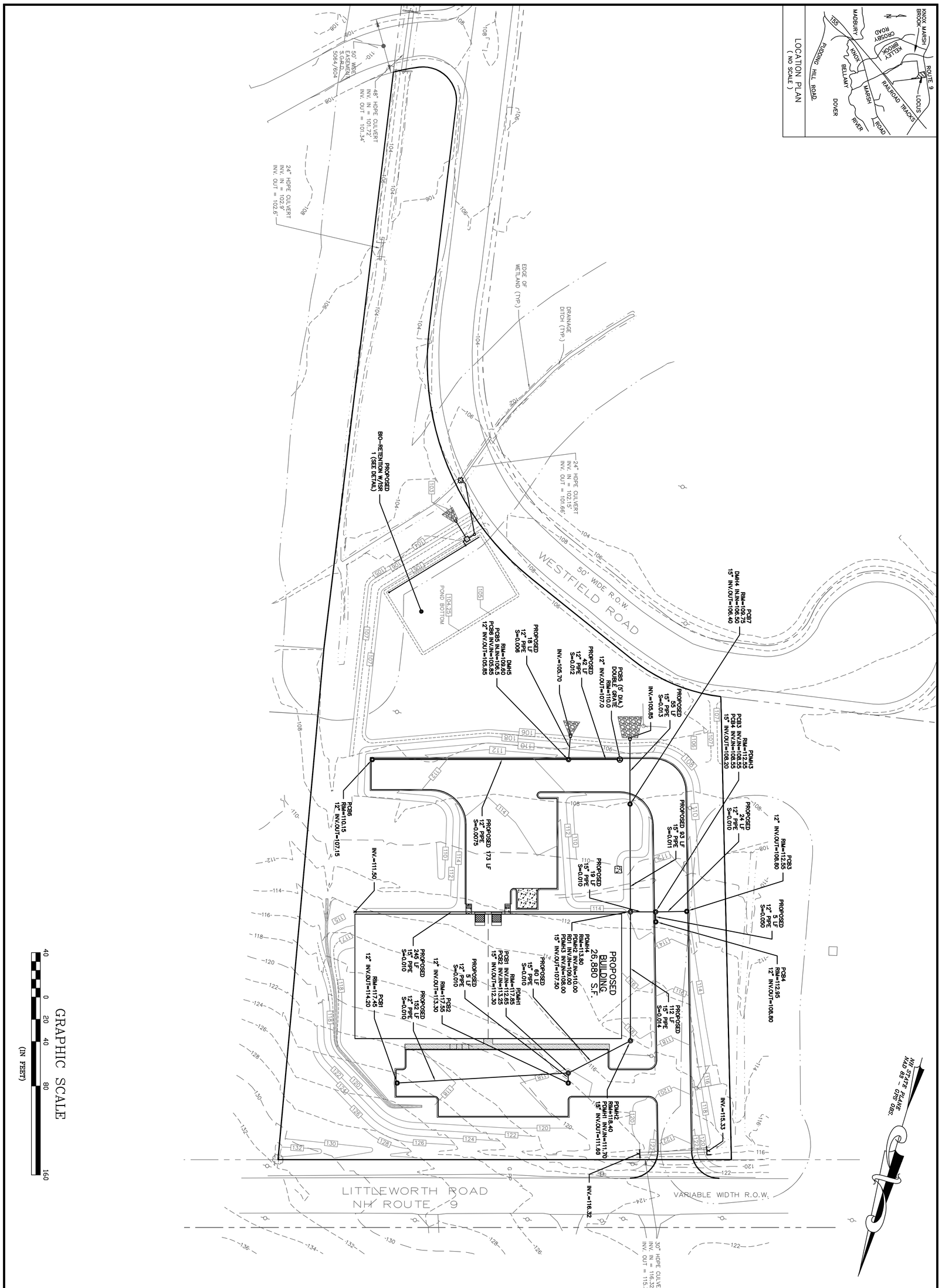
DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE



PLANNING FILE NO.: SITE-2025-0007

DRAINAGE PLAN

8

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

DATE: 5-29-25				
SCALE: 1"=40'				
DRAWN BY: SRD				
DESIGN BY: SJH				
APPROVED BY:SJH				
PROJECT NO:18043	1	REV. PER TRC COMMENTS	SJH	7-1-25
FILE: SITE	NO.	REVISION	APP'D	DATE

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LOCATION PLAN
(NO SCALE)

NH STATE PLANE NAD 83 - GPS OBS.

PROPOSED HYDRANT W/ 8" GATE VALVE

TRANSFORMER 3425/58 T1

UP 77/86 3.0' OFFSET

PROPOSED STAINLESS STEEL TAPPING SLEEVE AND GATE

PROPOSED 6" D.I. WATER MAIN

PROPOSED 6" SDR35 PVC SEWER SERVICE S=0.02 L=45'

WATERLINE EASEMENT S.C.R.D. 546/347

PROPOSED 60' WIDE UTILITY EASEMENT

30' WIDE UTILITY EASEMENT S.C.R.D. 5106/313

VARIABLE WIDTH R.O.W.

UP 3425/55

EVERSOURCE EASEMENT
(100' WIDE - S.C.R.D. 686/130)

UP 3425/55Y

SMH 'PSMH-6'

UP 3425/56

SMH 'PSMH-A'

SMH 'PSMH-B'

SMH 'PSMH-C'

UP 3/85X

UP 3/84X

UP 3/84

UP 3/83

UP 3/82

UP PSNH 3/810

UP 3/81S 12/36S

UP 305/19Y

UP 819 UP GUY

UP GUY

50' WIDE R.O.W.
WESTFIELD ROAD

20' WIDE EVERSOURCE EASEMENT S.C.R.D. 797/93

PROPOSED BUILDING 26,880 S.F.

INV.OUT=112.5

PROPOSED HYDRANT & GATE VALVE

PROPOSED 2" POLY GAS SERVICE

PROPOSED FDC

PROPOSED 1" POLY WATER SERVICE

DRAINAGE DITCH (TYP.)

EDGE OF WETLAND (TYP.)

SEWER STRUCTURES PSMH-2, 1, EXIST.

SMH 'PSMH-5'

SMH 'PSMH-3'

SMH 'PSMH-4'

20' WIDE WATERLINE EASEMENT S.C.R.D. 5106/313

50' WIDE EASEMENT S.C.R.D. 5064/604

30' WIDE DRAINAGE EASEMENT S.C.R.D. 5106/313

G PP

LITTLEWORTH ROAD
NH ROUTE 9

SANITARY SEWER STRUCTURE SCHEDULE

SMH-C'
RIM=116.0' cvd
INV.IN=(10") 109.80' STUB
INV.OUT=(10")109.81'
SHELF=110.54'
NEXT=SMH-B

SMH-B'
RIM= 13.59'
INV.IN=(10") 104.74'
INV.OUT=(10") 104.62'
SHELF=105.60'
NEXT=SMH-A

SMH-A'
RIM= 106.5' cvd
INV.IN=(10") 103.11'
INV.OUT=(10") 103.10'
SHELF=103.87'
NEXT=SMH-6

SMH-6'
RIM=108.9' cvd
INV.IN=(10") 101.10' VENT
INV.IN=(10") 99.10' DROP
INV.IN=(10") 99.03' SMH-7
INV.OUT=(10") 98.97'
SHELF=100.03'
NEXT=SMH-5

SMH-5'
RIM=108.68'
INV.IN=(10") 98.11'
INV.OUT+(10") 98.08'
SHELF=99.00'
NEXT=SMH 4

SMH-4'
RIM=106.15'
INV.IN=(10") 97.54'
INV.OUT=(10") 97.45'
SHELF=98.26'
NEXT=SMH-3

SMH-3'
RIM=105.25'
INV.IN=(10") 96.71'
INV.OUT=(10") 96.61'
SHELF=97.48'
NEXT=SMH-2

SMH-2'
RIM=107.1'
INV.IN=(10") 95.38'
INV.OUT=(10") 95.31'
SHELF=96.17'
NEXT=SMH-1

SMH-1'
RIM=102.4' no rim
INV.IN=(10") 94.40
NV.IN=(10") 94.36'
INV.OUT=(10") 94.27'
SHELF=95.06'
NEXT=EXIST

SMH EXIST
RIM=102.1'
INV.IN=(10") 93.10'
NV.IN=(10") 93.02'
INV.OUT=(10") 92.56'
SHELF=93.17'
NEXT=OFFSITE

LEGEND
S.F. - SQUARE FEET
Ac. - ACRE
(TYP.) - TYPICAL
± - MORE OR LESS
ø - DIAMETER
S.C.R.D. - STRAFFORD COUNTY REGISTRY OF DEEDS
UP - UTILITY POLE
SMH - SEWER MANHOLE
WV - WATER SHUT-OFF
- WATER GATE VALVE
- FIRE HYDRANT
- EDGE OF WETLAND
- WETLAND
- WETLAND BUFFER
PD - PROPOSED DRAIN LINE
PW - PROPOSED WATER
PE - PROPOSED UTILITY LINES
PS - PROPOSED SEWER LINE
PG - PROPOSED GAS LINE

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
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DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

PLANNING FILE NO.: SITE-2025-0007

UTILITY PLAN

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

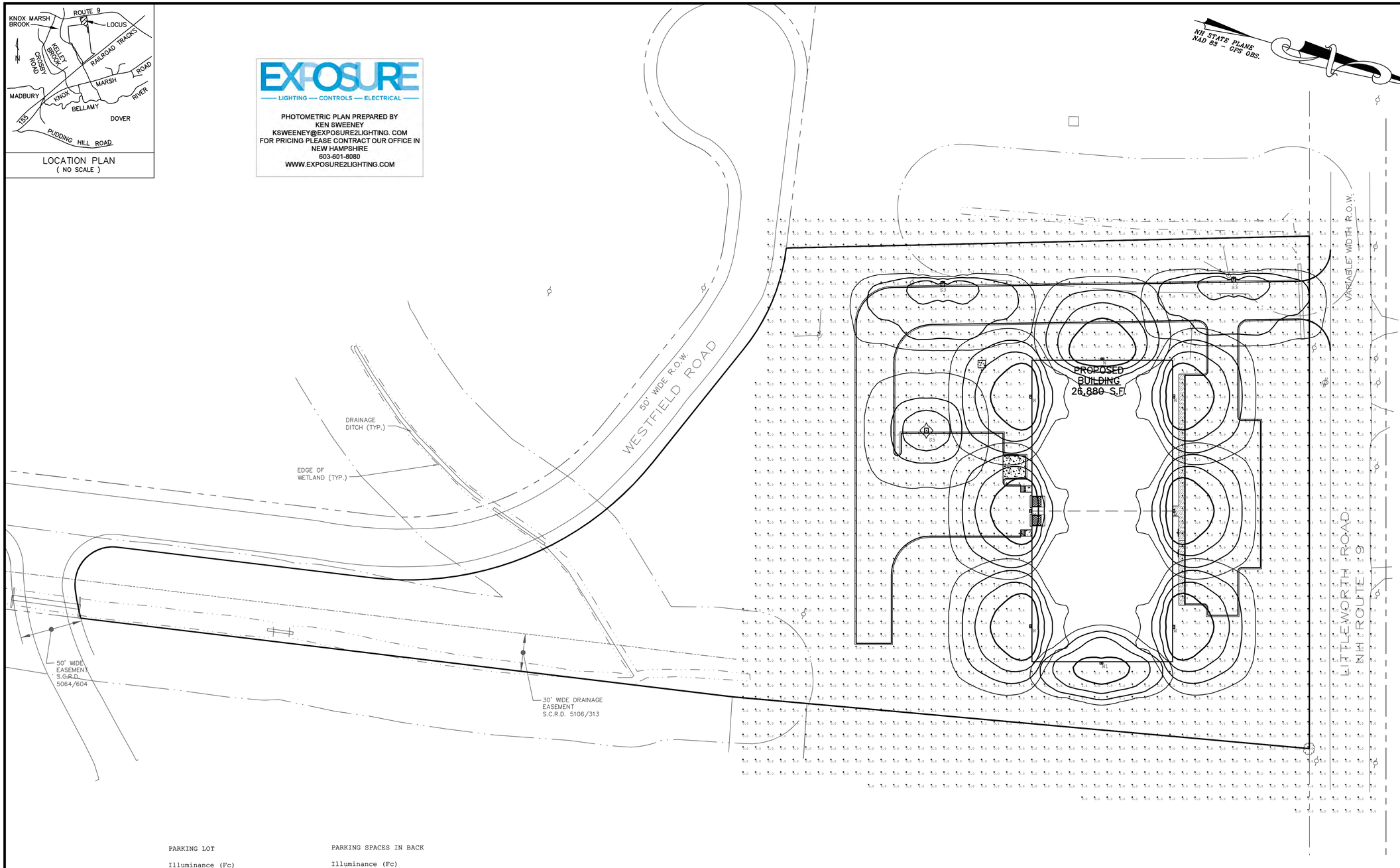
9

LOCATION PLAN
(NO SCALE)

EXPOSURE
LIGHTING — CONTROLS — ELECTRICAL

PHOTOMETRIC PLAN PREPARED BY
KEN SWEENEY
KSWEENEY@EXPOSURE2LIGHTING. COM
FOR PRICING PLEASE CONTRACT OUR OFFICE IN NEW HAMPSHIRE
603-601-8080
WWW.EXPOSURE2LIGHTING.COM

NH STATE PLANE
NAD 83 - GPS OBS.



PARKING LOT

Illuminance (Fc)
Average = 1.15
Maximum = 3.6
Minimum = 0.3
Avg/Min Ratio = 3.83
Max/Min Ratio = 12.00

PARKING SPACES IN BACK

Illuminance (Fc)
Average = 0.79
Maximum = 1.1
Minimum = 0.5
Avg/Min Ratio = 1.58
Max/Min Ratio = 2.20

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	Tag	[MANUFAC]
	2	S3	Single	VALS-09L-3W-UNV-30K8-CXX-SA / 4SQ B3 S11G20 S CXX AB 4BC	20' POLE	LSI INDUSTRIES, INC.
	1	S5	Single	VALS-06L-5QW-UNV-DIM-30K8-CXX-SA / 4SQ B3 S11G20 S CXX AB 4BC		LSI INDUSTRIES, INC.
	7	W	Single	XWM-4-LED-12L-30-UE- CXX	WALL MOUNTED 20' AFG	LSI INDUSTRIES, INC.
	1	W1	Single	XWM-2-LED-06L-30-UE-CXX	WALL MOUNTED 20' AFG	LSI INDUSTRIES, INC.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

PLANNING FILE NO.: SITE-2025-0007

LIGHTING PLAN

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

10

Catalog #: _____ Project: _____
Prepared By: _____ Date: _____

Steel Poles

Square Straight

QUICK LINKS

Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-2/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor Bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 PSI.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing Ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip Protection System and a 5-year limited warranty.
- When the top-of-the line DuraGrip Plus Protection System is selected, in addition to the DuraGrip Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information.
- Select bracket configuration if required.
- Determine EPA value from luminaire/bracket EPA chart.
- Select Pole Height.
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA.
- Consult factory for special wind load requirements and banner brackets.

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant

Catalog #: _____ Project: _____ Type: _____
Prepared By: _____ Date: _____

V-Locity Small (VALS)

Outdoor LED Area Light

IP66

OVERVIEW	
Lumen Package	6,000 - 27,000
Wattage Range	36 - 178
Efficacy Range (LPW)	142 - 171
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical units. Cast aluminum wiring access door located underneath.
- Self-contained optic, board and heat sink assembly can be rotated or replaced in the field.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: TBD lbs in carton.

Optical System

- State-of-the-Art acrylic optics delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary refractor optics provide exceptional coverage and uniformity in distribution types 2, 2M, 2W, 4M, 4W, 4F, FTM, SQN, SQM, SQ, SQW, AM, WF and LC/RC.
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377 as well as phosphor converted amber.
- Minimum CRI of 80 (optional 70 CRI for 5000K and 4000K).
- Factory or field installable integral shielding available for enhanced spill light control.
- Zero Uplight (excludes adjustable arms).

Electrical

- High-performance driver features over-voltage, under voltage, short-circuit and over temperature protection.
- 0-10 volt dimming (10% - 100%) standard, must specify EXT option for dimming leads to be extended to fixture exterior.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours.
- Total harmonic distortion: <20%.
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: > 90.
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation.
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- RED/Mount pole mount arm allows for a true one person installation.
- Side arm pole mount designed to mount to square or round poles.
- Pole mount arms can accommodate pole drill patterns from 2.4 to 5" on center and utilize LSI's reduced B3 or traditional B5 drill patterns.
- Additional mounting options are available including a mast arm or adjustable slip fitter that allow for luminaire attachment to a 2 3/8" tenon or mast arm.
- Adjustable arms allow for 65° of tilt (-5° below horizontal to +60° above horizontal) in 5° increments.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- DarkSky approved with 3000K or warmer color temperature selection (side arm pole and mast arm mounting only).
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.

