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, September 27, 2022**
Meeting Time:	**7:00 pm**

1. CITIZENS' FORUM

2. APPROVAL OF THE PRIOR MINUTES

- September 13, 2022 Regular Meeting Minutes
- September 21, 2022 Joint Workshop Meeting Minutes

3. OLD BUSINESS

A. Public hearing and possible vote of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC**)** Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow Self-Storage Use in the IT District.) *(P22-66/COND-2022-0018)

B. Public hearing and possible vote of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow 10,310 sf of wetland buffer impact.) *(P22-51/COND-2022-0003)

C. Public hearing and possible vote of a Site Review for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to construct five (5) storage buildings totaling 12,000 sf) *(P22-50/SITE-2022-0004)

4. NEW BUSINESS

A. Consideration and acceptance of a Conditional Use Permit for Public Service Company of New Hampshire, d/b/a Eversource Energy, Assessor's Map 24, Lot 132 & Map 25, Lots 43B & 80, zoned Gateway & R-12 and R-40, located in the utility ROW between Oak Street & Atlantic Avenue. (Proposal is to replace six deficient wooden utility poles creating 2,100 s.f of temporary wetland impact and 14,900 sf of temporary impact to wetland buffers within the Wetlands Protection & Conservation Districts). *(P22-67/COND-2022-0028)

B. Consideration and acceptance of a Minor Subdivision for Jahn H. & Susan G. Janetos, Assessor's Map N, Lot 13-F, zoned R-40, located at Gulf Road & Oak Street. (2 new lots) *(P22-68/SUBM-2022-0004)

C. Consideration and acceptance of a Conditional Use Permit for Weave Filtration, LLC, (Owners: DBIDA) Assessor's Map D, Lot 11-7, zoned IT, located at Quality Way. (Proposal is for the construction of a 23,125 sf building creating 5,075 sf of wetland buffer impact mostly associated with the grading and drainage). *(P22-48/COND-2022-0002)

D. Consideration and acceptance of a Site Review for Weave Filtration, LLC., (Owner: DBIDA) Assessor's Map D, Lot 11-7, zoned IT, located at Quality Way. (Proposal is to construct a 23,125 sf building for manufacturing with office space) *(P22-47-SITE-2022-0003)

E. Discussion and public hearing on the City's proposed Capital Improvements (CIP) FY 2024-2029. The CIP can be found on the City Web Site at www.dover.nh.gov and in the Library, City Clerk's office, and the Planning Department. *

5. STAFF COMMENT

6. MEMBER COMMENTS

7. ADJOURNMENT

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

DOVER PLANNING BOARD – MINUTES

CITY OF DOVER

Meeting Type:	Regular Meeting
Meeting Location:	City Council Chamber's 288 Central Avenue
Meeting Date:	**Tuesday, September 13, 2022**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Ken Mavrogeorge, Frank Torr, Mark Speidel, Fergus Cullen (Councilor), Erinn Kaspari, Tom Clark, George DeBoer (Alternate) and Jon Elliard (Alternate)
Members Not Present (excused): Kyle Pimental and Hayley Harmon (Vice Chair)
Members Not Present (un-excused):
Staff Present: Donna Benton, Director of Planning and Development; Mike Asciola, Assistant City Planner

G. Cruikshank called the meeting to order at 7:01 p.m. and announced Jon Elliard would be sitting in for Kyle Pimental and George DeBoer would be sitting in for Hayley Harmon but that Mark Speidel would Vice Chair this evening.

1. **CITIZENS' FORUM**
   Citizens Forum Open
   No one spoke
   Citizens Forum Closed

2. **APPROVAL OF THE PRIOR MINUTES**
   August 23, 2022 Regular Meeting Minutes
   Motion: F. Torr moved to approve the minutes. Seconded by T. Clark. Vote: U/A

3. **OLD BUSINESS**
   None

4. **NEW BUSINESS**
   A. Consideration and acceptance of a Minor Subdivision for Canney Brook Engineering and Consulting, CBF2 LLC., (Owners: Canney Brook Engineering and Consulting, CBF2 LLC. and Helen F. Preston Revocable Trust of 2009), Assessor's Map K, Lot 6, zoned R-40, located at 105 Middle Road and Back Road. (2 new lots) (P22-09)

   F. Torr and K. Mavrogeorge recused themselves from this item.

   The applicants requested a continuance to October 25, 2022.

   Motion: M. Speidel moved to continue this item to October 25, 2022. Seconded by: E. Kaspari. Vote: U/A

   B. Consideration and acceptance of a Conditional Use Permit for Unitil Granite State Gas Transmission, Assessor's Map M, Lot 47-C, zoned R-12, located at Gerrish Road. (Proposal is to construct a pipeline inspection equipment station which will impact 3,500 s.f. of wetlands.) *(P22-36)

   D. Benton introduced the proposal to construct an above ground station comprising of a pipeline internal inspection tool launcher and receiver, creating approximately 3,500 square feet of permanent wetlands impact. Unitil will construct a pipeline inspection equipment (tool launcher/receiver) station. The location is based on the location in Unitil's pipeline network, and considering adjacent easements and topography. The project will cause approximately 3,500 square feet of wetlands impact that will be compensated by an impact mitigation fee paid to NHDES.

   The applicant is an easement owner who signed the application and provided a copy of the easement deeds. In past applications by utility easement holders the land (fee) owners have not co-signed the application.

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She stated the NHDES permit application was endorsed by the Conservation Commission at their June 13, 2022 meeting.

Tracey Sweeney and Bob Schummrick, Unitil represented the application. They gave a slide presentation to describe the project and the reason for choosing this location.

Motion: F. Torr moved to accept and declared no regional impact for all three applications. Seconded by T. Clark. Vote: U/A.

Public hearing opened.
No one spoke
Public hearing closed.

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

Staff feels that the applicant considered the criteria and attempted to create minimal wetlands disturbance on the site. Existing conditions and past agricultural irrigation activities render the land area undevelopable without the issuance of a CUP.