Catalog #: _____ Project: _____ Type: _____
Prepared By: _____ Date: _____

Mirada Medium Wall Sconce (XWM)

Outdoor Wall Sconce

IP65 IK08

OVERVIEW	
Lumen Package	3,000 - 21,000
Wattage Range	23 - 175
Efficacy Range (LPW)	125 - 158
Weight lbs(kg)	27 (12.2)
Control Options	IMSBT, ALB, ALS, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Hinged die-cast aluminum wiring access door located underneath.
- Galvanized-steel universal wall mount bracket comes standard with hinging mechanism to easily access the junction box wire connections without removing the luminaire.
- Optional pole-mounting bracket (XPMA) permits mounting to standard poles.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Max shipping weight: 30lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic provides industry leading optical control while also acting as an integrated gasket reducing system complexity and improving fixture reliability.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in Types 2, 3, 4, and FT distributions.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- 5000K, 4000K, 3500K, 3000K, and 2700K color temperatures per ANSI C78.377. Also Available in Phosphor Converted Amber with Peak Intensity at 610nm.
- 70 or 80CRI Minimum.

Electrical

- High-performance programmable driver features over-voltage, under-voltage, short-circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L80 Calculated Life: >100k Hours.
- Total harmonic distortion (THD): <20%.
- 3L to 12L operating temperature: -40°C to +50°C (-40°F to +122°F).
- 15L operating temperature: -40°C to +45°C (-40°F to +113°F).
- 18L operating temperature: -40°C to +40°C (-40°F to +104°F).
- 21L operating temperature: -40°C to +35°C (-40°F to + 95°F).
- Power factor (PF): >.90.
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation.
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed via hinged door.
- Optional integral emergency battery pack provides 90-minutes of constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. The fixture delivers 1500 lumens during emergency mode.

Controls

- Integral passive infrared Bluetooth™ motion sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app. Updates and modifications to the control strategy are easily implemented via an intuitive app.
- The ALBMRxLR utilizing an external antenna for long range communications allows for Bluetooth Mesh wireless up to 100' from node to node. Ensures reliable wireless communications for applications where only wall-mount fixture product is being utilized.

Installation

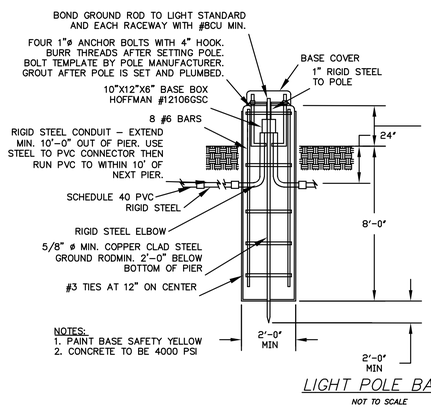
- Universal wall mounting plate easily mounts directly to 4" octagonal or square junction box.
- 2 fasteners secure the hinged door underneath the housing and provide quick & easy access to the electrical compartment for installing/servicing.
- Optional terminal block accepts up to 12 ga wire.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.
- 1 Year warranty on Battery Back-up option.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant, with 3000K or lower color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet Locations.
- IP65 rated luminaire per IEC 60598.
- 3G rated for ANSI C136.31 high vibration applications when pole mounted (using optional XPMA bracket) or wall mounted.
- IK08 rated luminaire per IEC 62262 mechanical impact code.
- Design Lights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.



LIGHT POLE BASE
NOT TO SCALE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: N/A
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY: SJH
PROJECT NO: 1843
FILE: SITE

PLANNING FILE NO.: SITE-2025-0007

LIGHTING DETAILS

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

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DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS FOR A 26,880 S.F. LIGHT INDUSTRIAL BUILDING WITH THE ASSOCIATED GRADING, DRAINAGE, WATER, SEWAGE, AND ELECTRIC UTILITY IMPROVEMENTS.

PROJECT NAME AND LOCATION

LIGHT INDUSTRIAL FACILITY
TAX MAP 6 LOT 2, LITTLEWORTH ROAD — *LATITUDE N43° 16' 16"*
DOVER, NEW HAMPSHIRE 03820 — *LONGITUDE W70° 54' 31"*

DISTURBED AREA

±159,947 S.F.

NOTES:

1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

SEQUENCE OF MAJOR ACTIVITIES

1. CONTRACTOR SHALL PREPARE THE SWPPP, FILE FOR AND OBTAIN THE NOI A MINIMUM OF 2 WEEKS PRIOR TO COMMENCEMENT OF SITE WORK.
2. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
3. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
4. SELECTIVE DEMOLITION.
5. REGRADE SITE TO SUBGRADE.
6. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECCESSARY UNTIL AREAS ARE STABILIZED.
7. SWALES AND PONDS (AS APPLICABLE) SHALL BE CONSTRUCTED EARLY ON IN THE CONSTRUCTION SEQUENCE AND BEFORE ROUGH GRADING OF THE SITE AND ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. INSTALL DRAINAGE STRUCTURES AND CONTROLS.
9. INSTALL FOUNDATION FOOTINGS AND WALLS.
10. INSTALL UTILITIES.
11. PLACE GRAVELS AND FINE GRADE.
12. STABILIZE ROADWAYS AND PARKING AREAS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
14. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
15. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
16. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND FILE THE EPA – N.O.T.

DEFINITIONS

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED.

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE, AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. SILT BARRIER

1. INSTALLATION
   a. USE SILT BARRIER AS PERIMETER CONTROLS, PARTICULARLY AT THE LOWER OR DOWN SLOPE EDGE OF A DISTURBED AREA.
   b. LEAVE SPACE FOR MAINTENANCE BETWEEN TOE AND SLOPE OF SILT BARRIER.
   c. TRENCH IN THE SILT BARRIER ON THE UPHILL SIDE (6 INCHES DEEP BY 6 INCHES WIDE).
   d. INSTALL STAKES ON THE DOWNHILL SIDE OF THE SILT BARRIER.
   e. CURVE THE END OF THE SILT BARRIER UP-GRADIENT TO HELP IT CONTAIN RUNOFF.
2. SEQUENCE OF INSTALLATION
   a. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
3. MAINTENANCE
   a. SILT BARRIERS SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
   b. SILT BARRIERS HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT BARRIERS SHOULD BE REPLACED PERIODICALLY TO MAINTAIN EFFECTIVENESS.
   c. REMOVE SEDIMENT WHEN IT REACHES ONE-THIRD (1/3) THE HEIGHT OF THE SILT BARRIER.
   d. REPLACE THE SILT BARRIERS WHERE THEY ARE TORN, WORN, OR OTHERWISED DAMAGED AND MONITOR PERFORMANCE TO ENSURE EFFECTIVE PERFORMANCE.
   e. RETRENCH OR REPLACE ANY SILT BARRIER THAT IS NOT PROPERLY ANCHORED TO THE GROUND.
   f. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
   g. SILT BARRIERS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.

B. MULCHING

1. TIMING
   a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
   c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THIS SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
   a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FEET.
   b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 150-200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
   a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
   b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECCESSARY.
   c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
   d. EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING

1. SEEDBED PREPARATION
   a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
   b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
      i) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
      ii) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
   a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
   c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
   d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
   a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING

1. BEDDING – STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERRING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
   a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
   b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITORGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
   c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
      LOW PHOSPHATE (N-P2O5-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
   RATE:

TYPE	LBS. PER ACRE	LBS. PER 1,000 S.F.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
   a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
   b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
   c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
   a. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
   b. SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
   c. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABALIZATION OF EXPOSED SOILS.
   d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
   e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION

1. SPECIFICATIONS
   a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
   b. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
   a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND-DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
   b. PROTECT ALL INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
   c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMPS.
   d. DESIGN YOUR INLET PROTECTION TO HANDLE THE VOLUME OF WATER FROM THE AREA BEING DRAINED. ENSURE THAT THE DESIGN IS SIZED APPROPRIATELY.
3. MAINTENANCE
   a. INSPECT INLETS BARRIERS FREQUENTLY, BEFORE AND AFTER EACH RAINFALL EVENT AND REPAIR WHEN NECESSARY.
   b. SEDIMENT SHOULD BE REMOVED AND THE STORM DRAIN SEDIMENT BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE BARRIER.
   c. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   d. SWEEP STREETS, SIDEWALKS, AND OTHER PAVED AREAS REGULARLY.
   e. ALL CATCH BASINS AND STORM DRAIN INLETS MUST BE CLEANED AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

WASTE DISPOSAL

a. WASTE MATERIALS
   ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
   ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
   ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENACE OF STORMWATER MANAGEMENT FACILITIES

THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PROPERTY OWNER IS RESPONSIBLE AFTER CONSTRUCTION IS COMPLETE.

CATCH BASINS & STORMWATER TREATMENT STRUCTURES

1. CATCH BASINS & STORMWATER TREATMENT STRUCTURES SHOULD BE INSPECTED ON A MONTHLY BASIS AND/OR AFTER A MAJOR RAINFALL EVENT TO ASSURE THAT DEBRIS OR SEDIMENTS DO NOT REDUCE THE EFFECTIVENESS OF THE SYSTEM.

SPILL PREVENTION

A. MATERIAL MANAGEMENT PRACTICES
   THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING
   1. THE CONSTRUCTION PROJECT:
      a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
      b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
      c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
      d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
      e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
      f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
   2. HAZARDOUS PRODUCTS:
      a. THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
      b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
      c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
      d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
   1. PETROLEUM PRODUCTS:
      a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENACE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
   2. FERTILIZERS:
      a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
   3. PAINTS:
      a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   4. CONCRETE TRUCKS:
      a. CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.

C. SPILL CONTROL PRACTICES
   IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   c. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   d. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OF LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
   f. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
   g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

THE PROJECT PROPONENT IS REQUIRED TO MANAGE CONSTRUCTION TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO CONTROLLING INVASIVE SPECIES AND CONTROLLING FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002.

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

THE RULE, AGR 3800, STATES: NO PERSON SHALL COLLECT, TRANSPORT, IMPORT, EXPORT, MOVE, BUY SELL, DISTRIBUTE, PROPAGATE OR TRANSPLANT ANY LIVING AND VIABLE PORTION OF ANY PLANT SPECIES, WHICH INCLUDED ALL OF THEIR CULTIVARS AND VARIETIES, LISTED IN TABLE 3800.1, NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST: A COMPLETE COPY OF THE RULES CAN BE ACCESSED ON THE INTERNET AT HTTP://AGRICULTURE.NH.GOV/TOPICS/PLANTS_INSECTS.HTM.

ENV-A 1002 FUGITIVE DUST: PRECAUTIONS TO PREVENT, ABATE, AND CONTROL FUGITIVE DUST.

a. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE EMITS FUGITIVE DUST, OTHER THAT THOSE LISTED IN ENV-A 1002.02 (b), SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST.
b. PRECUATIONS REQUIRED BY (a) ABOVE, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   I) THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
   II) THE APPLICATION OF ASPHALT, WATER, OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIAL STOCKPILES;
   III) THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
   iv) THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS; AND
   v) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT.
2. ALL DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

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APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

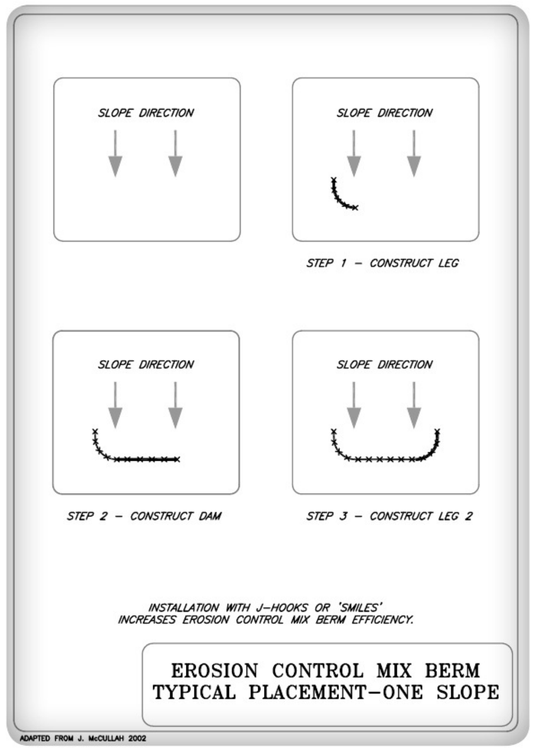
PLANNING FILE NO.: SITE-2025-0007

EROSION CONTROL NOTES

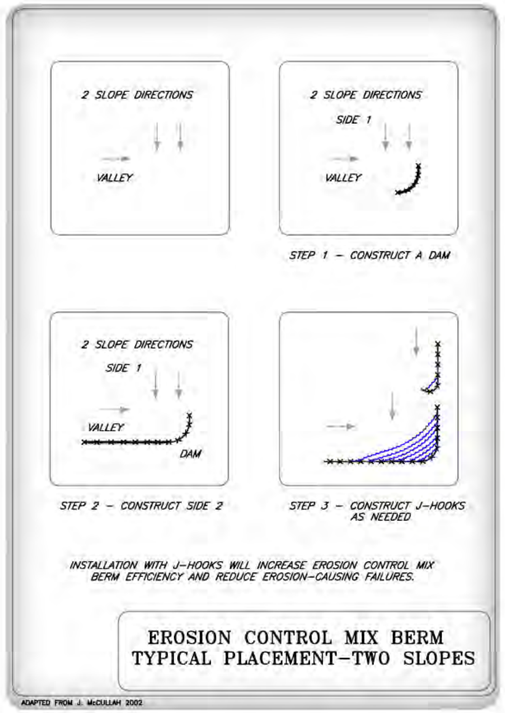
WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

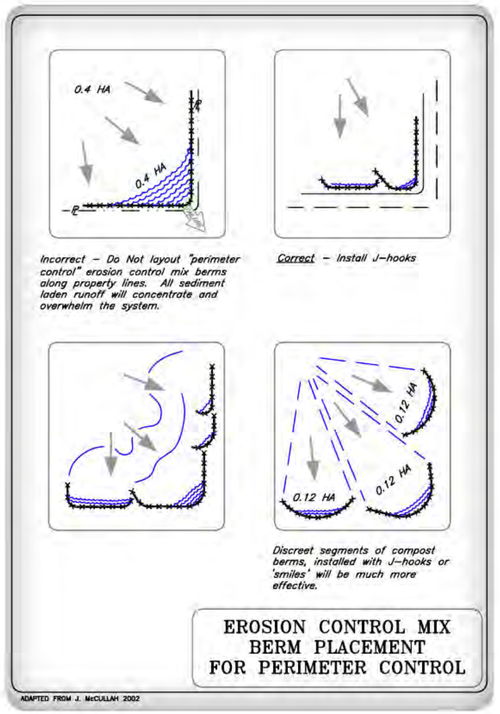
12



DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



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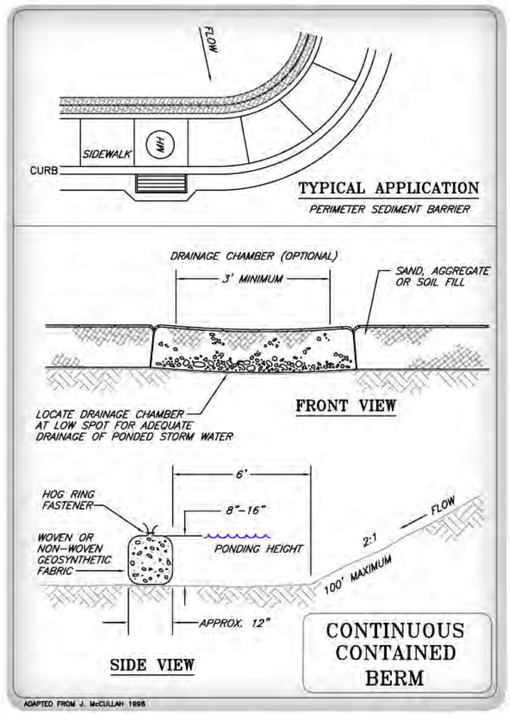
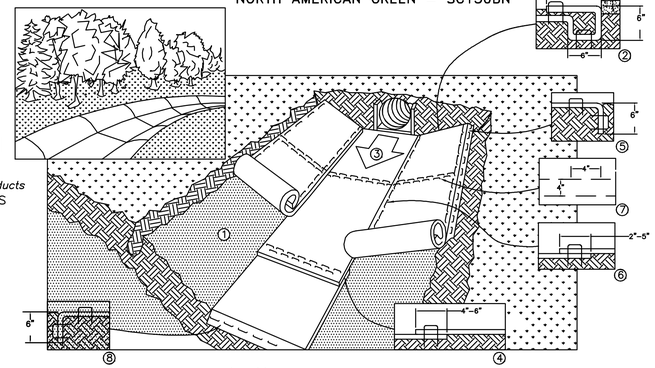


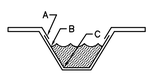
DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3

CHANNEL INSTALLATION
NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



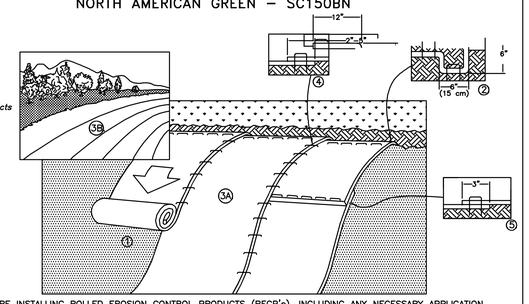
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

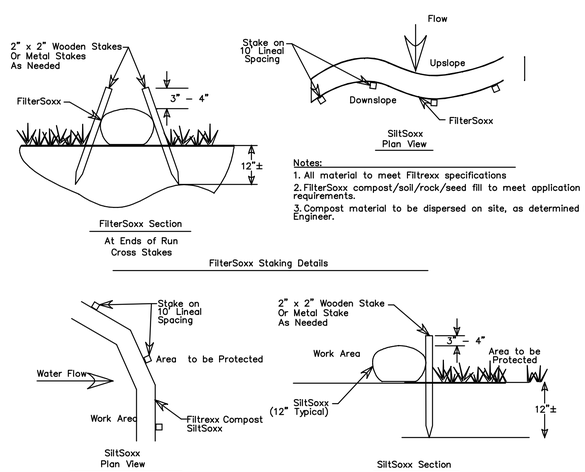
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM® , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

NOTE: THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.



SILTSOXX DETAILS
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	DATE	APP'D
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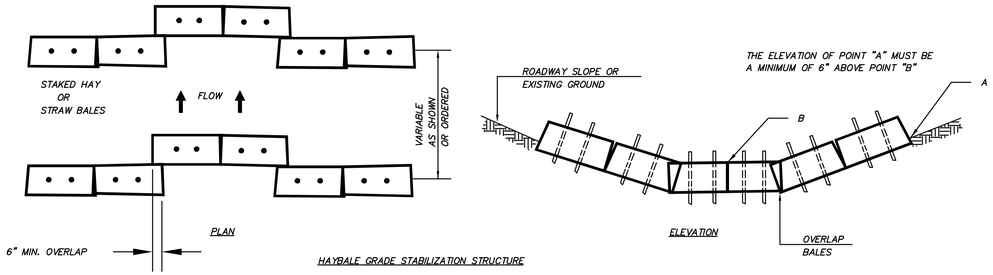
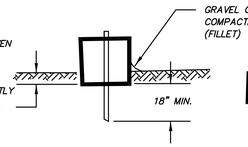


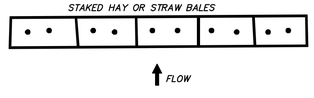
HAYBALE GRADE STABILIZATION STRUCTURE

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" x 2" STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
6. REMOVE AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING HAYBALES.



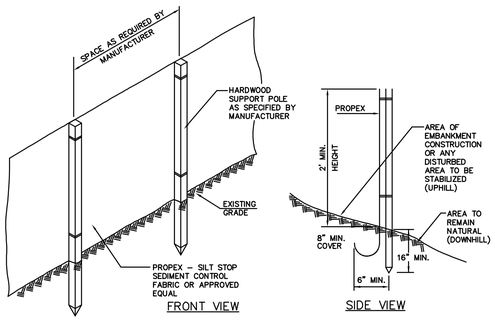
EMBEDDING DETAIL



HAYBALE BARRIER AT TOE OF SLOPE

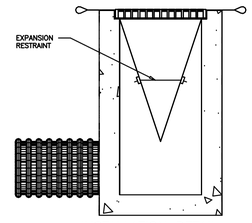
HAYBALE NOTES AND DETAILS

NOT TO SCALE



SILT FENCE DETAIL

NOT TO SCALE



INSTALLATION DETAIL

OIL-ABSORBANT SILTSACK®

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.

SILTSACK®

SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS. AS SUPPLIED BY AH HARRIS OF PORTSMOUTH OR APPROVED EQUAL

REGULAR FLOW SILTSACK®

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

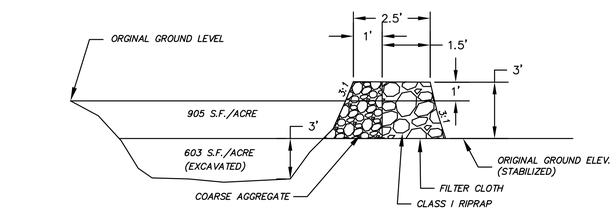
HI-FLOW SILTSACK®

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

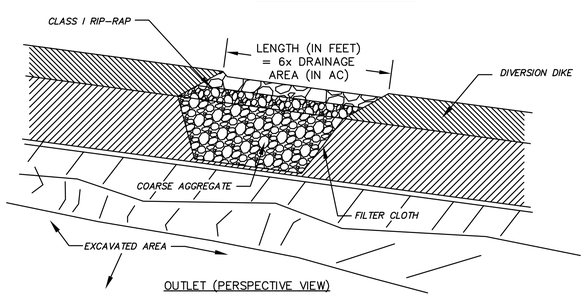
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

DETAIL OF INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE



CROSS SECTION OF OUTLET

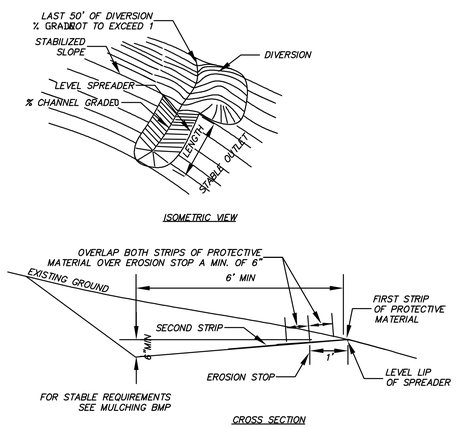


OUTLET (PERSPECTIVE VIEW)

NOTES:
1. COARSE AGGREGATE SHALL MEET NHDOT 304.5 SPECIFICATIONS AND SHALL NOT CONTAIN MORE THAN 5% FINES PASSING THE #200 SIEVE.
2. FILTER CLOTH SHALL BE MIRAFI 700X OR APPROVED EQUAL.
3. CLASS I RIPRAP SHALL MEET NHDOT 583 SS SPECIFICATIONS.
4. THE MAXIMUM CONTRIBUTING AREA TO THE TRAP SHALL BE LESS THAN 5 AC.
5. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED.
6. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

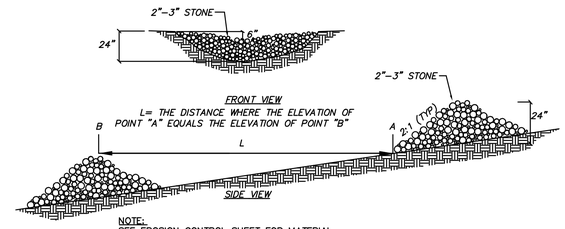
TEMPORARY SEDIMENT TRAP

NOT TO SCALE



LEVEL SPREADER DETAIL

NOT TO SCALE

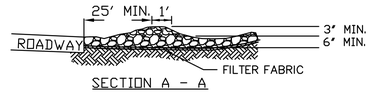


NOTE:
SEE EROSION CONTROL SHEET FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

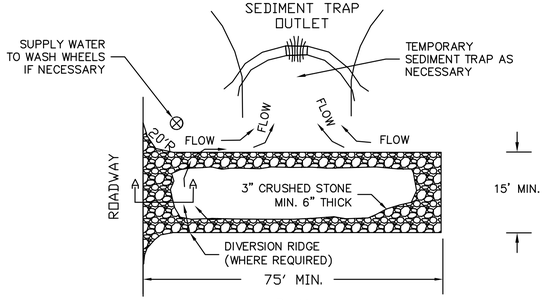
STONE CHECK DAM

NOT TO SCALE

DIVERSION RIDGE REQUIRED
WHERE GRADE EXCEEDS 2%



SECTION A - A



PLAN

A. GENERAL NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORM WATER RUNOFF FROM ROADS
2. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE IS REQUIRED TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
3. LOCATE THE CONSTRUCTION ENTRANCES AND EXITS, A MINIMUM OF 100 FEET FROM INTERSECTIONS, TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES THAT HAVE STEEP GRADES AND ENTRANCES AT CURVES IN ROADS.
4. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL 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 AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.

B. SPECIFICATIONS (TEMPORARY CONSTRUCTION ENTRANCE/EXITS SHOULD MEET THE FOLLOWING REQUIREMENTS).

1. STONE SIZE MINIMUM: USE SHOULD BE 3" CRUSHED STONE.
2. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET.
3. THE MINIMUM WIDTH OF THE PAD SHOULD BE 15 FEET OR THE WIDTH OF THE ENTRANCE, WHICHEVER IS GREATER
4. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
5. THE PAD SHOULD BE AT LEAST 6" THICK.
6. A GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
7. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

C. MAINTENANCE REQUIREMENTS (THE ENTRANCE/EXIT SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT).

1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.
2. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WHEEL WASHING IS REQUIRED, IT SHOULD BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES OR WATERWAYS.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

GNE
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
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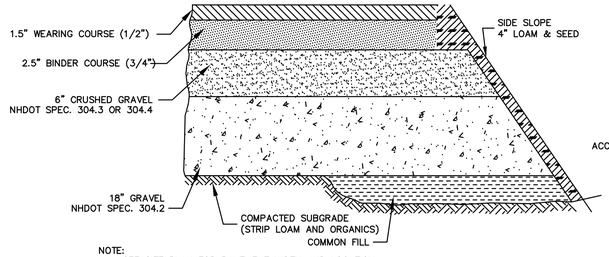
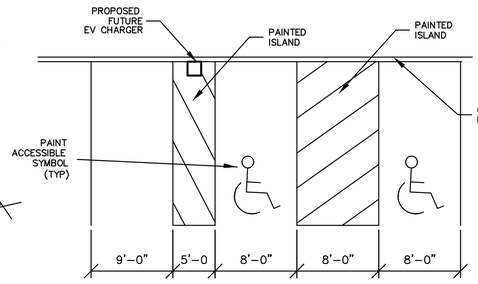


NOTE:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. GEOTEXTILE FABRIC MAYBE REQUIRED UNDER THE ROADWAY AND /OR THE PARKING AREAS AS REQUIRED BY THE ENGINEER BASED UPON SITE CONDITIONS.

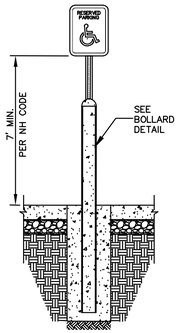
HEAVY DUTY TYPICAL PAVEMENT SECTION

NOT TO SCALE



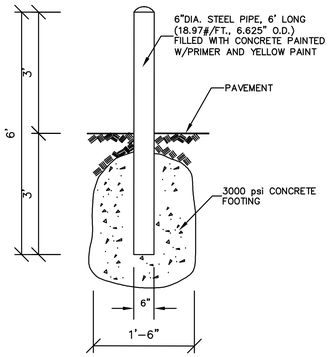
ACCESSIBLE PARKING LAYOUT

NOT TO SCALE



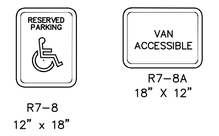
SIGN IN BOLLARD

NOT TO SCALE



BOLLARD DETAIL

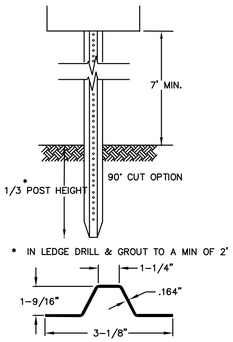
NOT TO SCALE



NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

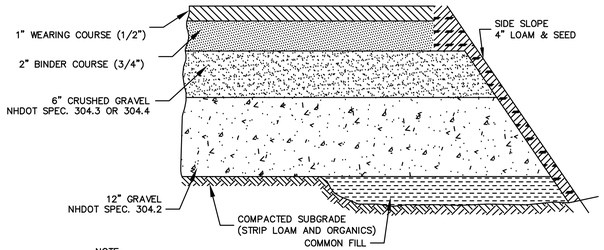
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN

BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.



SIGN LEGEND & SIGN POST

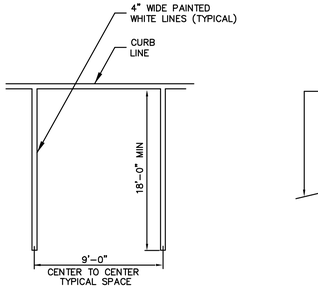
NOT TO SCALE



NOTE:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. GEOTEXTILE FABRIC MAYBE REQUIRED UNDER THE ROADWAY AND /OR THE PARKING AREAS AS REQUIRED BY THE ENGINEER BASED UPON SITE CONDITIONS.

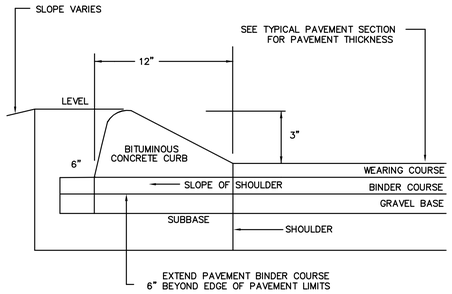
TYPICAL PAVEMENT SECTION

NOT TO SCALE



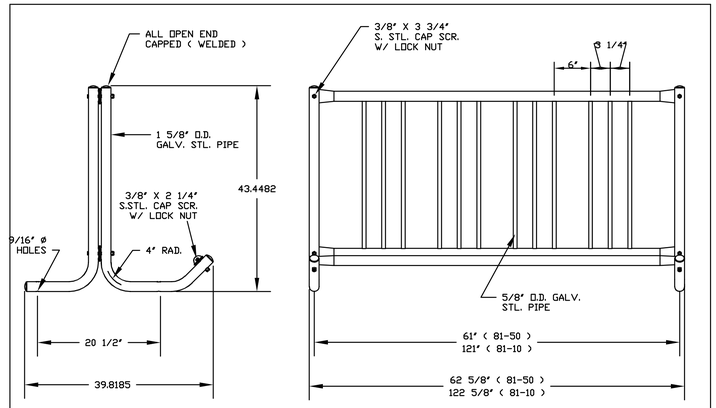
STANDARD PARKING STALL

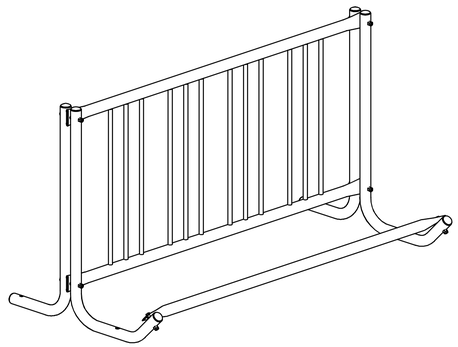
NOT TO SCALE



BITUMINOUS CONCRETE CURB (BCC)

NOT TO SCALE





NOTES:
1.) ALL STL. MEMBERS GALVANIZED.
WELDS COATED WITH ZINC-RICH FINISH.
2.) 1/2" X 5 1/2" EXPANSION ANCHOR BOLTS PROVIDED.