The Planning Department recommends that the Planning Board vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:
1. Copies of the NHDES Wetlands Permit be submitted to the Planning Department and added to the plan set coversheet; and
2. Add the following notes to plan set:

2.1. Easement of Record are:
Name
Street address
Municipality, State, Zip Code
_____
Authorized Signature

2.2. Title reference for the project parcel(s) is the Strafford County Registry of Deeds, Book No. ___, Page No. ___.

2.3. Wetlands were delineated by _____, Certified Wetlands Scientist, Certification Number ____, in accordance with Chapter 170-27.1 of the Zoning Ordinance, on _____, 20___.

2.4. 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.

2.5. File # P22-36 to all sheets

2.6. Provide 2" x 2" blank space for PB Approval stamp in the lower right corner

2.7. The following federal and state permits have been issued for the subject property: (*List permit type, number and date of issuance.)*

2.8. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal.
https://www.unh.edu/unhsc/ptapp
and provide proof to the Planning Department.

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Motion: M. Speidel moved to approve the Conditional Use Permit with subsequent recommended conditions and to further find in support that all applicable regulations and legal standards have been met based off the presentation by the applicant. Seconded by T. Clark. Vote: U/A

C. Consideration and acceptance of a Conditional Use Permit for Public Service Company of New Hampshire, d/b/a/Eversource Energy, (Owners: State of NH, Nancy & William Hunt, Eric & Robyn Thompson) Assessor's Map K, Lots 1-A & 2, as well as, Assessors Map M Lots 105, 105-1, & 100-A zoned R-12 and R-40, covering various lots within the utility right of way. (Proposal is to replace five deficient utility structures/poles along the R169 Electric Transmission Line creating 8,778 s.f. of temporary wetland impact and 32,838 s.f. of combined temporary buffer impact to the Conservation and Wetland Protection Districts.) (P22-54)

D. Benton stated that the proposal is to replace five deficient utility structures/poles along the R169 Electric Transmission Line creating 8,778 s.f. of temporary wetland impact and 32,838 s.f. of combined temporary buffer impact to the Conservation and Wetland Protection Districts. The proposed Conditional Use Permit (CUP) is required in the replacement of five (5) utility structures/poles along the R169 Electric Transmission Line that have been identified as deficient during recent line inspections. The wetland and wetland buffer impacts will be temporary impacts in order to position equipment and machinery to replace the existing structures.

She stated the CUP permit application was endorsed by the Conservation Commission at their July 11, 2022 meeting.

Kris Wilkes, VHB and Matt Cardin, Eversource represented the application and described the proposal.

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

Public hearing opened.
No one spoke
Public hearing closed.

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

Planning staff feels that the applicant considered the criteria and attempted to create minimal wetlands disturbance on the site. The applicant's detailed CUP application clearly demonstrates the understanding of the requirements and compliance to the criteria of §170-27.F.(1)(a)-(e).

The Planning Department recommends that the Planning Board vote to grant final approval of the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:
1. Copies of the NHDES Permits be submitted to the Planning Department and added to the plan set coversheet; and
2. Add the following notes to plan set:

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2.1. Easement Record are:
Name
Street address
Municipality, State, Zip Code

_____
Authorized Signature

2.2. 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.
2.3. File # P22-36 to all sheets
2.4. Provide 2" x 2" blank area for PB Approval stamp in lower right hand corner
2.5. The following federal and state permits have been issued for the subject property: (*List permit type, number and date of issuance.)*
2.6. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp and provide proof to the Planning Department.

Motion: T. Clark moved that after hearing the presentation tonight, the application meets the spirit and intent of the ordinance and further moves to grant final approval of the Conditional Use Permit with the recommended conditions. Seconded by M. Speidel. Vote: U/A

D. Consideration and acceptance of a Minor Subdivision for First-Rate Real Estate Group, LLC., Assessor's Map H, Lot 32, zoned CM - Commercial Manufacturing, and located at 45 Knox Marsh Road. (1 new lot) (P22-59)

D. Benton described the proposal to subdivide the subject parcel into two parcels by a minor subdivision. The parent lot is 3.22 ± acres and the existing lots would be 0.54 ± acres and the new lot would be 2.68 ± acres. The new lot is to be accessed from Littleworth Road, while the existing lot will remain accessible from Knox Marsh Road. The lots are proposed to be serviced by municipal water and on-site sewage disposal systems. As a minor subdivision, this application did not appear before the TRC.

Kevin McEneaney, McEneaney Survey & Associates, represented the application.

Motion: F. Torr moved to accept and declared no regional impact for the application. Seconded by T. Clark. 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 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 minor subdivision with the following conditions:

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Subsequent Condition 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 #P22-59
   1.3. The stamp and signature of the LLS on the final plans
   1.4. Add 2"x2" blank square for approval stamp
   1.5. Provide access easement for sewage systems

Motion: M. Speidel moved to approve the Minor Subdivision with the recommended subsequent conditions and further found the subdivision as presented tonight met the applicable regulations and legal standards. Seconded by E. Kaspari Vote: U/A

The Vice Chair noted Items 4E, F, and G will be heard together.

E. Consideration and acceptance of a Minor Subdivision for Heron Bay Partners, LLC Assessor's Map H, Lot 4, zoned IT and RCM Overlay, located at Cielo Drive. (1 new lot) *(P06-25H)

F. Consideration and acceptance of a Conditional Use Permit Amendment for Heron Bay Partners, LLC., Assessor's Map H, Lot 4, zoned IT and RCM Overlay, located at Cielo Drive. (Proposal is to modify the CUP which was granted for the original development approval.) (P06-25G)

G. Consideration and acceptance of a Site Review using Transfer of Development Rights for Heron Bay Partners, LLC., Assessor's Map H, Lot 4, zoned IT and RCM Overlay, located at Cielo Drive. (Proposal is to construct a total of 56 units with 52 of the units by TDR in seven (7) townhouse style multi-family buildings in place of the two previously approved congregate care buildings.) *(P06-25F)

D. Benton introduced the proposed development to construct fifty-six (56) residential townhouse units in a series of eight (8) buildings. Fifty-two (52) of the units are to be achieved by acquiring Transfer Development Rights (TDR) which would not be restricted in size or HUD rates and therefore would require the full TDR fee.

The proposal is a to amend a previously approved Site Plan approval allowing a total of seventy-two (72) residential units (single family homes, duplexes, and triplexes) and seventy-two (72) congregate care units between two (2) buildings. To date sixty-nine (69) of the residential units have been constructed. The applicant is proposing an age restriction on the proposed units, however, there are no requirements or standards in the City's Site Plan Regulations that relate to age restricting the development. The applicant is also proposing a minor subdivision which will create one (1) new lot.

The development will create a new private road (Windsor Dr.) which will be part of a private roadway system which connects to Durham Rd. and Mast Rd. It will be serviced by public water and sewer. Twenty-two stand-alone parking spaces are provided in two areas for visitors and guests. This application was most recently before the Technical Review Committee on June 30, 2022.

Christopher Berry of Berry Surveying & Engineering presented the proposed development. He clarified that these units are not restricted in square footage. This updated proposal is scaled back from the original in both number of units and vertical construction. This project is now more in line with the rest of Cielo Dr.

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Mr. Berry clarified for the board why the TDR is needed since the net units are now less than the original proposal.
He clarified the reason for relocation of the underground storage.
He clarified the home owner association partnerships.
He clarified the applicant wishes to maintain the age restriction in this portion of the project.

Motion: F. Torr moved to accept all three applications and declared no regional impact for all three applications. Seconded by T. Clark. Vote: U/A.

Public hearing opened.
Richard Dolbec, 47 Cielo had concerns about the age restriction being changed and what the parking will be.

Debra Noyes, 15 Cielo sent in an email to the Chair in August with some concerns. The construction is very slow on the four-unit and some of the units which have had residents for some time still have punch lists on their homes that are not complete. Each phase is taking longer and longer. What is happening with the pond? Some are concerned about extra traffic especially from construction vehicles. There are age restriction concerns- they want to remain 55+. The amenities are supposed to be restricted- no pool access and only club house access by reservation.
Public hearing closed.

Mr. Berry addressed public comment:

- Construction timeline will be as fast as it can be.
- Parking along Cielo can be restricted if the board requests. It is not part of the project parking calculations.
- Very little change is planned for the pond.
- The dog park would not be open to the general public.

D. Benton stated that the Hannaford site is not part of this project. Should that piece be developed it would follow the same Planning Board review process.

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

The Planning Department recommends that the Planning Board vote to approve the minor subdivision with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans: - Minor Subdivision

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 #P06-25H
    1.3. The stamp and signature of the LLS on the final plans
    1.4. Revise Sheet 8 to include a header to reference plans note so that 17 and 1 are separated.
    1.5. Any outstanding fees, administrative or operational shall be paid prior to the signing of the plans

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Motion: M. Speidel moved to approve the Minor Subdivision with the recommended conditions and found that the subdivision plan met the applicable regulations and legal standards. Seconded by T. Clark. Vote: U/A

STAFF RECOMMENDATION – CUP Modification:
The Planning Board may grant Conditional Use Permits for development within the Residential-Commercial Mixed Use (RCM) Overlay District under §170-28.2.B. Conditional Use Permit as outlined in subsections (1) – (2) below:
(1) Conditional use approval may be granted by the PLANNING BOARD (RSA 674:21 II) after proper public notice and public hearing provided that the proposed project complies with the following standards:

(a) The APPLICANT demonstrates that the development complies with the design guidelines that are outlined in Chapter 153 14.2, Site Review Regulations. These guidelines encourage a context sensitive development, which encourages components that act as one project and not as two adjacent projects

(b) The APPLICANT demonstrates that the development poses no detrimental effects on surrounding properties. Potential areas of impact that need to be analyzed include, but are not limited to, vehicular traffic, noise, property value, visual blight, natural resources degradation, light pollution, and offensive emissions such as dust, odor, or smoke.

(c) The APPLICANT shall submit a Fiscal Impact Analysis as defined in Chapter 157.22.C (1) (b) Subdivision of Land. The Analysis shall demonstrate that the project is at least a cost neutral project for the City at present and ten years from the occupation.

(2) Conditional use approval shall be subject to a formal agreement between the PLANNING BOARD and the APPLICANT. Said agreement shall be recorded at the Strafford County Registry of Deeds.

Planning Staff believes the applicant's narrative related to the RCM Overlay Conditional Use Permit demonstrates compliance and conformity with subsection (1)(a)-(c). An amended Development Agreement must be drafted and approved by the applicant and City Staff to comply with subsection (2)

The Planning Department recommends the Planning Board vote to grant the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Issuance of Conditional Use Permit:
1. A Development Agreement per Chapter 170-28.2.B(2) be signed and recorded at the Strafford County Registry of Deeds.
2. The Site Plan (P06-25F) and Subdivision (P06-25H) shall be approved.
3. Any outstanding fees, administrative or operational shall be paid prior to the issuance of the conditional use permit.

Motion: M. Speidel moved to approve the Conditional Use Permit modification with the recommended conditions and finds that the applicable regulations and legal standards have been met once the Development Agreement is recorded. Seconded by E. Kaspari. Vote: U/A

STAFF RECOMMENDATION - TDR:
§170-27.2 provides for additional density to be purchased through Transfer of Development Rights. This application meets the ordinance.

The Planning Department recommends that the Planning Board vote to find the criteria of the TDR ordinance has been met with the following subsequent conditions:

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Subsequent Conditions to Be Met Prior to Granting of the TDR:

1. Approval of Site Plan (P06-25F);
2. Add note to the plan that no additional dwelling units may added to the property without Planning Board approval and note number of TDR units approved; and
3. Payment of TDR fees for each TDR unit approved.