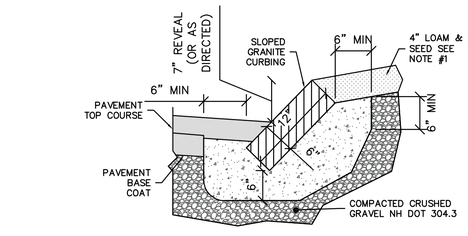
LENGTH OPTIONS
☐ 5' RACK
☐ 10' RACK

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE	TITLE : SINGLE-SIDE ENTRY BIKE RACK
DATE DRAWN : 3/22/94	
DRAWN BY : CDC	REV. C
DATE REV. : 7/9/02	DRAWING NUMBER 81 SERIES
REV. BY : CDC	SHEET 1 OF 2

BIKE RACK DETAIL

NOT TO SCALE



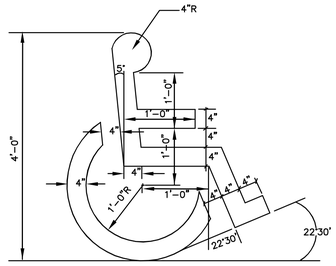
SLOPED GRANITE
CURB

RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET 1/2" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

CITY OF DOVER D-8 GRANITE CURB DETAIL

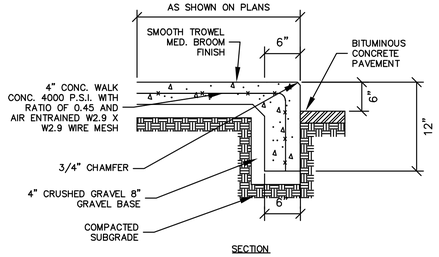
NOT TO SCALE



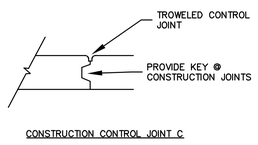
PAINTED

ACCESSIBLE PARKING SYMBOL

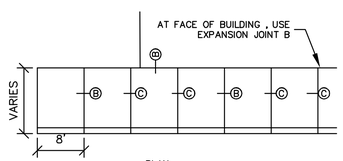
NOT TO SCALE



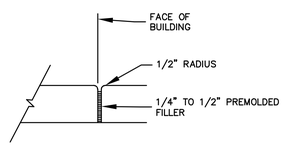
SECTION



CONSTRUCTION CONTROL JOINT C



PLAN



EXPANSION JOINT B

CONCRETE WALKWAY WITH MONOLITHIC CONCRETE CURB

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: N.T.S.
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY: SJH
PROJECT NO: 18043
FILE: SITE

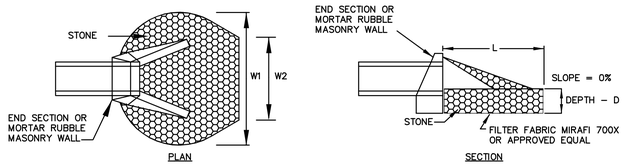
PLANNING FILE NO.: SITE-2025-0007

DETAILS

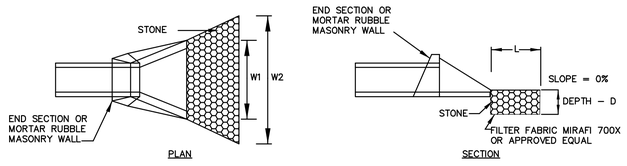
WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

15



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO DEFINED CHANNEL



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO FLAT AREA, NON DEFINED CHANNEL

MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPE'S. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

STONE GRADATION

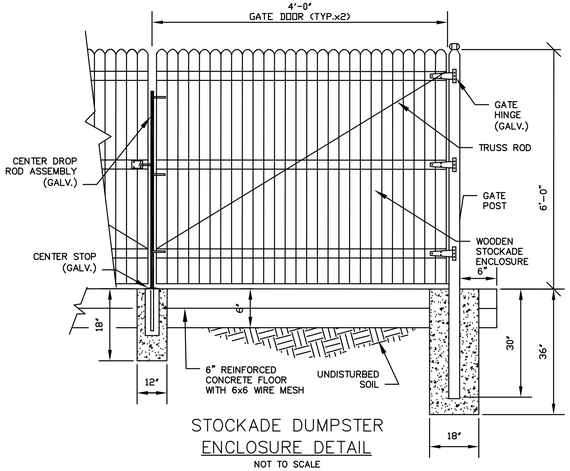
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

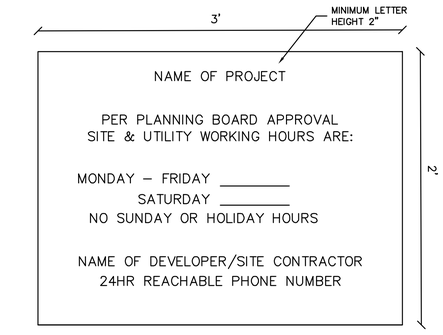
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET FROM	W1(ft)	W2(ft)	L(ft)	D (ft)	D50(IN)	CHANNEL TYPE
PCB7	4	22	19	1.5	9	UNDEFINED
PDMH5	3	10	16	1	6	UNDEFINED
BIO-RETENTION W/ISR	5	16	11	1	6	UNDEFINED

RIP RAP OUTLET PROTECTION
NOT TO SCALE

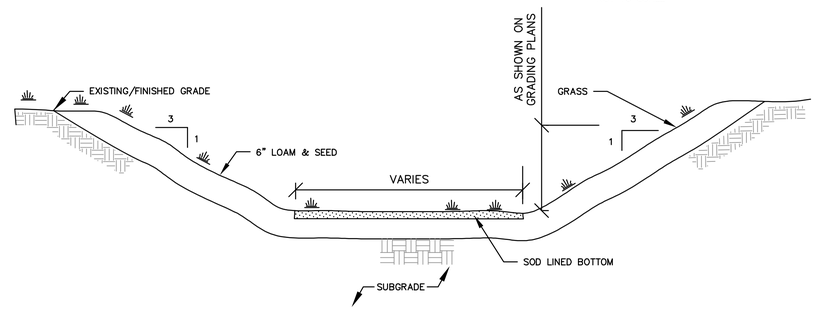


STOCKADE DUMPSTER
ENCLOSURE DETAIL
NOT TO SCALE



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

CITY OF DOVER D-2
CONSTRUCTION SIGN
NOT TO SCALE

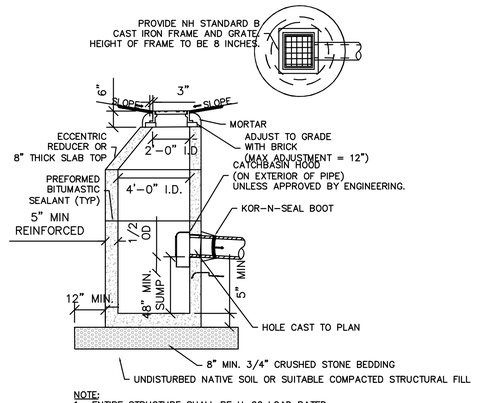


MAINTENANCE

TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION, HOWEVER IT SHOULD NOT BE MOWED TOO CLOSELY, MAINTAIN A MINIMUM 4" STAND OF VEGETATION. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.

THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

GRASS LINED CONVEYANCE SWALE DETAIL
NOT TO SCALE

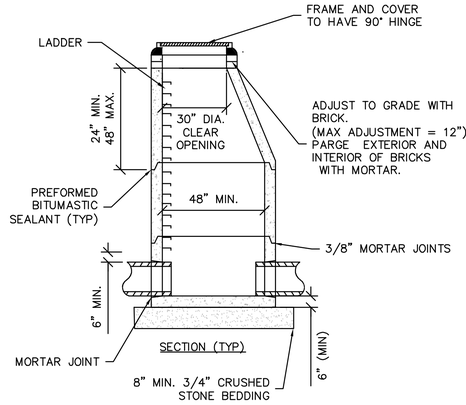


NOTE:
1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.

CITY OF DOVER D-19
CATCHBASIN DETAIL
NOT TO SCALE

SPECIFICATIONS

1. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION"; HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS".
2. STORM DRAINS SHALL BE ADS N12 OR APPROVED EQUAL, AND SHALL BE JOINTED WITH NEOPRENE "O" RINGS.
3. CATCH BASINS AND MANHOLES SHALL BE PRE-CAST REINFORCED CONCRETE DESIGNED BY AN ENGINEER REGISTERED IN NEW HAMPSHIRE, AND ABLE TO WITHSTAND LOADINGS OF 8 TONS (H20 LOADING).
4. MANHOLES SHALL HAVE CAST IRON FRAMES AND COVERS WITH 30" INSIDE DIAMETER OPENINGS. A 3-INCH (MINIMUM) LETTER "D" FOR DRAIN SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
5. CATCH BASINS AND MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK. MAXIMUM ADJUSTMENT TO GRADE SHALL BE 12 INCHES. FRAMES SHALL BE SET ON A FULL BED OF MORTAR, TRUE TO GRADE AND CONCENTRIC WITH THE MASONRY. ALL VOIDS BETWEEN THE TOP OF THE STRUCTURE AND THE BOTTOM FLANGE OF THE FRAME SHALL BE COMPLETELY FILLED TO MAKE A WATERTIGHT FIT. A RING OF MORTAR AT LEAST ONE INCH THICK AND PITCHED TO SHED WATER AWAY FROM THE FRAME, SHALL BE PLACED OVER AND AROUND THE OUTSIDE OF THE BOTTOM FLANGE. THE MORTAR SHALL EXTEND TO THE OUTER EDGE OF THE MASONRY ALL AROUND ITS CIRCUMFERENCE AND SHALL BE FINISHED SMOOTH. NO VISIBLE LEAKAGE WILL BE PERMITTED.
6. INVERT CHANNELS OF SEWER MANHOLES SHALL BE FORMED SMOOTHLY TO THE LARGEST PIPE RADIUS. CHANGES IN GRADE SHALL BE FORMED SMOOTHLY AND EVENLY. THE FLOOR OF THE STRUCTURE OUTSIDE THE CHANNELS SHALL BE SLOPED TOWARDS THE CHANNELS AT APPROXIMATELY 1/2 INCH PER FOOT. THE FLOOR AT THE CHANNEL SHALL MATCH THE CROWN OF THE LARGEST PIPE.
7. TRENCH CONSTRUCTION WILL CONFORM WITH SECTION 603.3.1 OF THE STANDARD SPECIFICATIONS (1974).
8. WOOD SHEETING OR A SUITABLE TRENCH BOX SHALL BE USED TO SUPPORT THE TRENCH AS NECESSARY. IF WOOD SHEETING IS USED, IT SHALL BE DRIVEN AT A DISTANCE OF 1 FOOT FROM THE OUTSIDE DIAMETER OF THE PIPE TO A DEPTH 6 INCHES BELOW THE INVERT OF THE PIPE. WOOD SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE, BUT NOT GREATER THAN 3 FEET BELOW THE FINISHED GRADE.
9. BEDDING SHALL CONFORM WITH SECTION 603.3.2 OF THE STANDARD SPECIFICATIONS (1974).
10. BACKFILL MATERIAL WILL CONFORM WITH SECTION 603.3.5 OF THE STANDARD SPECIFICATIONS (1974) AND, IN ADDITION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, FROZEN MATERIAL, ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. BACKFILL SHALL NOT BE PLACED ON FROZEN OR PREVIOUSLY FROZEN MATERIAL.
11. ALL BACKFILL AND BEDDING COMPACTION SHALL MEET THE REQUIREMENTS OF AASHO T 99 METHOD C. DENSITY SHALL BE 95 PERCENT. COMPACTION SHALL BE 6 INCH LIFTS FOR BEDDING AND BACKFILL TO A PLANE 1 FOOT ABOVE THE PIPE AND IN 12 INCH LIFTS THEREAFTER BY AN APPROVED MECHANICAL COMPACTOR.
12. SHOULD FROZEN MATERIAL BE ENCOUNTERED, IT SHALL NOT BE PLACED IN THE BACKFILL NOR SHALL BACKFILL BE PLACED UPON FROZEN MATERIAL. PREVIOUSLY FROZEN MATERIAL SHALL BE REMOVED AS REQUIRED BEFORE NEW BACKFILL IS PLACED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FRAMES AND GRATES DURING AND FROM THE TIME OF REMOVAL FROM THE EXISTING STRUCTURE TO AND DURING THE TIME OF RESETTING, AND SHALL REPLACE IN KIND ANY DAMAGED FRAMES OR GRATES AT NO ADDITIONAL COMPENSATION.
14. ALL TRENCHES WILL BE COVERED AND DEBRIS, INCLUDING ANY REJECTED MATERIALS, SHALL BE REMOVED DAILY. STRICT SAFETY PRECAUTIONS SHALL BE MAINTAINED AT ALL TIMES.
15. LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE.
    A) THE CONTRACTOR SHALL, 48 HOURS PRIOR TO CONSTRUCTION, NOTIFY THE UTILITY COMPANIES AND HAVE ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION MARKED IN THE FIELD.
    B) AFTER THE UTILITIES HAVE BEEN LOCATED AND PRIOR TO CONSTRUCTION, THE CONTRACTOR WITH THE ENGINEER, SHALL LAYOUT THE PROPOSED DRAINAGE SYSTEM IN THE FIELD AND RECTIFY ANY UTILITY CONFLICTS WHICH MAY BE FOUND.
    C) ANY CONFLICTS WITH UTILITIES FOUND DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE UTILITY COMPANY AND PROPERLY RECTIFIED.
    D) THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIR FOR ANY UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY TO REPAIR ANY DAMAGES, HOWEVER, THE CONTRACTOR MAY MAKE APPROPRIATE REPAIRS WITH THE UTILITY COMPANY'S PERMISSION.
16. COMPLETE SHOP DRAWINGS FOR PIPE, MANHOLES, CATCH BASINS, FRAMES, GRATES AND COVERS SHALL BE SUBMITTED IN TRIPLICATE FOR APPROVAL BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. EACH SHOP DRAWING SHALL BE CHECKED AND INITIALIZED BY THE CONTRACTOR TO INDICATE APPROVAL BEFORE IT IS SUBMITTED TO THE ENGINEER.
17. SHOP DRAWINGS FOR FLAT CONCRETE COVERS SHALL BE STAMPED PRIOR TO SUBMISSION FOR APPROVAL BY A NEW HAMPSHIRE REGISTERED PROFESSIONAL ENGINEER.
18. BRICK MASONRY FOR SETTING FRAMES AND BRICK AND MORTAR PLUGS SHALL CONFORM TO THE STANDARD SPECIFICATION SECTION 604.2.4.



NOTE:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION.

CITY OF DOVER D-20
DRAIN MANHILE DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: N.T.S.
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE:SITE

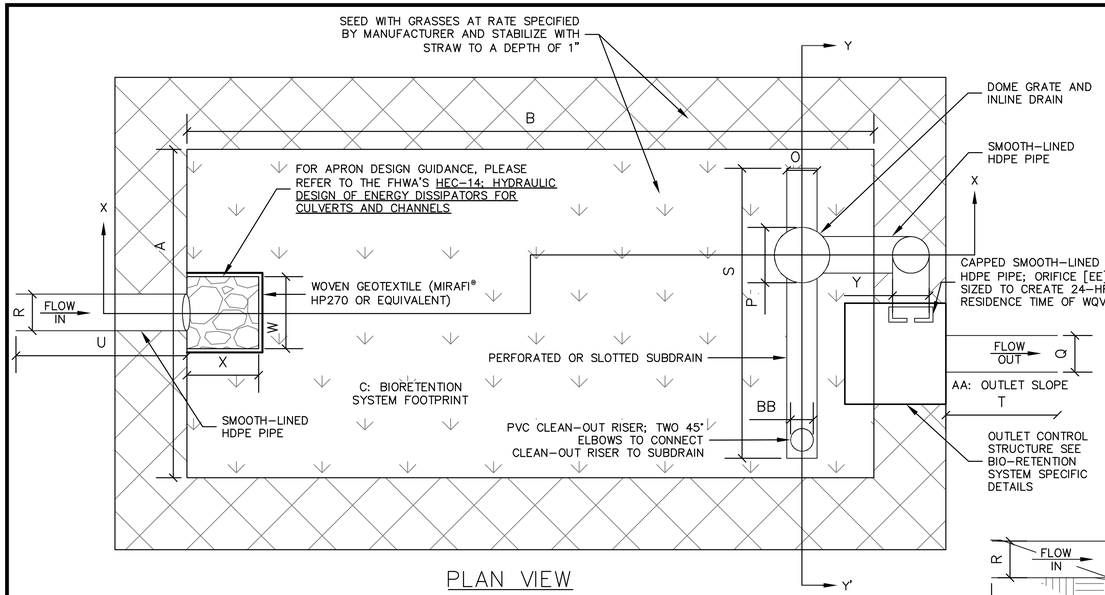
PLANNING FILE NO.: SITE-2025-0007

DETAILS

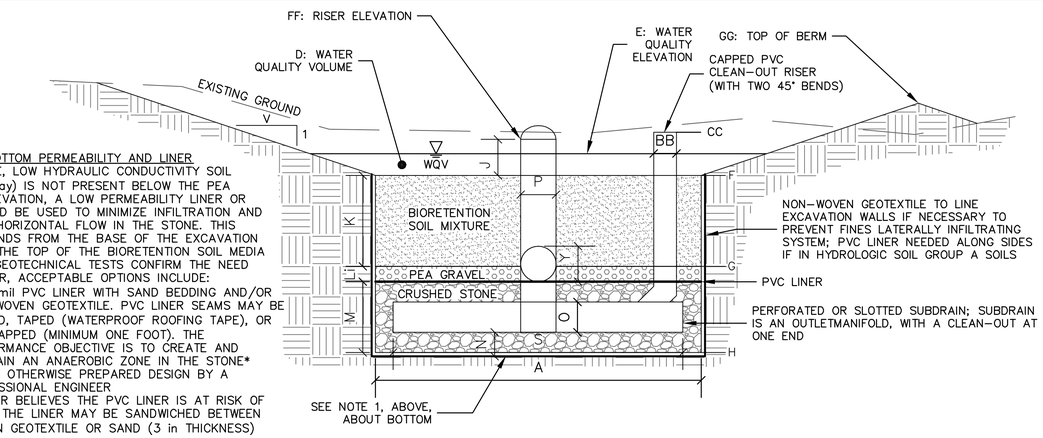
WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