D. Benton explained the payment process for TDR fees for the board.

Motion: M. Speidel moved to approve the TDR with the recommended conditions and found based on the presentation that all applicable regulations and legal standards have been met. Seconded by K. Mavrogeorge. Vote: U/A

STAFF RECOMMENDATION - Waivers/Relief:

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

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

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

The Planning Department recommends that the Planning Board vote to grant the waivers with the following subsequent condition:

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

1. Add a note that the Planning Board approved waivers for (1) Partial relief from no cut no disturb 30' perimeter buffer requirement of §170-27.2.G.(7) in the area of the frontage along Cielo Drive and the parking lot area which is adjacent to another small parking array off of Cielo Drive; (2) The road grade within 75' of an intersection standard of §157-32.G and found that the criteria of Chapter 153-21.A have been met.

Motion: M. Speidel moved to approve the waiver with the recommended conditions and found that the criteria of Chapter 153-21.A have been met based off the presentation. Seconded by J. Elliard. Vote: U/A

STAFF RECOMMENDATION – 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.

Planning staff believes the proposed development meets the intent and spirit of the RCM Overlay District and previously approved planned unit development. The modification from a 72 unit congregate care facility to 56 unit multifamily residential development will be of a similar impact on services and circulation.

The Planning Department recommends that the Planning Board vote to approve the Site Plan with the following subsequent conditions:

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

1. Approval of the revised CUP (P06-25G) and minor subdivision (P06-25H);
2. Revise plan and resubmit for Final Planning Board signature and then recording at the SCRD with the following revisions:
   2.1. Add owner's signature;
   2.2. Remove "Age Restricted" from title;
   2.3. Add at least two windows to the ends of the townhouse buildings;
   2.4. Add architect stamp and signature to Architectural Plan Set; and
   2.5. Add LLS signature to Sheet 8, 9, & 10 of Site Plan Set.
   2.6. Any outstanding fees to be paid prior to signing of the plans.

Subsequent Condition to Be Met Prior to Construction:

3. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director; and

Subsequent Conditions to Be Met Prior to Building Permit:

4. Payment of the water/sewer fees at time or request of service;
5. Development agreement has been recorded;

Subsequent Conditions to Be Met Prior to Occupancy:

6. Issuance of Certificate of Occupancy.
7. Payment of Impact Fees as noted in the invoice attached to the Decision Letter.
8. Surety or other form of security acceptable to the City is provide for any unfinished work.

Motion: M. Speidel moved to approve the Site Plan with the recommended conditions and further found the site plan met the applicable regulations and legal standards. Seconded by E. Kaspari. Vote: U/A

The Vice Chair noted Items 4H and I will be heard together.

H. Consideration and acceptance of a Conditional Use Permit for Knox Marsh Development, LLC, Assessor's Map 39, Lots 104 & 105, zoned G & R-12, located at 36 & 38 New Rochester Road. (Frontage build-out of 38.7%, where 60% is required *(P22-28)

I. Consideration and acceptance of a Site Review for Knox Marsh Development LLC., Assessor's Map 39, Lots 104 & 105, zoned G & R-12, located at 36 & 38 New Rochester Road. (Proposal is for construction of six single family homes behind the existing single-family homes for a total of 8 units). *(P22-27)

D. Benton introduced the proposed development to create eight (8) single family residences (SFR) condominium style development serviced by a 300' private roadway off of New Rochester Rd. The plan calls for the construction of six (6) additional single-family residences on two (2) properties (to be merged) currently containing a single-family residence each. The applicant also seeks to obtain relief from the frontage buildout requirement of the Gateway District of 60%. The proposed buildout along New Rochester Rd. is 38.7% which is what exists today.

This application was most recently before the Technical Review Committee on August 4, 2022.

Christopher Berry of Berry Surveying & Engineering presented the proposed development.

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Mr. Berry answered some questions of the board regarding details of the project including utilities and sidewalks.

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

Public hearing opened.
Bernard Taylor, 2 Willard asked some questions about the style of the proposed homes, definition of porous pavement, condo management regulations, proposed landscape, wildlife concerns, density concerns, tax concerns.

Mary Lemcke, 4 Willard agreed with the concerns mentioned above, tree removal and drainage.

Daniel Stampone, 4 Willard shared concerns about transmissible soil, storm water drainage and wildlife.

Lee Schatvet, 29 Old Rochester raised concerns about wildlife and asked about his property line, view and drainage.
Public hearing closed.

Mr. Berry addressed public comment:

- Storm water
- Porous pavement
- Density
- Two-story homes about 1400 sq ft each with single car garage and space for two vehicles out front
- Everything listed as proposed on the plan is required to be installed by the developer
- Wildlife
- This is a condo project and will have an HOA
- Transmissible soil
- Perimeter boundary lines will be staked prior to construction
- The project is privately funded- not funded by taxes
- Tree removal count is not currently available

STAFF RECOMMENDATION:
§170-20.B(1) Zoning Ordinance allows for Conditional use approval for relief from the standards herein may be granted by the PLANNING BOARD (RSA §674:21 II) after proper public notice and public hearing provided that the proposed project complies with certain standards outlined in a-i.

This plan is consistent with the criteria as described in the applicant's narrative. Due to the two (2) existing single family residences not changing besides the private roadway being constructed between the structures, no additional buildout is proposed from what exists today. The subject parcels frontage buildout is similar to that of streetscape in this area of New Rochester Road and in the character of the neighborhood.

The Planning Department recommends that the Planning vote to approve the Conditional Use Permit with the following subsequent conditions:

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Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Approval of Site Plan (P22-27);
2. A Development Agreement be entered between the applicant and the Planning Board and recording at the SCRD per Chapter 170-20.B(3).

D. Benton clarified the buildout/ frontage requirements to the board.
The board discussed additional landscaping rather than just the 6' vinyl fence.

Motion: M. Speidel moved to approve the Conditional Use Permit with the recommended conditions and further found that all applicable regulations and legal standards have been met from the applicant's presentation. Seconded by K. Mavrogeorge. Vote: U/A

STAFF RECOMMENDATION - Waivers/Relief:
§153-21 of the Site Plan Review Regulations state the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:
(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning Staff believes the applicant's rational for the waiver from 157-32.J for minimum roadway length and width meets criterion (1) and waiving such standards and requirements is not contrary to the spirit or intent of the ordinance.

The Planning Department recommends that the Planning Board 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 approved waivers for §157-32.J to allow a roadway of 300' in length where 500' is required and found that the criteria of Chapter 153-21.A have been met.

Motion: M. Speidel moved to approve the waiver with the recommended conditions and found that criteria 1 has been met. Seconded by T. Clark. Vote: U/A

STAFF RECOMMENDATION – 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.

Planning staff believes the proposed development meets the intent and spirit of the Gateway District and provides a residential development that meets the required density of the district. The proposed development is an infill style development that utilizes excess back yard areas to accommodate the six (6) new detached SFRs with minimal infrastructure improvements needed.

The Planning Department recommends that the Planning Board vote to approve the Site Plan with the following subsequent conditions:

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

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1. Approval of CUP (P22-28);
2. Planning Board acknowledge lot merger;
3. Submission of Home Owners Association documents that include the operation and maintenance for stormwater, landscaping, porous pavement, and private trash pick-up; and calculation for the reserve that will be recorded at SCRD;
4. Revise plan and resubmit for Final Planning Board signature and then recording at the SCRD with the following revisions:
   4.1. Add owner's signature;
   4.2. Remove references to 50% lot coverage minimum requirement, as it is a 50% maximum requirement;
   4.3. Add note to plan that the HOA be responsible for the lifetime maintenance of the 6' white vinyl perimeter fence; and
   4.4. Add LLS signature to Sheet 5 & 7 of Site Plan Set.
   4.5. Deer resistant evergreens be added to the northern corner

Subsequent Conditions to Be Met Prior to Construction:
5. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director; and

Subsequent Conditions to Be Met Prior to Building Permit:
6. Payment of the water/sewer investment fees at time or request of service.

Subsequent Conditions to Be Met Prior to Occupancy:
7. Issuance of Certificate of Occupancy;
8. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
9. Surety or other form of security acceptable to the City is provide for any unfinished work.
10. The project engineer meet with the HOA to review any maintenance & operation needs of the property including storm water and porous pavement
11. Proof that HOA is in place

Motion: M. Speidel moved to approve the Site Plan with the recommended conditions and further finds that all applicable regulations and legal standards have been met. Seconded by T. Clark. Vote: U/A

The Vice Chair noted Items 4J, K, and L will be heard together.

J. Consideration and acceptance of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow Self-Storage Use in the IT District.) *(P22-66/COND-2022-0018)

K. Consideration and acceptance of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow 10,310 sf of wetland buffer impact.) *(P22-51/COND-2022-0003)

L. Consideration and acceptance of a Site Review for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to construct five (5) storage buildings totaling 12,000 sf) *(P22-50/SITE-2022-0004)

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D. Benton introduced the proposed development to construct a self-storage facility contained in five (5) buildings totaling 12,000 sf in area on a vacant lot on Production Dr. The development will be serviced by public water, however no sewer or onsite septic system are proposed. Conditional Use Permits (CUP) are requested for self-storage use in the IT District (P22-66) and wetland buffer impact (P22-51) in order to develop the proposed site plan. This application was most recently before the Technical Review Committee on August 4, 2022.

The Conservation Commission conditionally endorsed the CUP on August 8, 2022 with the condition "under the provision that a note is added to the plans that indicate snow storage be located in a way that the snowmelt is directed into the deep sump catch basins with applicable signage onsite."

Steve Haight, Civil Works NE, presented the proposed development.

Motion: T. Clark moved to accept and declared no regional impact for all three applications. Seconded by M. Speidel. Vote: U/A.

Public hearing opened.
Douglas Porter, 29 Quail has concerns about the impact to his property including hours of operation, lighting, property value, vegetation buffer.

Jake Banaian, 11 Quail has concerns about wetlands/ referenced the wetlands ordinance and state wetlands regulations. He suggested a site walk with the board and the Quail drive community and storage owners. Is there a second phase to the project? The old shed was demolished, but is still on site – not removed.

Barbara Civiello, 3 Quail agreed with previous comments. She gave some historical data about the area. She asked the board to hold off on changing that area until they have met with the abutters and visited the site.

Kerryellen Vroman, 24 Quail is concerned about the environmental ramifications and property values.

Brian Frankenfield, 18 Quail is concerned about wildlife, site lines, lighting and noise, hours of operation, traffic, flooding and property values.

Nevin Brown, 7 Quail agreed with many of the comments already presented. Concerned about the characteristics of the neighborhood in relation to wildlife.

Emily Rose, 7 Quail is against the zoning to IT. It was residential and commercial projects were sought. Now, it's rezoned to IT and non-IT uses are being considered. She looked at the overlay of wetland buffers and doesn't think they should be overlayed- that reduces the buffer. She is concerned about wildlife, lighting and drainage.
Public hearing closed

Mr. Haight addressed public comment:

- Zoning
- Lighting
- Storm water
- Buffers
- Wetland impacts- none proposed

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- Traffic
- Setbacks
- TRC process addressed lighting, grading/drainage, landscaping, design
- Extensive review by contractors, staff and state has occurred
- Landscape plan

Owner Mark Phillips addressed traffic concerns and hours of operation.

The board discussed hours of operation restrictions that are coming before the Council soon and whether they would like to conduct a site walk. A significant number of board members were interested in a site walk. Additional discussion occurred regarding distances from residences, zoning changes to this neighborhood, the shed that was not removed, and the Planning process.

The board discussed when they can attend a site walk and decided on 5pm on September 27th.

Motion: M. Speidel moved to table the application to September 27th. Seconded by T. Clark. Vote: U/A

M. Consideration and acceptance of a Site Review for Dover Coast, LLC., (Owners: Dover Coast, LLC and Pookath Holding Company), Assessor's Map 28, Lots 13, 14, 15, & 15A, zoned G & O, located at 725 Central Ave, 4 Brick Rd, Brick Rd & 10 Brick Rd. (Proposal is to construct a new three (3) story 15 unit multi-family residential building at 725 Central Ave plus two (2) shared surface parking lots on abutting lot with a single family being converted to a duplex. The Planning Board previously approved up to 12 units to be purchased via TDR). *(P21-53)

D. Benton introduced the proposed development which requires the demolition of buildings on 725 Central Ave. and 4 Brick Rd. where a 15-unit three (3) story multifamily building will be constructed, the conversion of a single family residence into a duplex at 10 Brick Rd. (which does not need PB review), and the construction of parking areas. The site is serviced by municipal water and sewer. The applicant previously received a conditional approval of up to 12 Transfer Development Rights (TDR) residential units on November 9, 2021, by the Planning Board.