16



PLAN VIEW



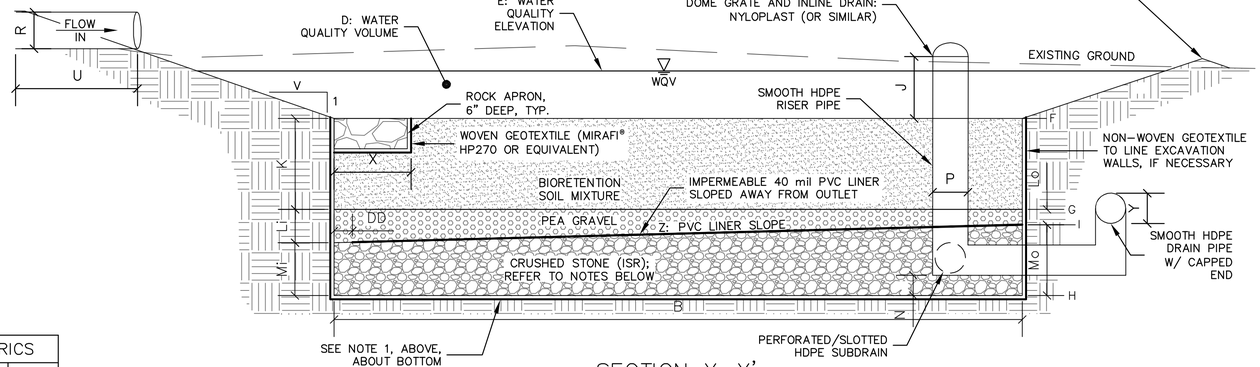
NOTE 1: BOTTOM PERMEABILITY AND LINER
IF A NATIVE, LOW HYDRAULIC CONDUCTIVITY SOIL (k≤0.03ft/day) IS NOT PRESENT BELOW THE PEA GRAVEL ELEVATION, A LOW PERMEABILITY LINER OR SOIL SHOULD BE USED TO MINIMIZE INFILTRATION AND PRESERVE HORIZONTAL FLOW IN THE STONE. THIS LINER EXTENDS FROM THE BASE OF THE EXCAVATION TO ABOVE THE TOP OF THE BIORETENTION SOIL MEDIA LAYER. IF GEOTECHNICAL TESTS CONFIRM THE NEED FOR A LINER, ACCEPTABLE OPTIONS INCLUDE:

a. A 40 mil PVC LINER WITH SAND BEDDING AND/OR NON-WOVEN GEOTEXTILE. PVC LINER SEAMS MAY BE WELDED, TAPED (WATERPROOF ROOFING TAPE), OR OVERLAPPED (MINIMUM ONE FOOT). THE PERFORMANCE OBJECTIVE IS TO CREATE AND MAINTAIN AN ANAEROBIC ZONE IN THE STONE*
b. OR AN OTHERWISE PREPARED DESIGN BY A PROFESSIONAL ENGINEER

*IF ENGINEER BELIEVES THE PVC LINER IS AT RISK OF PUNCTURE, THE LINER MAY BE SANDWICHED BETWEEN NON-WOVEN GEOTEXTILE OR SAND (3 in THICKNESS)

SECTION Y-Y'

NOTE: ADDITIONAL OUTLET STRUCTURES ABOVE THE ELEVATION OF THE WQV OR DESIGN VOLUME MAY BE NECESSARY TO CONVEY LARGE FLOWS.



SECTION X-X'

NOTES:

1. FOR FULL BIORETENTION STORMWATER SYSTEM SPECIFICATIONS, PLEASE REFER TO THE UNH STORMWATER CENTER'S BIORETENTION SPECIFICATIONS PUBLICATION, DATED FEBRUARY 2017, FOUND AT: https://www.unh.edu/unhsc/sites/default/files/media/unhsc_bsm_spec_2-28-17_0.pdf
2. SYSTEM FOOTPRINT NEED NOT BE RECTANGULAR, ANY SHAPE IS POSSIBLE. THESE DETAILS USE THE RECTANGULAR SHAPE AS AN EXAMPLE.
3. THESE DETAILS ARE NOT TO SCALE; FOR DIMENSIONS AND SPECIFICATIONS, REFERENCE EACH LETTER TO THE TABLE OF METRICS.
4. BIORETENTION SOIL MIX SHALL NOT BE PLACED UNTIL AFTER ENGINEERING APPROVAL AND INSPECTION OF SUBGRADE.
5. BIORETENTION SYSTEM IS RECOMMENDED TO HAVE PRETREATMENT (FOREBAY, SWALE, OR OTHER APPROVED STRUCTURE). PRETREATMENT IS REQUIRED FOR PROJECTS REQUIRING ALTERATION OF TERRAIN (AOT) PERMITTING.
6. PLANT THE SYSTEM AS SPECIFIED; AT A MINIMUM, SEED THE SYSTEM FLOOR AND SIDE SLOPES WITH RYE GRASS MIXTURE CONTAINING PERENNIAL AND WINTER RYES, AT A RATE SPECIFIED BY THE MANUFACTURER. STABILIZE THE SLOPES WITH STRAW TO A DEPTH OF 1".
7. GENERAL CONSTRUCTION GUIDELINES:
   - 7.1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, ASPHALT/CONCRETE LAYERS OR CHUNKS. CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, SOLID WASTE, OR ACID HAS BEEN DEPOSITED IN PLANTING SOIL (BIORETENTION MEDIA OR LOAM ON SIDE SLOPES).
   - 7.2. PROCEED WITH PLACEMENT OF ANY SUBSURFACE MATERIALS ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
   - 7.3. COMPACT EACH BLENDED LIFT OF BIORETENTION SOIL MEDIA TO 75% OF MAXIMUM STANDARD PROCTOR DENSITY ACCORDING TO ASTM D698.
   - 7.4. GRADE SOIL MEDIA TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.
   - 7.5. LIGHTLY COMPACT FINISHED FLOOR ELEVATION AND FINISHED SLOPES USING THE BUCKET OF AN EXCAVATOR, NON-MOTORIZED ROLLER, HAND TAMP, OR OTHER MEANS, THEN ROUGHEN SURFACE WITH A RAKE TO LOOSEN SOILS BEFORE SEEDING.
   - 7.6. DO NOT COMPACT THE SUBGRADE AT THE BOTTOM OF EXCAVATION UNLESS PERMEABILITY EXCEEDS $1x10^{-5}$ cm/s
8. BIORETENTION SOIL MEDIA (BSM) MIXTURE SPECIFICATIONS:
   - 8.1. STICKS AND ROOTS SHOULD BE MINIMIZED IN THE BSM MIXTURE, AND PREFERABLY LIMITED TO NOTHING LARGER THAN 4.76 mm (0.187 in).
   - 8.2. DEBRIS AND OTHER FOREIGN MATERIALS SHOULD BE MINIMIZED.
   - 8.3. ORGANIC MATTER SHOULD MAKE UP A MINIMUM OF 3% BY VOLUME AND A MAXIMUM 8% BY VOLUME OF THE BSM.
   - 8.4. BSM MIXTURE SHOULD HAVE A SOIL REACTION pH OF 6 TO 7.
   - 8.5. CATION EXCHANGE CAPACITY (CEC) OF BSM SHOULD BE A MINIMUM OF 10 meq PFR 100 ml AT A pH OF 7.0.
9. IF BSM IS PURCHASED FROM A MANUFACTURER, BSM MIXTURE SHALL NOT CONTAIN THE FOLLOWING:
   - 9.1. UNACCEPTABLE MATERIALS: CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, ASPHALT, BRICKS, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, ACID, SOLID WASTE, OR OTHER EXTRANEOUS MATERIALS THAT ARE HARMFUL TO PLANTS.
   - 9.2. UNSUITABLE MATERIALS: STONES, ROOTS, PLANTS, SOD, CLAY LUMPS, OR POCKETS OF COARSE SAND THAT EXCEEDS A COMBINED MAXIMUM OF 5% BY DRY WEIGHT OF THE MANUFACTURED SOIL.
   - 9.3. LARGE MATERIALS: STONES, CLODS, ROOTS, CLAY LUMPS EXCEEDING 0.187 in (4.76 mm) IN ANY DIMENSION.
10. ORGANIC SOIL AMENDMENTS:
    - 10.1. NO COMPOST SHOULD BE USED IN THE PLANTING MIX (USED ON THE SIDE SLOPES AND SURROUNDING AREA) UNLESS SPECIFIED BY THE ENGINEER.
    - 10.1. SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR OF GRANULAR TEXTURE WITH 100% PASSING THROUGH A 1/2-in (13 mm) SIEVE, WITH A pH OF 3.4 TO 4.8.
    - 10.2. WOOD DERIVATIVES: SHREDDED WOOD, WOOD CHIPS, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF STONES, STICKS, SOIL, OR TOXIC MATERIAL.
11. THE CRUSHED STONE LAYER SHOULD CONSIST OF AASHTO #5 STONE (3/4-in).
12. THE VOLUME OF WATER CONTAINED ABOVE THE BSM ELEVATION AND BELOW THE HIGH FLOW SPILLWAY IS STATISTICALLY DESIGNED TO HOLD A SPECIFIC RUNOFF VOLUME.

BIORETENTION SYSTEM DESIGN METRICS

ID	DESIGN PARAMETER	MIN	BIO 1	UNITS
A	SYSTEM FLOOR WIDTH		98.5	FT
B	SYSTEM FLOOR LENGTH		63.5	FT
C	BIORETENTION FOOTPRINT AREA		6,255	SF
D	WATER QUALITY VOLUME		5,815	CF
E	WQV ELEVATION		105.12	FT
F	SYSTEM FLOOR ELEVATION		104.25	FT
G	BOTTOM BSM ELEVATION		102.75	FT
H	BOTTOM STONE ELEVATION		101.25	FT
I	TOP STONE/OUTLET INVERT ELEVATION		102.50	FT
J	PONDING DEPTH BELOW LOWEST INV.		1	FT
K	BSM MEDIA DEPTH	18	18	IN
Li	INLET END PEA GRAVEL DEPTH		6	IN
Lo	OUTLET END PEA GRAVEL DEPTH	3	3	IN
Mi	INLET END CRUSHED STONE DEPTH		12	IN
Mo	OUTLET END CRUSHED STONE DEPTH	14	15	IN
N	SUBDRAIN DEPTH ABOVE BOTTOM	4	4	IN
O	PERFORATED SUBDRAIN DIAMETER	6	6	IN
P	RISER PIPE DIAMETER	6	12	IN
Q	OUTLET PIPE DIAMETER	6	6	IN
R	INFLOW PIPE DIAMETER		N/A	IN
S	PERFORATED SUBDRAIN LENGTH		94	FT
T	OUTLET PIPE LENGTH		45	FT
U	INFLOW PIPE LENGTH		N/A	FT
V	SLOPE GRADE (RUN PER 1ft RISE)		3	FT
W	ROCK APRON WIDTH		N/A	FT
X	ROCK APRON LENGTH		N/A	FT
Y	SMOOTH LINED HDPE PIPE DIAMETER		6	IN
Z	PVC LINER SLOPE		0.40	%
AA	OUTLET PIPE SLOPE		0.9	%
BB	CLEAN-OUT RISER DIAMETER		12	IN
CC	CLEAN-OUT RISER ELEVATION		105.25	FT
DD	PVC LINER GAP	0.1*B	6.35	FT
EE	OUTLET PIPE ORIFICE DIAMETER		1.75	IN
FF	RISER ELEVATION		106.50	FT
GG	TOP OF BERM		107	FT

PARTICLE SIZE DISTRIBUTION OF IRON FILINGS

SIEVE #	% PASSING
50	100
100	85
200	15
<200	0-5

ACCEPTABLE PARTICLE SIZE DISTRIBUTION OF FINAL BIORETENTION SOIL MIX

MEDIA TYPE	SIEVE #	SIZE (in)	SIZE (mm)	% PASSING
COARSE SAND	4	0.187	4.76	100
MEDIUM SAND	10	0.079	2.00	95
FINE SAND	40	0.017	0.42	40-15
SILTS	200	0.003	0.075	10-20
CLAYS	<200	PAN	PAN	0-5

BIORETENTION SOIL MEDIA COMPONENTS:

- AMOUNTS MIXED BY TOTAL VOLUME
- 60-85% - SAND (0.5 TO 2.0 mm) (SEE SPECS ABOVE)
- 15-25% - LOAM OR TOPSOIL
- 3-8% - ORGANIC MATTER
- 0-5% - WATER TREATMENT RESIDUALS OR IRON FILINGS*

*THE FILTER MEDIA MUST BE AMENDED WITH 0.5% IRON FILINGS OR 5% WATER TREATMENT RESIDUALS. AS WELL THE IRON FILINGS SHALL NOT BE MIXED INTO THE TOP 4". THE AMENDED MATERIAL SHALL BE SIZED ACCORDING TO USACE FILTER CRITERIA FOR STABILITY. SEE IRON FILING PARTICLE SIZE DISTRIBUTION

INTERNAL STORAGE RESERVOIR (ISR) NOTES:

- THE HYBRID BIORETENTION SYSTEM HARBORS AN ANAEROBIC INTERNAL STORAGE RESERVOIR FOR NITROGEN REMOVAL.
- THE ISR IS SEPARATED BY AN IMPERMEABLE PVC LINER BETWEEN THE PEA GRAVEL AND CRUSHED STONE LAYERS.
- THE PVC LINER SLOPES FROM THE OUTLET TOWARDS THE INLET TO MAXIMIZE STORAGE RETENTION AND PROVIDE EXTRA TREATMENT/FILTER TIME VIA PLUG FLOW THROUGH CRUSHED STONE.
- DESIGN GUIDELINES FOR THE SUBSURFACE GRAVEL WETLAND SPECIFICATIONS (UNHSC, 2016) IDENTIFIED THAT THE WATER VOLUME IN THE ISR BE AT LEAST 0.26*WQV [WATER QUALITY VOLUME], OR 26% OF THE WQV.
- PVC LINER THICKNESS OF 40 TO 60 MIL, PREFERABLY SEAMLESS. IF SEAMS ARE UNAVOIDABLE, THE SEAMS SHOULD BE SEALED.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

GNE CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

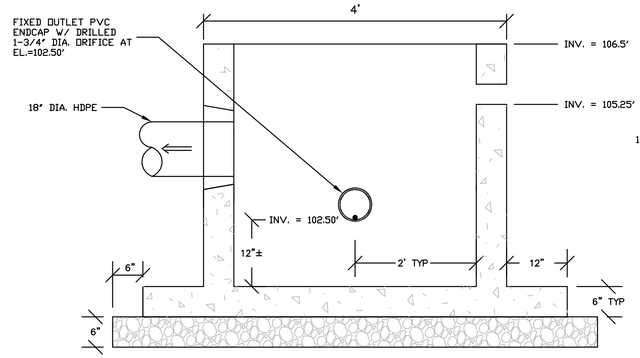
DATE: 5-29-25
SCALE: N.T.S.
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE:SITE

PLANNING FILE NO.: SITE-2025-0007

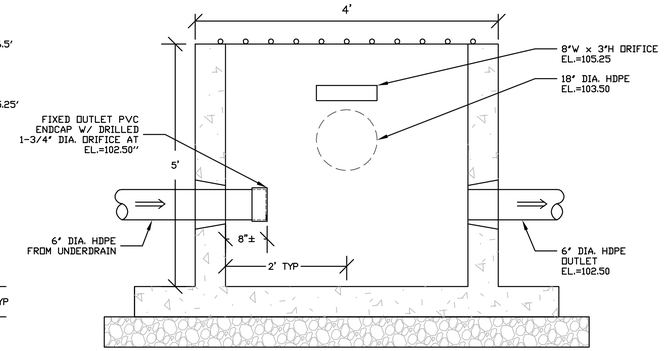
DETAILS

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH



SIDE VIEW

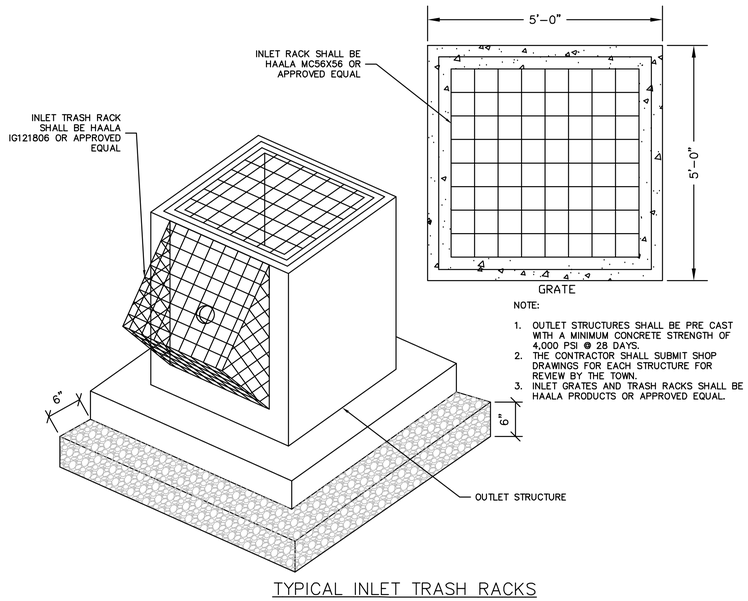


FRONT VIEW

NOTE:
1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

BIORETENTION POND 1 (BIO1) OUTLET STRUCTURE DETAIL

NOT TO SCALE

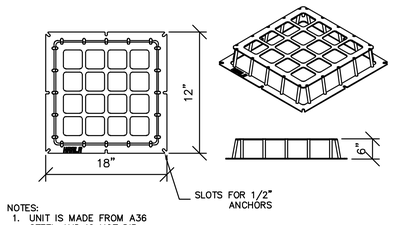


NOTE:

1. OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.
3. INLET GRATES AND TRASH RACKS SHALL BE HAALA PRODUCTS OR APPROVED EQUAL.