This application was most recently before the Technical Review Committee on August 18, 2022.

The applicant is seeking three waivers: one related to the design of the parking area and vehicular access, one for parking setback, and one for site distance less than 400'.

Art Guadano, AG Architects, Stephen Chunias, Dover Coast and Jay Stevens, Civil Consultants represented the application.
The project includes 15 total units with 14 two-bedroom, 1 1-bedroom, 7 accessible units. 29 parking spaces are required. He described the parking locations and 2 EV ready spaces. The project meets the 4-story restriction. The buildings will be three stories with a walk out basement. The front will show three stories and the back will show four. He brought exterior material samples to show the board.

Regarding the waivers, the lot is very narrow, so this is a good use of the lot. Because of the shape of the lot, they are requesting waivers from setbacks.
Motion: M. Speidel moved to accept and declared no regional impact for the application. Seconded by F. Cullen. Vote: U/A.

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Public hearing opened.
Edmond Ford, Counsel for McQuaid Realy Inc, 12 Oak handed the board members some photos of the driveway. His client is concerned about the drainage from the property as it becomes expanded, the proposed demolition/reconstruction of Brick road and increased traffic cutting through the parking lots. The proposed project is an intense use of that property- too intense.

Peter Menounos, 720 Central is concerned about the added cars and traffic that will increase where it's already a problem.
Public hearing closed.

The applicants addressed public comment:

- The reconstruction of Brick road is not being proposed by the project, but by the City.
- Traffic is easier turning with traffic, but it is difficult to cut across and turn left.
- Ken Mavrogeorge suggested additional impervious area be a permeable surface for the driveway area at 12 Oak.
- Drainage details were given

D. Benton addressed public comment:

- Traffic study was conducted
- Storm water runoff can be an added condition
- Right of way/private property. The applicant is not proposing any work on Brick Rd

STAFF RECOMMENDATION - Waivers/Relief:
The applicant seeks waivers of §153-17.C and §157-50.C.(1) & (5) related to the design of the parking area and vehicular access.

The applicant believes these waivers are necessary due to the shape of the subject parcels and believes that the low traffic volumes and low traffic speeds will prevent unsafe conditions if granted

Section 153-21 of the Site Plan Review Regulations state the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:
(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

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

The Planning Department recommends that the Planning Board vote to grant the waivers with the following condition:

Subsequent Conditions to be Met Prior to the Signing of the Plans:
1. Add a note that the Planning Board approved waivers for: (1) §157-50.C.(1) to allow a lot with multiple access points with a sight line less than 400'; (2) §157-50.C.(5) to allow a driveway less than

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25' from an intersection; and (3) §153-17.C to allow parking and pavement within stated setback areas and have found the criteria of Chapter 153-21.A. have been met.
2. Additional impervious from existing building on the smaller of the two lots either be converted to a permeable surface or modify the drainage system to capture the runoff and direct it to the proposed drainage system.

Discussion among the board about the timing of work on Brick Rd by the applicant and the City at the same time while it's already under construction. (Referring to work that began years ago, but stopped after a certain phase) The board can recommend to TAC/Council work to improve traffic flow issues on Brick.

Motion: M. Speidel moved to approve the waiver with the recommended condition and further finds it meets criteria outlined. Seconded by F. Torr. Vote: U/A

STAFF RECOMMENDATION – 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.

Planning staff believes the proposed development meets the intent and spirit of the Gateway and Office Districts and TDR ordinance to provide more residentially dense development in the transitioning area near the urban core of the City, while providing improvements to the streetscape of a major urban corridor.

The Planning Department recommends that the Planning Board vote to approve the Site Plan with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Payment of TDR Fees;
2. Revise plan and resubmit for Final Planning Board signature and then recording at the SCRD with the following revisions:
   2.1. Add owner's signature;
   2.2. Change note 43 on sheet 7 to state "(P22-54) 12 Transfer Development Units were conditionally approved on November 9, 2021 by the Planning Board"; and
   2.3. Provide all professional stamps and signatures.

Subsequent Condition to Be Met Prior to Construction:
3. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director; and

Subsequent Condition to Be Met Prior to Building Permit:
4. Payment of the water/sewer investment fees at time or request of service;

Subsequent Conditions to Be Met Prior to Occupancy:
5. Issuance of Certificate of Occupancy.
6. Payment of Impact Fees and Recreation Fees as noted in the invoice attached to the Decision Letter.
7. Surety or other form of security acceptable to the City is provided for any unfinished work.

Motion: M. Speidel moved to approve the Site Plan with the recommended conditions and further finds all applicable regulations have been met or proper waivers have been granted. Seconded by E. Kaspari. Vote: U/A

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5. STAFF COMMENTS

- Staff recently closed the Planning Office Assistant Position and hopes to extend an offer this week.
- Vision Chapter Steering Committee kicks off next week
- Staff will be reaching out to those on the Gateway subcommittee
- CIP is in full swing and there will be a joint session with City Council on 9/21 so again please save the date.
- TRCs since last meeting:
    - Site Review for Wooden Ruler Realty, LLC (Owner: Wong, John & Wong, Mo Y Trustees of the Mo Y Wong Living Revocable Trust of 2006), Assessor's Map 6, Lots 32 & 40, zoned CBD-G, located at 42-44 Third. (Proposal is to construct a 103,000 s.f. mixed-use building with commercial on the First Floor and a below grade parking and 58 residential units). A CUP for street trees and benches on Third Street) will also appear before the Planning Board. (P22-60)
    - Site Review for TSB Properties, LLC, Assessor's Map D, Lots 12-1, zoned IT, located at Production Drive. (Proposal is to construct five (5) warehouse buildings, totaling 24,420 sf). A Wetlands Protection District CUP for wetland impact will also appear before the Planning Board. (P22-62)
    - Site Review for White Birch Armory, (Owner: Recon Realty, LLC) Assessor's Map G, Lot 3-A-100, zoned CM, located at 80 Industrial Park Drive. (Proposal is to construct a 20,287sf addition to increase office and warehouse space on site, including additional parking, landscaping, lighting and stormwater management improvements). A Wetlands Protection District CUP for wetland impact will also appear before the Planning Board. (P22-63)
- No TRCs currently scheduled.

6. MEMBER COMMENTS

- E. Kaspari
    - Passed her PHD thesis and received her Doctorate
- M. Speidel
    - Clarified the TRC item is the property that was mentioned earlier located behind one of tonight's agenda items
- F. Cullen
    - Commented about the packet- it was 1200 pages so there was trouble downloading it and sorting and utilizing it. Members suggested it be tabbed differently or posted to a Google drive. Staff will look into this.
- The Chair clarified that a Council Rep (believed to be Councilor Nemeth) and a student representative from Dover High School to be named will also be appointed on the Vision Steering Committee
- Signed plans included:
    - P21-69 - CPI Management LLC– Site Plan – River St.
    - P22-44 - Dover Housing Authority – TDR Site Plan – 48 Whittier St.
    - P22-18 – Bluebird Storage – Site Plan – 64 Littleworth Rd
    - Development Agreement for Jeff Loring on Central Ave

7. ADJOURNMENT

Motion: M. Speidel moved to adjourn at 10:36 pm. Seconded by E. Kaspari. Vote: U/A

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CITY OF DOVER

JOINT MEETING OF THE CITY COUNCIL AND PLANNING BOARD MINUTES

Meeting Type: Workshop Session
Meeting Location: City Hall, Council Conference Room
Meeting Date: **Wednesday, September 21, 2022**
Meeting Time: **7:00 pm**

1. CALL TO ORDER

2. MOMENT OF SILENCE

3. PLEDGE OF ALLEGIANCE

Planning Board Chairperson Cruikshank led the Pledge of Allegiance.

4. ROLL CALL ATTENDANCE

City Council Present: Mayor Carrier, Deputy Mayor Shanahan, Councilor Cullen, Councilor Hackett, Councilor Hinkel, Councilor Nemeth, Councilor Thibodeaux, and Councilor Williams.
Planning Board Present: Chairperson Cruikshank, E. Kaspari, M. Speidel, G. DeBoer, J. Noury-Elliard, and K. Mavrogeorge.
Absent: Councilor Muffett-Lipinski, Planning Board members H. Harmon, K. Pimental, F. Torr, and T. Clark.
Also Present: Deputy City Manager Parker, Deputy City Attorney Perez, and City Clerk Mistretta.

5. CITIZEN'S FORUM

Citizens are invited to speak on the subject matter of the Workshop. Statements shall be limited to five minutes.

Mayor Carrier, seeing no one wishing to speak, closed the Public Forum.

6. DISCUSSIONS

A. FISCAL YEARS 2024-2029 CAPITAL IMPROVEMENTS PROGRAM (CIP) PRESENTATION

Planning & Community Development Director Benton introduced a video that depicted projects within the CIP.

Ms. Benton gave an overview of the Proposed Capital Improvements Plan book.
(This has been archived with these minutes.)

Deputy City Manager Parker gave an overview of specific projects in the CIP.

7. ADJOURNMENT

Mr. Speidel moved to adjourn; seconded by Mr. Mavrogeorge.
Vote: Unanimous.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-66

Application Type:	Conditional Use Permit – non-environmental
Applicant(s):	Storage Barn, LLC
Owner(s):	TSB Properties, LLC
Location:	Production Drive (Tax Map D, Lot 12-2)
Meeting Date:	September 27, 2022

INTENT: To obtain a Conditional Use Permit for Self Service Storage use in the IT District.

AGENDA ITEM #: 3A

ACREAGE: 4.24± ac

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING USE: Vacant Land

PROPOSED USE: Self-Storage

SURROUNDING: Vacant Land, Industrial/Manufacturing

ZBA ACTION: None

ATTACHMENTS: Site Plan and application materials

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for the previous meeting

CUPs & PERMITS REQUIRED:

- US EPA NOI & CGP
- CUPs – Use & Wetlands Impact

WAIVERS REQUESTED: None

TRC: July 7 & August 4, 2022

Summary of Request and Background:
The applicant is proposing to construct a self-storage facility contained in five (5) buildings totaling 12,000 sf in area on a vacant lot on Production Dr. The development will be serviced by public water, however no sewer or onsite septic system are proposed. A Conditional Use Permit (CUP) is required for the use as self-storage in the IT District to ensure compliance with additional criteria.

This application was most recently before the Technical Review Committee on August 4, 2022 (minutes attached).

The Planning Board accepted this item at their September 13, 2022 meeting and tabled for a site walk scheduled for September 27th.

Consistency with Land Use Regulations –IT District Self-Storage Facility CUP Standards

A) The minimum front SETBACK shall be double the SETBACKs required in the district.
B) Any storage unit BUILDING visible from the STREET shall be located to be perpendicular to the STREET, with no storage unit doors facing the STREET.
C) If adjacent to a residential district or a LOT containing a residential use, the facility shall:
   i) Be limited to a one story STRUCTURE with a height no more than twenty (20) feet.
   ii) Restrict the hours of operation to 9 am to 9 pm, Monday through Friday, and 10 am to 6 pm on Saturday and Sunday.
   iii) Not hold auctions or sales of contents of storage containers.
   iv) Have screening sufficient to block the view of the BUILDINGS from abutting parcels and shall prohibit lighting from shedding onto abutting parcels.
   v) All setbacks shall be double the setbacks required in the district, not just the front setback.
D) The architectural design standards of Chapter 149-14L (8) (b) shall be adhered to.