TYPICAL INLET TRASH RACKS

NOT TO SCALE

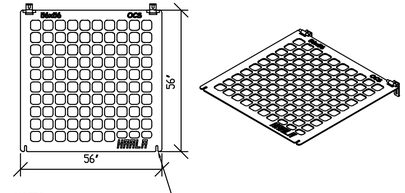


NOTES:
1. UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

SLOTS FOR 1/2" ANCHORS

HAALA IG121806

NOT TO SCALE



NOTES:
1. UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

SLOTS FOR 1/2" ANCHORS

HAALA MC56X56

NOT TO SCALE

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

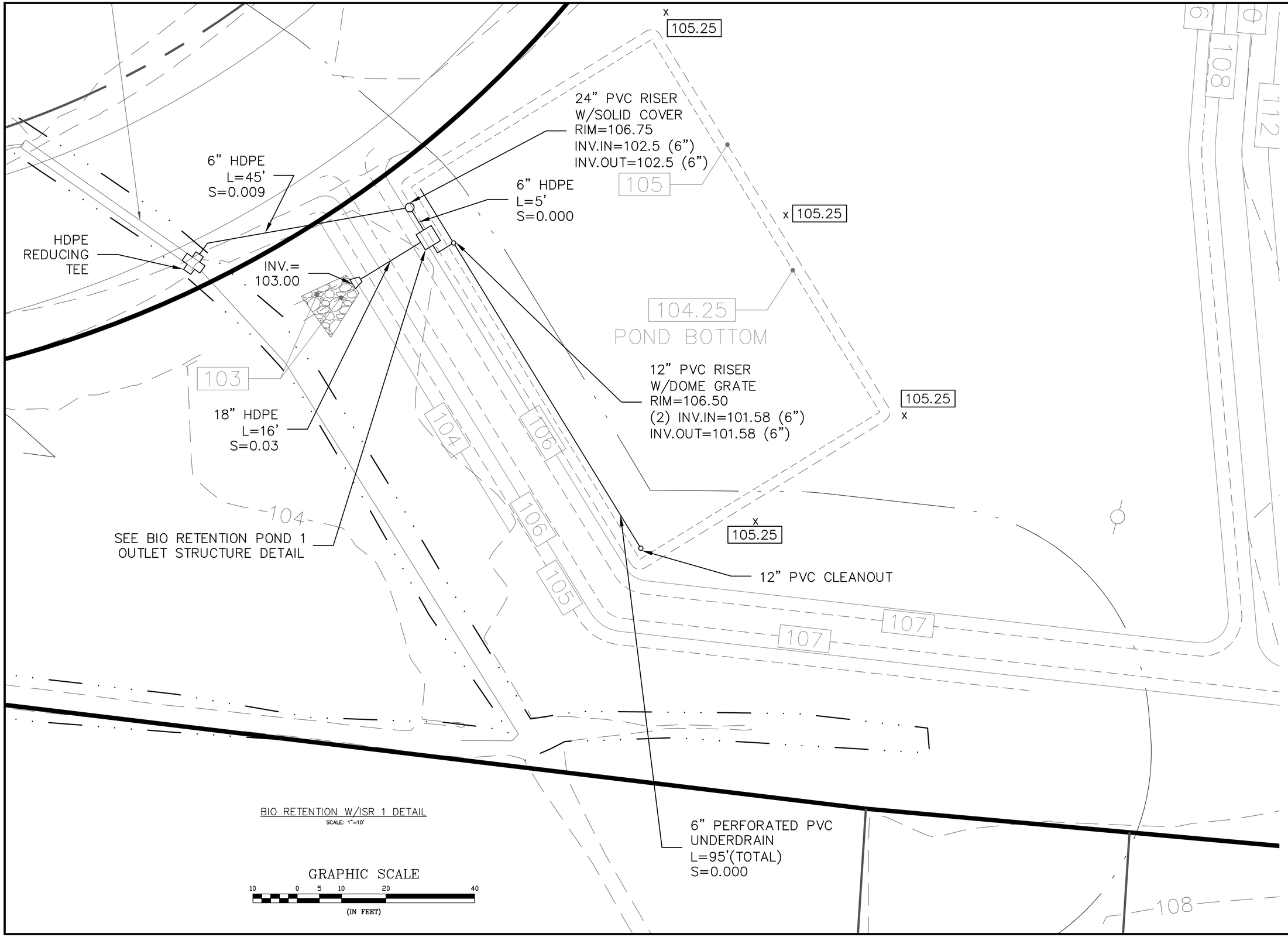
DATE: 5-29-25
SCALE: N.T.S.
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY: SJH
PROJECT NO: 18043
FILE: SITE

PLANNING FILE NO.: SITE-2025-0007

DETAILS

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820



BIO RETENTION W/ISR 1 DETAIL
SCALE: 1"=10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)

PLANNING FILE NO.: SITE-2025-0007

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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NO.	REVISION	APP'D	DATE
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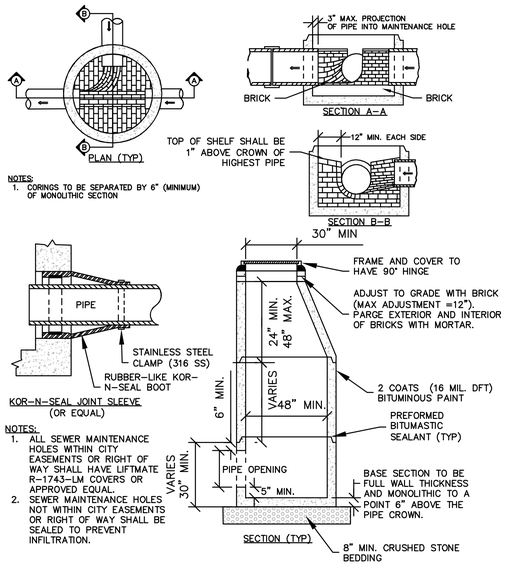
DATE: 5-29-25
SCALE: 1"=10'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY: SJH
PROJECT NO: 18043
FILE: SITE

DETAILS

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

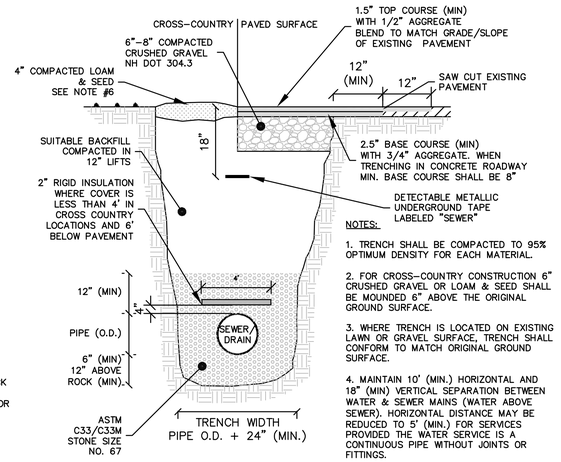
19



NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

CITY OF DOVER D-16
SEWER MANHOLE DETAIL

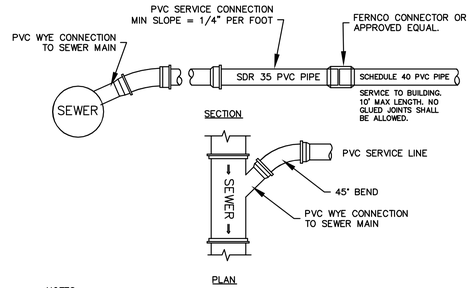
NOT TO SCALE



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 SERWCES 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.

CITY OF DOVER D-3
SEWER TRENCH DETAIL

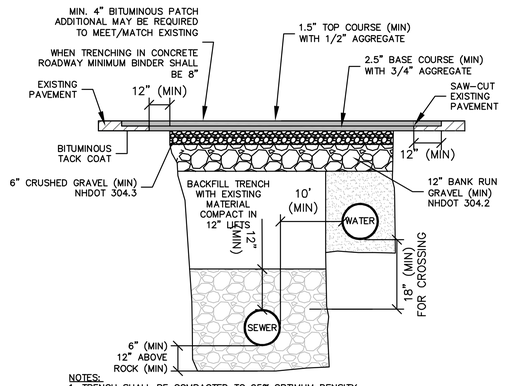
NOT TO SCALE



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

CITY OF DOVER D-17
SEWER SERVICE DETAIL

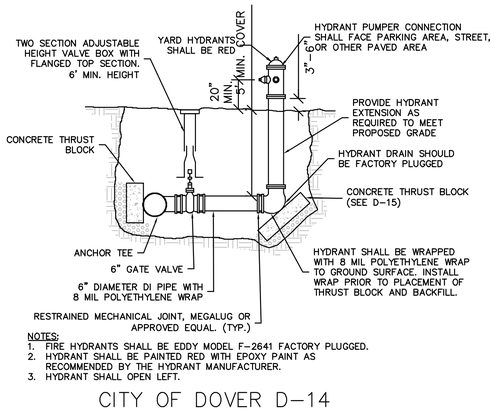
NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL

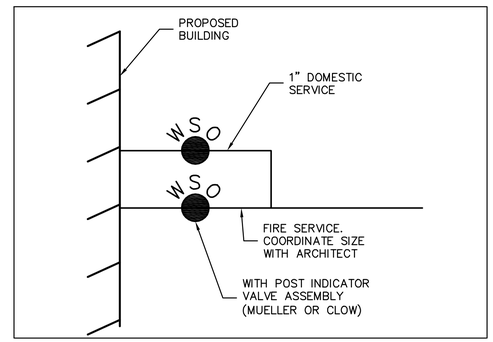
NOT TO SCALE



NOTES:
1. FIRE HYDRANTS SHALL BE EDDY MODEL F-2641 FACTORY PLUGGED.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.

CITY OF DOVER D-14
FIRE HYDRANT DETAIL

NOT TO SCALE



TYPICAL FIRE AND DOMESTIC
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE

TRELLEBORG PIPE SEALS

TRELLEBORG

Kor-N-Seal® I
Stainless Steel Wedge Connector
(WS Series)

Installation Instructions

CONNECTOR INSTALLATION

1. Check to be sure the Stainless Steel Waveband® is properly located in Connector groove.
2. Inspect the inside surface of the cored/formed hole. If there is porosity or wire-to-concrete separation, use patching or hydraulic cement to smooth the surface.
3. Insert Connector Assembly into hole with Wedge Expander at top of hole.
4. Position Connector so it is square to manhole both vertically and horizontally.
5. Tighten Wedge Expander using 1/2" socket wrench to 12 foot pounds.
6. Retorquing prior to shipment is recommended but not required.

Note if Vacuum Testing

Testing should be done prior to backfilling so that leaks can be easily located and repaired.

All lift holes need to be plugged with a nonshrinking mortar.

Plug all pipes entering the manhole, taking care to securely brace the pipes and plugs.

Patented Waveband technology "captures" the rubber between itself and the concrete, creating a more effective seal.

*Covered under US Patent No.: 5,738,389

PIPE INSTALLATION

1. Be sure sealing area of pipe is smooth and free of defects. Repair if needed.
2. Center pipe in Connector opening. (Pipe must not rest on Connector Korband)
3. Position the Pipe Clamp in the Connector's Pipe Clamp groove with the screw at the top.
4. Tighten the Pipe Clamp screw to 60 inch pounds with a T-handle Torque Wrench, P/N 80090

Note:

On minimum pipe O.D. installations, tension the rubber under the pipe clamp by lifting the rubber toward pipe clamp screw housing by hand. This will help prevent the rubber from wrinkling or folding over during tightening of hose clamp. Application of a very small amount pipe lube on the pipe clamp track will allow the pipe clamp to slide on the rubber and improve the performance of the hose clamp. Make sure to torque all screw locations on the pipe clamps.

Caution:

Do not use an impact wrench for installation.

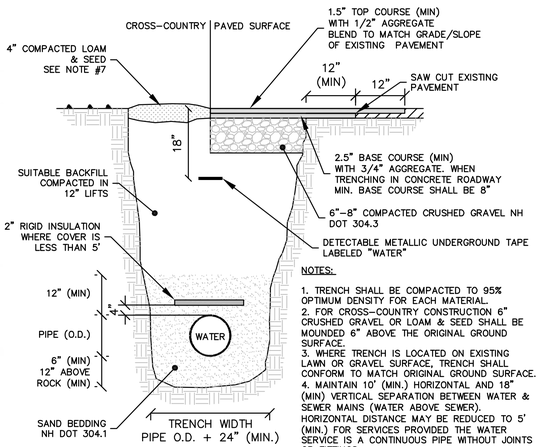
All pipe stubs must be restrained.

Adapters are required when using Corrugated Pipe. Refer to the Corrugated Pipe Adapter Data Sheet for more information.

Check calibration of torque limiters monthly

Torque limiters are available for connectors that can be used with cordless drills and hand or air ratchets.

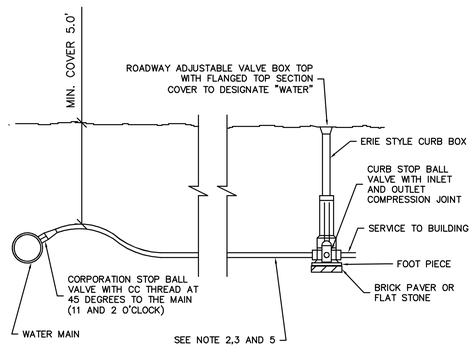
Call 800-626-2180 for information.



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. 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.
8. CLASS 52 DUCTILE IRON PIPE

CITY OF DOVER D-4
WATER TRENCH DETAIL

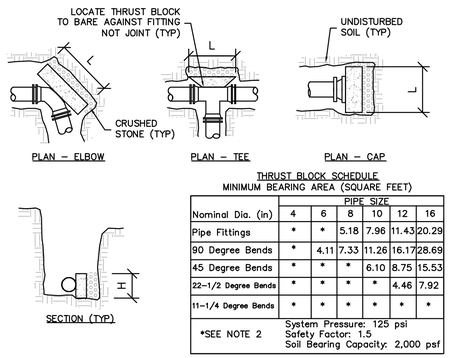
NOT TO SCALE



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. 3/4"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

CITY OF DOVER D-13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	System Pressure: 125 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'x2'x2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

CITY OF DOVER D-15
THRUST BLOCK DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

GNE
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

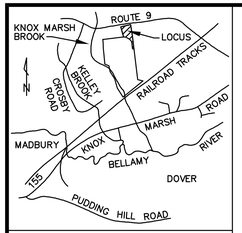
DATE: 5-29-25
SCALE: N.T.S.
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

PLANNING FILE NO.: SITE-2025-0007

DETAILS

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - GPS OBS.

50' WIDE R.O.W.
WESTFIELD ROAD

DRAINAGE DITCH (TYP.)

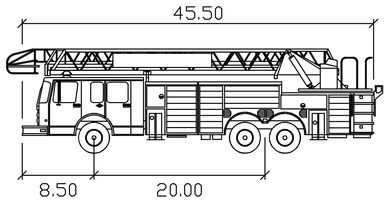
EDGE OF WETLAND (TYP.)

50' WIDE EASEMENT S.C.R.D. 5064/604

PROPOSED
BUILDING
26,880 S.F.

VARIABLE WIDTH R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9



Dover ladder

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0

FRONT WHEELS
CENTER REAR WHEELS
TRUCK BODY

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

PLANNING FILE NO.: SITE-2025-0007

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CNE
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV. PER TRC COMMENTS	SJH	7-1-25

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

TRUCK MOVEMENT PLAN

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

TAX MAP G, LOT 2
LITTLEWORTH ROAD
DOVER, NH

21

Light Industrial Facility

Littleworth Rd. Dover, NH

Civil Set

NFC - 063025

LOCUS MAP: (N.T.S.)

T | W DESIGNS
254 Drake Hill Rd. Strafford, NH
TW-Designs.com | 603.664.2181

Project Info:

Light Industrial Facility
Littleworth Rd. Dover, NH
Civil Set

Architect of Record:

T | W Designs, LLC
254 Drake Hill Rd.
Strafford, NH 03884
603-664-2181

Civil Engineer:

Civil Works NE
181 Watson Road
Dover, NH 03820
603.749.0443

Structural Engineer:

TBD

Electrical Engineer:

TBD

Mechanical Engineer:

TBD

Plumbing Engineer:

TBD

Fire Protection Eng.:

TBD

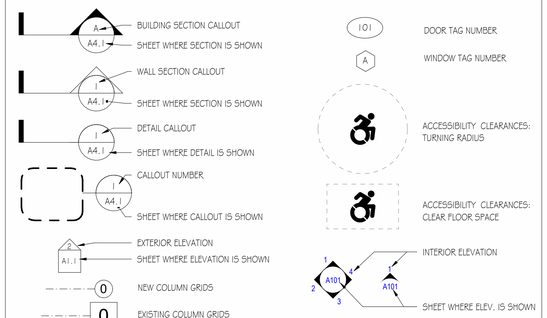
Contractor of Record:

Whitcher Builders
254 Drake Hill Rd.
Strafford, NH
603-664-5577

MASTER ABBREVIATION KEY:

AB	ANCHOR BOLT
AC	AIR CONDITIONER
ACI	AMERICAN CONCRETE INSTITUTE
ACOUST	ACOUSTIC
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANOD	ANODIZED
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BD	BOARD
BIT	BITUMINOUS
BL	BUILDING LINE
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOC	BOTTOM OF CURB
BOF	BOTTOM OF FOOTING ELEVATION
BOT	BOTTOM
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
BTW	BETWEEN
BUR	BUILT-UP ROOF
CAB	CABINET
CB	CATCH BASIN
CER	CERAMIC
CF	CUBIC FOOT
CI	CAST IRON
CJ	CONTROL JOINT
CL	CLOSET
CLCB	CURBLESS CATCH BASIN
CLG	CEILING
CM	CONTRACT MANAGER
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMP	COMPACTED (COMPOSITION)
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORR	CORRUGATED
CP	CONTROL PANEL
CSG	CASING
CSMT	CASEMENT
CT	CERAMIC TILE
CTR	CENTER
CY	CUBIC YARD
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DS/C	DRIVE SIDE OF CURB
DTL	DETAIL
DWG	DRAWING
E	EAST
EJ	EXPANSION JOINT
EJC	EXPANSION JOINT COVER
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EMERGENCY ROOM
EST	ESTIMATE
EWC	ELECTRICAL WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXPD	EXPANDED
EXT	EXTERIOR
F/F	FACE OF FOUNDATION WALL
FA	FRESH AIR
FAP	FIRE ALARM PANEL
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FIN	FINISH
FL	FLOW LINE
FLR	FLOOR
FND	FOUNDATION
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FR	FIRE RATED
FS	FULL SIZE
FT	FOOT
FTG	FOOTING
FUR	FURRED (FURRING)
FVC	FIRE VALVE CABINET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GLASS
GLZ	GLAZING
GRD	GRADE
GYP	GYPSUM
H/V	HEATING & VENTILATING
HC	HANDICAP
HDWD	HARDWOOD
HGT	HEIGHT
HM	HOLLOW METAL
HP	HIGH POINT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWH	HOT WATER HEATER
ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
JC	JANITOR'S CLOSET
JST	JOIST
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEM	MEMBRANE
MEP	MECHANICAL, ELECTRICAL, PLUMBING
METTP	METAL TOILET PARTITION
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL
MULL	MULLION
N	NORTH
NAT	NATURAL
NEC	NECESSARY
NIC	NOT IN CONTRACT
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF/C	OUTSIDE FACE OF CONCRETE
OH	OVERHEAD
OPG	OPENING
OPP	OPPOSITE
OR	OPERATING ROOM
PBD	PARTICLE BOARD
PCF	POUNDS PER CUBIC FOOT
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PTD	PAINTED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
QT	QUARRY TILE
R	RADIUS
R/A	RETURN AIR
RC	REINFORCED CONCRETE
RD	ROOF DRAIN
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCE
REQD	REQUIRED
RGH	ROUGH
RL	RAIN LEADER
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RQMT	REQUIREMENT
S	SOUTH
S-TRAP	SEDIMENT TRAP
SC	SOLID CORE
SCED	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FOOT
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SL	SLIDING
SMR	SINGLE PLY MEMBRANE ROOF
SP/PT/FIN	SPECIAL PAINT FINISH
SPEC	SPECIFICATION
SPKR	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRG	STRINGER
STRUCT	STRUCTURAL
SU	SITE UTILITY
SUSP	SUSPEND (SUSPENDED)
SYMM	SYMMETRICAL
SYS	SYSTEM
T	TREAD
T&G	TONGUE & GROOVED
T/FRM	TOP OF FRAME
T/SLB	TOP OF SLAB
TB	TACKBOARD
TEL	TELEPHONE
TEMP	TEMPORARY
TERR	TERRAZZO
THK	THICK
THLD	THRESHOLD
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOS	TOP OF SLAB
TOW	TOP OF WALL ELEVATION
TR	TO REMAIN
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
UOD	UNDERSIDE OF DECK
UON	UNLESS OTHERWISE NOTED
UR	URINAL
UV	UNIT VENTILATOR
VAR	VARIES OR VARIABLE
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VNR	VENEER
VOL	VOLUME
W	WEST
W/	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WGL	WIRE GLASS
WP	WEATHERPROOF (WATERPROOFING)
WWF	WELDED WIRE FABRIC

GRAPHIC SYMBOLS LEGEND



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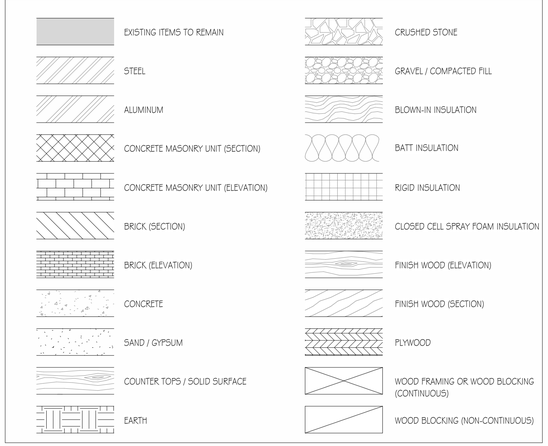


DRAWING SHEET INDEX:

Sheet	Sheet Name	Issued	Revision	Revision Date
PCS	*PROJECT COVER SHEET*	*N.F.C.*		
A1.1	*FLOOR PLAN*	*N.F.C.*		
A3.1	*EXTERIOR ELEVATIONS*	*N.F.C.*		
A9.1	*FRONT RENDERING*	*N.F.C.*		

GENERAL NOTES:

1. DO NOT SCALE DRAWING OR DIMENSIONS. FOR MISSING DIMENSIONS OR DIMENSIONS IN CONFLICT, CONTACT THE CONTRACTOR IMMEDIATELY BEFORE CONTINUING WITH WORK.
2. ANY DISCREPANCIES IN THESE PLANS WILL BE BROUGHT TO THE CONTRACTOR'S ATTENTION IN WRITING IMMEDIATELY
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DESIGN-BUILD PLANS AND SPECIFICATION FOR LOCATIONS OF ALL BLOCK OUTS, INSERTS, OPENINGS, CURBS, BASES, & PADS THAT ARE NOT DIMENSIONED OR SHOWN ON CONTRACTOR'S DWG'S. OR STRUCTURAL DWG'S.
4. STRUCTURAL STEEL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION PLANS AND SPECIFICATION SHALL BE PROVIDED AND ARE THE RESPONSIBILITY OF THERE RESPECTIVE SUBCONTRACTORS IF NOT CARRIED IN ARCHITECTURAL SERVICES
5. ALL CONSTRUCTION SHALL CONFORM TO AND BE IN ACCORDANCE WITH THE REGULATOR REQUIREMENTS MANDATED BY ALL FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN ACCORDANCE TO THE STATE IN WHICH THE WORK IS PERFORMED (STATE BUILDING CODE, STATE LIFE SAFETY & FIRE CODE ETC.)
6. THE CONTRACTOR SHALL REVIEW ALL DOCUMENTS AND VERIFY ALL DIMENSIONS AND FIELD CONDITIONS, AND SHALL CONFIRM WORK IS BUILDABLE AS SHOWN. ANY CONFLICTS OR OMISSIONS, ETC. SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE ARCHITECT FOR CLARIFICATION
7. DIMENSIONS ARE FROM EXTERIOR FACE OF FOUNDATION, VENEER, OR WALL STUD AND TO CENTER OF ALL INTERIOR STUD WALLS OR FACE OF INTERIOR MASONRY. UNLESS NOTED OTHERWISE.
8. CLEAR DIMENSIONS ARE FROM FACE TO FACE OF WALL FINISH. UNLESS NOTED OTHERWISE
9. REFER TO MECHANICAL DRAWINGS / SPEC. FOR ALL SIZES AND LOCATIONS OF MECHANICAL DUCT WORK.
10. UNLESS OBVIOUSLY SHOWN OTHERWISE, DOOR LOCATIONS NOT DESIGNATED BY WRITTEN DIMENSION SHALL BE CENTERED IN THE WALL OR SHALL BE LOCATED FOUR (4) INCHES FROM FINISH WALL TO EDGE OF DOOR JAMB. PER PLAN.
11. PROVIDE METAL CORNER BEAD AT ALL OUTSIDE CORNERS OF PLASTERED OR DRYWALL SURFACES, UNLESS NOTED OTHERWISE.
12. PENETRATIONS OF ALL FIRE RATED ASSEMBLIES SHALL BE PROTECTED BY LIKE RATED CONSTRUCTION DAMPERS, SEALANTS, COLLARS, ETC., TYPICAL.
13. CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESS PANELS AS REQUIRED AFTER INSTALLATION OF MECHANICAL DUCTS, PLUMBING AND ELECTRICAL WORK, FIRE RATED AS REQUIRED.
14. FURNISH AND INSTALL SOLID BLOCKING BEHIND ALL WALL HUNG MILLWORK ITEMS, RAILS, FIXTURES,GRAB BARS, ETC., WHERE INDICATED OR REQUIRED.
15. CONTRACTOR SHALL LAYOUT OR MARK, ALL EQUIPMENT, SYSTEMS AND MILLWORK ON THE FLOOR FOR ARCHITECT OR OWNER'S APPROVAL PRIOR TO BEGINNING CEILING / OVER HEAD WORK.
16. ALL SPRINKLER HEAD LOCATIONS, MAINS, BRANCHES AND RISER PIPE LOCATIONS MUST BE COORDINATED WITH THE DESIGN / BUILD CONTRACTOR PRIOR TO WORK.
17. FURNISH AND INSTALL FIRE EXTINGUISHERS IN TYPE, QUANTITY, AND LOCATION PER LOCAL FIRE DEPARTMENT. TYPICAL
18. CONTRACTOR SHALL VERIFY, COORDINATE LOCATION WITH THE ARCHITECT ANY SMOKE, CARBON MONOXIDE DETECTOR OR FIRE ALARM DEVICE AS REQUIRED BY THE LOCAL FIRE DEPARTMENT.
19. FURNISH & INSTALL FIRE DAMPERS WITH FUSIBLE LOUVER WHEREVER DUCT WORK PENETRATES ONE OR TWO HOUR CEILINGS OR WALLS. TYPICAL UNLESS NOTED OTHERWISE.
20. PROVIDE PLASTER AND GYPSUM WALL BOARD CONTROL JOINTS AT 30'-0" ON CENTER FROM FLOOR TO CEILING, OR AS NOTED ON THE CONSTRUCTION DOCUMENTS. VERIFY IN FEILD WITH ARCHITECT PRIOR TO WORK.

Revision Schedule

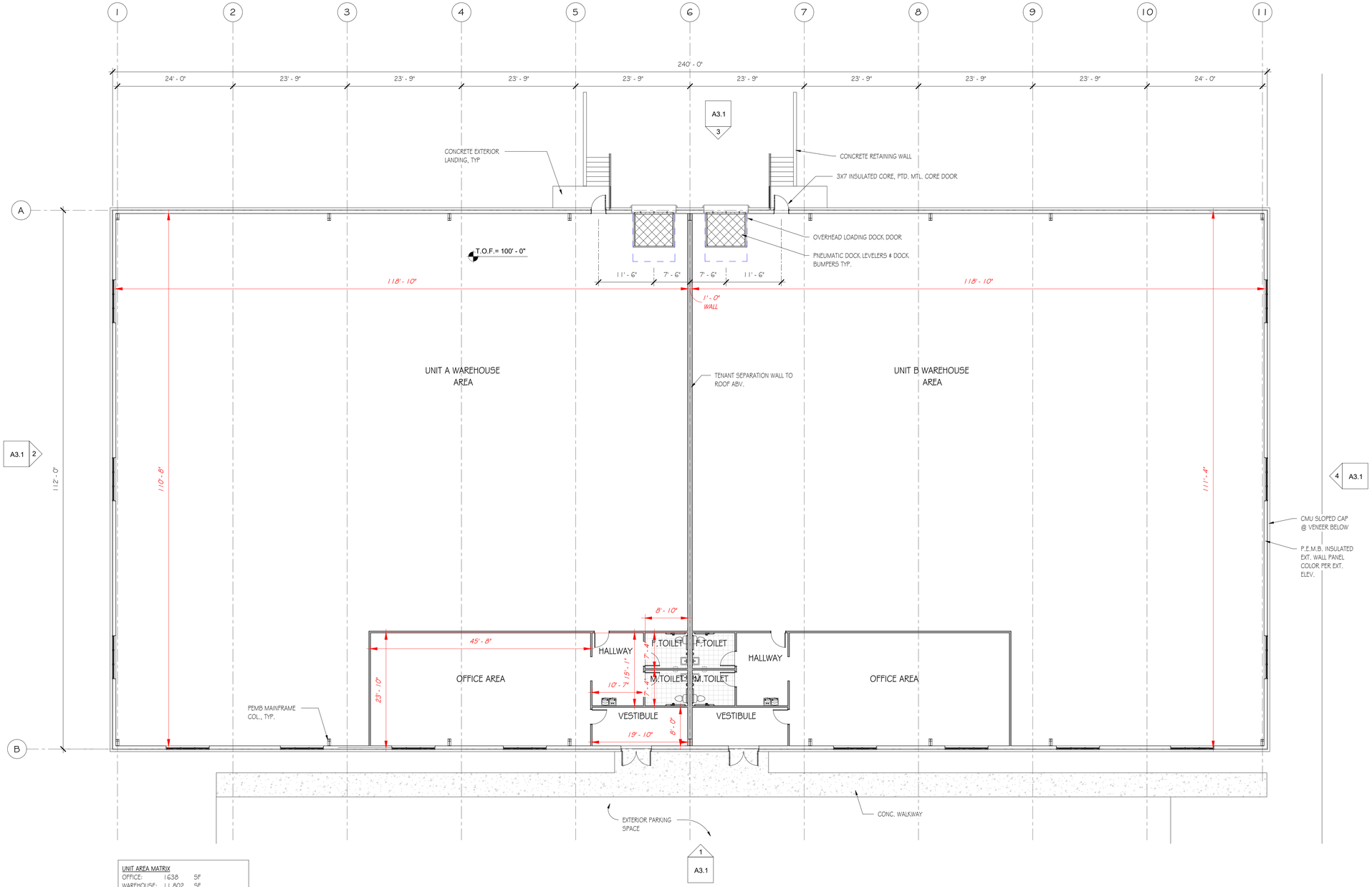
No.	Description	Date

PROJECT COVER SHEET

SHEET NUMBER

PCS

TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



UNIT AREA MATRIX

OFFICE:	1638	SF
WAREHOUSE:	11,802	SF
UNIT AREA:	13,440	SF

OVERALL BUILDING FOOTPRINT: 26,880 SF

No. | Description | Date

Revision Schedule

Project Info:

Light Industrial Facility

Littleworth Rd.
Dover, NH

Sheet Status:

Latest Release:
Issued For: Civil Set
Org. Issue Date: NFC - 063025

JOB NO:
DRAFTED: SH
CHECKED: JMT

SCALE: 3/32" = 1'-0"

Sheet Title:

FLOOR PLAN

Sheet Number:

A1.1

Printed on: 6/30/2025 10:01:45 AM

CIVIL SET
6/30/2025
10:01:45 AM

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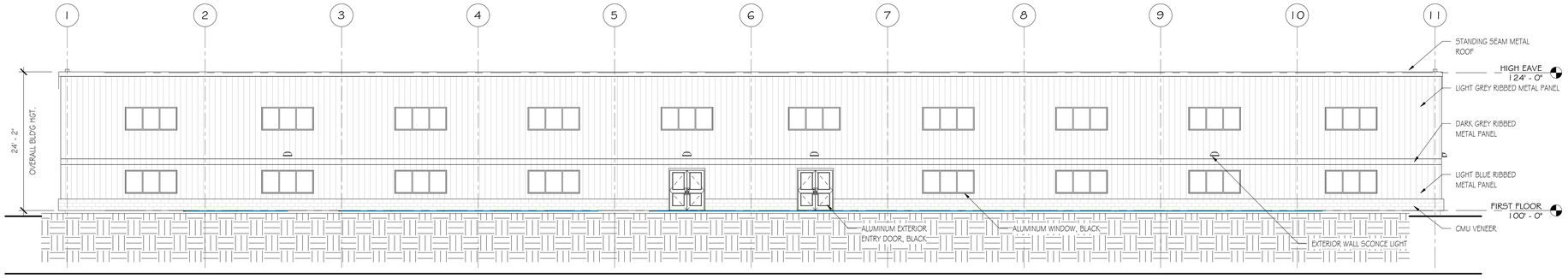
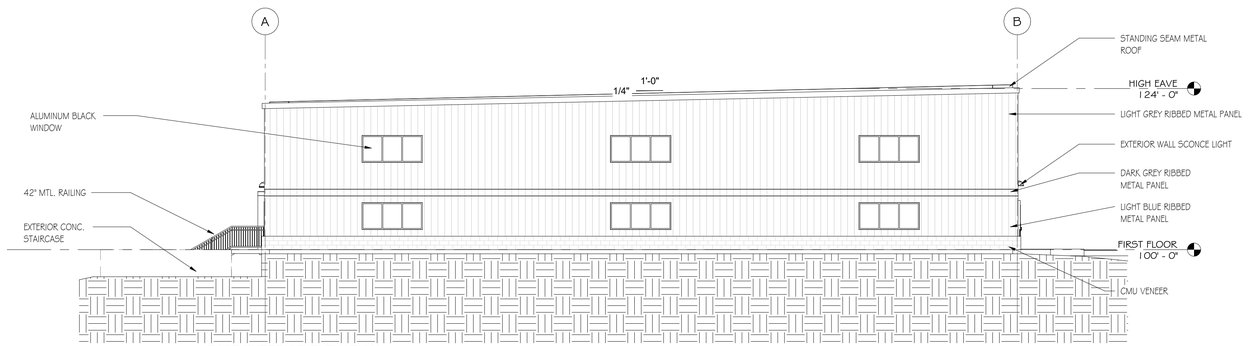
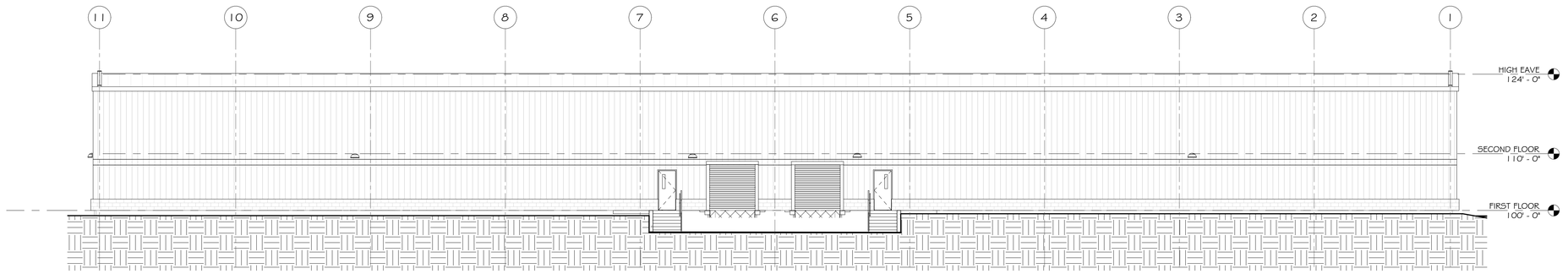
TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



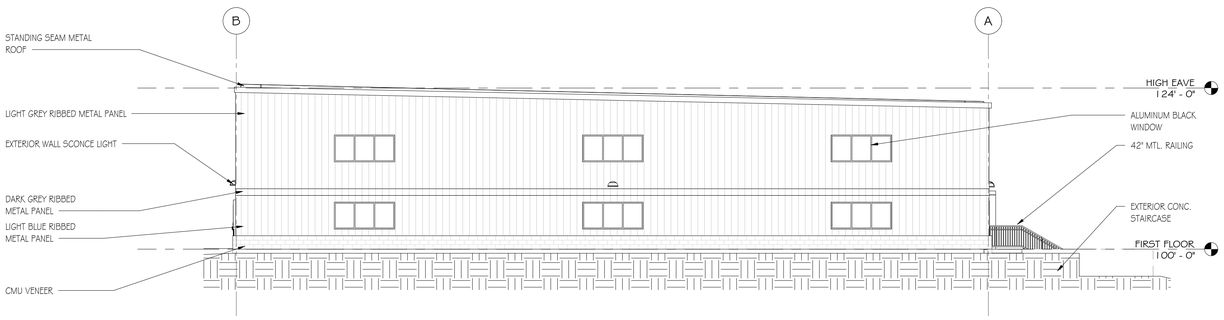
1 NORTH EXTERIOR ELEVATION
3/32" = 1'-0"



2 EAST EXTERIOR ELEVATION
3/32" = 1'-0"



3 SOUTH EXTERIOR ELEVATION
3/32" = 1'-0"



4 WEST EXTERIOR ELEVATION
3/32" = 1'-0"

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No. Description Date

Revision Schedule

Project Info:

Light Industrial Facility

Littleworth Rd.
Dover, NH

Sheet Status:

Latest Release:
Issued For: Civil Set
Org. Issue Date: NFC - 063025

JOB NO:
DRAFTED: SH
CHECKED: JMT

SCALE: 3/32" = 1'-0"

Sheet Title:

EXTERIOR ELEVATIONS

Sheet Number:

A3.1

CIVIL SET
6/30/2025
10:01:46 AM

Printed on: 6/30/2025 10:01:46 AM

Light Industrial Facility
Dover, NH June 30th, 2025

TW DESIGNS

SUMMIT
Land Development · Property Investment

CITY OF DOVER

CITY OF DOVER – ORDINANCE

Ordinance Number: **O – yyyy.mm.dd -**
Ordinance Title: Updating the Dover Zoning Ordinance
Chapter: 170

The City of Dover Ordains:

1. **PURPOSE**
The purpose of this ordinance is to amend Chapter 170 of the Code of the City of Dover, entitled Zoning, by updating the Code to reflect changes in the community and in land use regulations.

2. **AMENDMENT**
Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Commercial District (C) Table of Uses, by amending the solar/green roof standards under footnote 8, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.
• ~~Commercial and mixed-use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~
• ~~Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area~~.

3. **AMENDMENT**
Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Commercial Manufacturing District (CM) Table of Uses, by amending the solar/green roof standards under footnote 9, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.
• ~~Commercial and mixed-use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~
• ~~Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area~~.

4. **AMENDMENT**
Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Innovative Technology District (I) Table of Uses, by amending the solar/green roof standards under footnote 14, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.

~~• Commercial and mixed use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~
~~• Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area~~.

5. AMENDMENT

Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Central Business, General District (CBD-G) Table of Uses, by amending the solar/green roof standards under Required Building Standards, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.
~~• Commercial and mixed use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~
~~• Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area.~~

6. AMENDMENT

Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Central Business, Mixed Use District (CBD-M) Table of Uses, by amending the solar/green roof standards under Required Building Standards, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.
~~• Commercial and mixed use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~
~~• Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area.~~

7. AMENDMENT

Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Central Business, Transit Oriented Development District (CBD-TOD) Table of Uses, by amending the solar/green roof standards under Required Building Standards, to eliminate forced installation of solar or green roofs while upholding the solar readiness standard:

"Solar/Green Roof Standard:
• All buildings ~~must~~ shall be constructed to be solar ready, ensuring that future installation of solar energy systems can be easily and effectively accommodated.
~~• Commercial and mixed use buildings that are 25,000 sq ft or more must also incorporate solar panels and/or a green roof on at least 30 percent of the roof area.~~

~~• Commercial and mixed-use buildings that are 25,000 sq. ft. or more must also incorporate solar panels and/or green roof on at least 30 percent of the roof area.~~

8. AMENDMENT

Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Heritage Residential District (HR) Table of Uses, by amending CUP criteria for the conversion or creation of a 3-4 Family Dwelling, in anticipation of the enaction of SB 284, by decreasing the mandatory parking space per-unit count to one (1):

"Conversion to, or creation of Dwelling, 3-4 Family: Three- or four-family dwellings and conversions of existing dwellings to three (3) or four (4) units shall be subject to the following regulations:

A. The specific site must have an amount of open space, either landscaped or left natural, at least equal to the average amount of open space on all developed lots in the HR District that are wholly or partly within two hundred (200) feet of the subject parcel. Existing parking areas, either gravel, paved or unpaved, shall not be considered to be open space.

B. Off-street parking, in accordance with Chapter 153, Site Review, shall be provided as to avoid vehicles backing into the street. ~~Two (2)~~ <u>One (1)</u> parking space~~s~~ per unit shall be required.

C. Parking lots shall be at least five (5) feet from a side property line and ten (10) feet from a front property line.

D. Parking areas shall be screened from the street and from abutting lots.

E. Structures shall be at least twenty (20) feet from a front property line, thirty (30) feet from a rear property line and fifteen (15) from a side property line unless abutting a street, in which case, the distance from the side property line shall be twenty (20) feet.

F. For new construction, the building must be designed to look like a SINGLE FAMILY DWELLING. At a minimum, this shall mean that only one entrance shall be visible from a public street. For conversions, the building must retain its appearance as a SINGLE FAMILY DWELLING or a 2 family dwelling, whichever is the current use. Notwithstanding any other provision of Chapter 170, a legal or legal non-conforming accessory structure existing as of the effective date of these regulations may be converted into one or more residential units, provided that the building shall not be enlarged, nor shall any exterior improvements be made to alter its appearance as an accessory structure."

9. AMENDMENT

Chapter 170 of the Code of the City of Dover, entitled Zoning, is hereby amended by revising Chapter 170-12, Urban Density Multi Residential District (RM-U) Table of Uses, by amending Special Exception criteria for the conversion or creation of a 3-4 Family Dwelling, in anticipation of the enaction of SB 284, by decreasing the mandatory parking space per-unit count to one (1):

"Conversion to, or creation of Dwelling, 3-4 Family: Three- or four-family dwellings and conversions of existing dwellings to three (3) or four (4) units shall be subject to the following regulations:

A. The specific site must have an amount of open space, either landscaped or left natural, at least equal to the average amount of open space on all developed lots in the RM-U District that are wholly or partly within two hundred (200) feet of the subject parcel. Existing parking areas, either gravel, paved or unpaved, shall not be considered to be open space.

B. Off-street parking, in accordance with Chapter 153, Site Review, shall be provided as to avoid vehicles backing into the street. ~~Two (2)~~ One (1) parking space~~s~~ per unit shall be required.

C. Parking lots shall be at least five (5) feet from a side property line and ten (10) feet from a front property line.

D. Parking areas shall be screened from the street and from abutting lots.

E. Structures shall be at least twenty (20) feet from a front property line, fifteen (15) feet from a rear property line and fifteen (15) from a side property line unless abutting a street, in which case, the distance from the side property line shall be twenty (20) feet.

F. If the units generated are restricted to the HUD Fair Market Rent rates, for Dover, criteria A and E do not apply.

10. TAKES EFFECT

This ordinance shall take effect upon passage and publication of notice as required by RSA 47:18.

AUTHORIZATION

Approved as to Funding:	Daniel R. Lynch Finance Director	Sponsored by: TBD
Approved as to Legal Form and Compliance:	Jennifer Perez Acting City Attorney	
Recorded by:	Jerrica Vansylyvong-Bizier City Clerk	

CITY OF DOVER	CITY OF DOVER – ORDINANCE
	Ordinance Number: **O – yyyy.mm.dd -** Ordinance Title: Updating the Dover Zoning Ordinance Chapter: 170

DOCUMENT HISTORY:

First Reading Date:	Public Hearing Date:
Approved Date:	Effective Date:

DOCUMENT ACTIONS:

VOTING RECORD Date of Vote:	YES	NO
Mayor, Robert Carrier		
Deputy Mayor Dennis Shanahan, Ward 5		
Councilor April Richer, Ward 1		
Councilor, Robert Warach, Ward 2		
Councilor Anthony Retrosi, Ward 3		
Councilor Debra Hackett, Ward 4		
Councilor Fergus Cullen, Ward 6		
Councilor Lindsey Williams, At Large		
Councilor Linea Nemeth, At Large		
Total Votes:		
Resolution does | does not pass.		

From: Lisa Nugent <lanugent@comcast.net>
Sent: Monday, July 21, 2025 9:01 PM
To: City of Dover - Planning <Dover-Planning@dover.nh.gov>
Cc: Shanahan, Dennis <D.Shanahan@dover.nh.gov>
Subject: Comments and Questions Regarding Agenda Item J for July 22, 2025 Planning Board Meeting

Security Notice: External sender. Use caution with hyperlinks or attachments.

Dear Planning Board Members,

I would like to submit a few comments and questions regarding Agenda Item J for your consideration.

May I ask what led to the decision to recommend granting a parking waiver for this project?

When the Conditional Use Permit for the Westfield and Terra Nova parcels was granted on June 10, 2025, two specific provisions in the approval of the RCM district gave me hope:

While it is understood that the commercial/manufacturing buildings located on **Map G lot 2** will not be integrated physically with the commercial/residential buildings located on Map 0 lot 29, both elements of the Project shall use durable materials whenever possible, with the following considerations given to the design of the commercial/manufacturing buildings:

A. Consider the context of the buildings location

i. Where visible from Littleworth Road, the buildings should include more architectural details, then those accessed/visible primarily from Crosby Road
ii. Where visible from Littleworth Road, parking should be to the side and rear of the building, so that it does not dominate the streetscape
iii. If fronting on Littleworth Road, street trees should be provided between the roadway and buildings.

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.

The exterior walls of buildings should not predominantly utilize the following materials, except as accents:

Prefabricated steel panels.
Corrugated metal.
Asphalt shingle roofs, except for period architecture.
Highly reflective glass.

As someone who strongly opposed (was not a permitted use) the Blue Bird Storage development—and sympathizes daily with my neighbors who must live across from it—I did appreciate that the developer made an effort to incorporate mill-themed architectural elements such as faux brick and design detailing that nods to Dover's heritage. It is a clear and thoughtful design that is respectful to the character of the City.

I also want to thank the Planning Board for prioritizing and enforcing parking regulations for Blue Bird Storage. I remain grateful that parking and loading/unloading are not permitted in front of the structure.

Given all this, I had hoped the same level of design consideration and parking regulation enforcement would be applied to other buildings along Littleworth Road. Unfortunately, the current proposal appears to offer no meaningful architectural detail, will be constructed of prefabricated steel and corrugated metal, and places parking directly in front—undermining the streetscape and conflicting with the stated design goals of the RCM.

From my perspective, granting a waiver prioritizes the convenience of the applicant and the tenant over the protections that should be afforded to abutters like myself.

I will attend the meeting, but I am not comfortable speaking publicly during the Planning Board Meetings, so may I ask you to have the applicant address these additional questions?

1.The agenda materials list the property as zoned "CM." This lot was recently redesignated as part of the Residential Commercial Mixed-Use (RCM) District. Why is this not reflected in the agenda?

2. The NHDOT materials included the travel impacts for 41 employees. However, as this is a light manufacturing facility, will there be additional expected traffic from commercial vehicles?

3. Will any vehicles be parked overnight on-site?

A little housekeeping:

1. May I request that the attached letter be included in the Public Property Information Documents for both the Westfield properties and for City of Dover parcels Map G 32C and 35D?

2. Lastly, I've been trying to find the specific zoning designations (e.g., B-4, I-4, or ETP) for the Westfield and Terra Nova parcels. I haven't been able to locate this information online or in the property cards. Could you please direct me to where this information can be accessed?

Thank you for your time, your attention, and your ongoing service to our community.

Warm regards,

Lisa Nugent
69 Littleworth Road
Dover, NH 03820
603-605-5685

City of Dover, New Hampshire

OFFICE OF THE CITY MANAGER

April 4, 2024

Chad Kageleiry
Westfield, LLC
340 Central Ave., # 202
Dover, NH 03820

Re: Transfer of Development Rights

Dear Chad,

This letter is a follow up to our earlier discussion regarding your ongoing development of Tax Assessor's Map G lot 2, located off Littleworth Road, Crosby Road and Industrial Park Road (via an easement).

We discussed that the City Council approved an amendment to the Development Agreement the City and your entities entered into in 2022. This amendment, approved February 14th, allows the City to partner with you in applying relief from the wetlands setbacks on Map G lot 2, and any lots created via subdivision from it (hereafter collectively known as the Westfield Property).

As noted in the Development Agreement amendment, the City will provide either fee simple conveyance or agree to an easement upon Map G lots 32C or 35D. These lots total 55 acres of land in the same watershed as the Westfield Property. The City's intention is to remove the development rights from the parcels so that those rights may be transferred to your Westfield Property. In doing so, the intent is that the local 50 foot wetlands setbacks will be nullified, and you may more intensely develop the upland upon the Westfield Property. At the same time, the City will remove the right to develop its parcels and create permanent protections for the wetlands and uplands present on those parcels.

As you finalize site plans for the commercial/industrial uses upon the Westfield Property, please set up an appointment with myself and Planning staff and we can review the steps for final approval of the relief and document the deed restrictions and relief provided.

If you have any questions, please don't hesitate to contact me with any questions.

Sincerely,

Christopher G. Parker, AICP
Deputy City Manager

EC D.Benton, AICP Director of Planning and Community Development