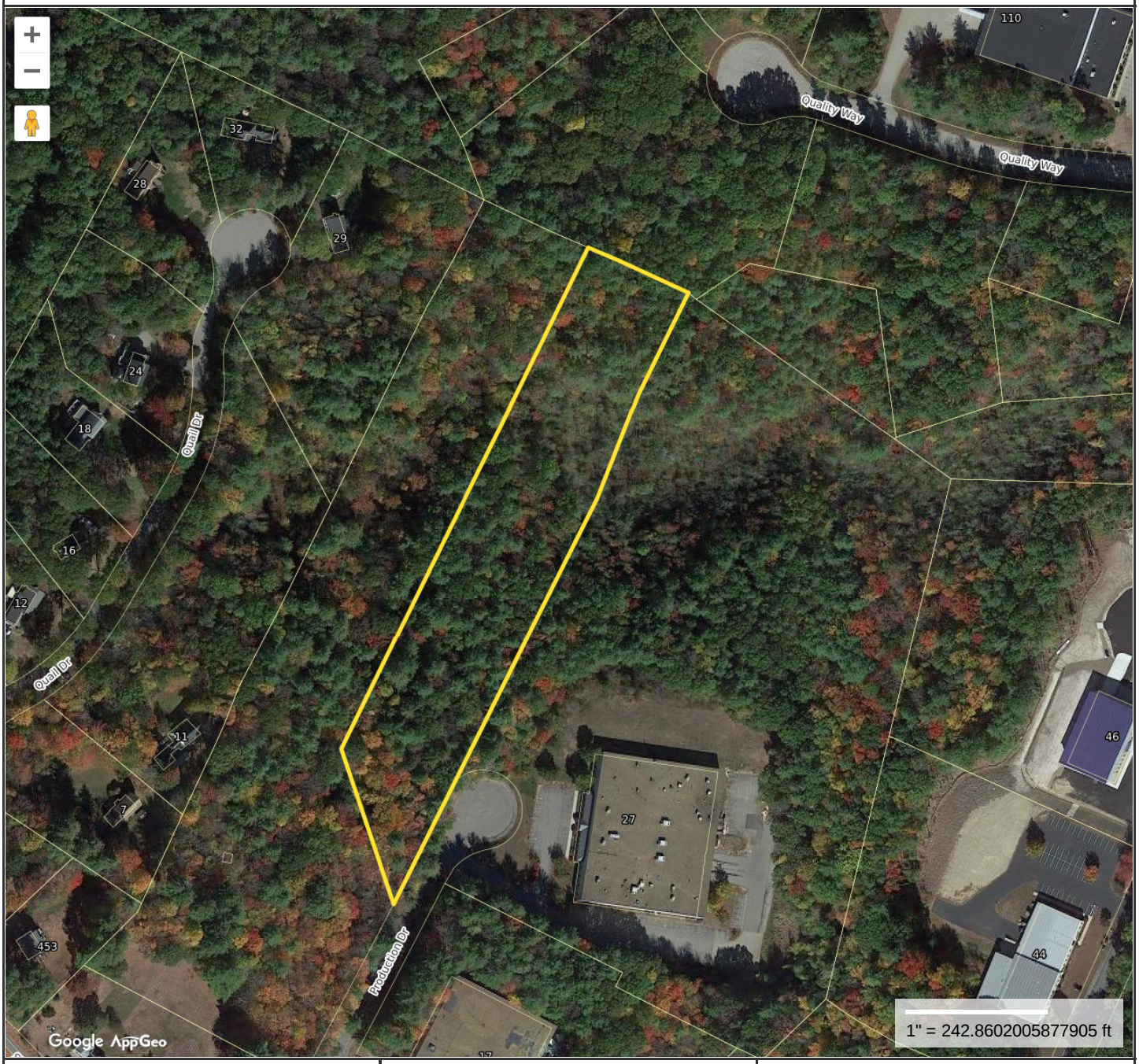
The Planning Department Staff finds that the proposed development conforms to all applicable CUP standards of the Zoning Ordinance for the IT District. The subject parcel does not abut a residential district or residence, therefore section C) is not applicable and this item was submitted prior to the posting of amendments in the IT.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board remove the item from the table, re-open 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 Signing of the Plans:

1. Approval of CUP for wetland buffer impacts (P22-51) & Site Plan (P22-50);
2. A note be added to the plan the Planning Board granted the CUP for Self Service Storage Use (P22-66) in the IT District, and
3. A Development Agreement be entered between the applicant and the Planning Board and recording at the SCRD.

(P22-50) (P22-51) (P22-66)



Property Information

Property ID	D0012-002000
Location	SIXTH ST
Owner	TSB PROPERTIES LLC
Land Use	390
Zoning Code	IT

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 5/3/2021
Data updated Daily

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

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-51

Application Type:	Conditional Use Permit – Wetlands
Applicant(s):	Storage Barn, LLC
Owner(s):	TSB Properties, LLC
Location:	Production Drive (Tax Map D, Lot 12-2)
Meeting Date:	September 27, 2022

INTENT: To obtain a Conditional Use Permit for wetland buffer impact of 10,310 sf.

AGENDA ITEM #: 3-B

ACREAGE: 4.24± ac

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING USE: Vacant Land

PROPOSED USE: Self-Storage

SURROUNDING: Vacant Land, Industrial/Manufacturing

ZBA ACTION: None

ATTACHMENTS: Site Plan and application materials

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for the previous meeting

CUPs & PERMITS REQUIRED:
- US EPA NOI & CGP
- CUPs – Use & Wetlands Impact

WAIVERS REQUESTED: None

TRC: July 7 & August 4, 2022

Summary of Request and Background:
The applicant is proposing to construct a self-storage facility contained in five (5) buildings totaling 12,000 sf in area on a vacant lot on Production Dr. The development will be serviced by public water, however no sewer or onsite septic system are proposed. A Conditional Use Permit (CUP) is required for development within a wetland and/or 50' of a wetland (buffer). The proposed development consists of development of a roadway and stormwater management infrastructure within the wetland buffer totaling 10,310 sf of buffer impact.

This application was most recently before the Technical Review Committee on August 4, 2022 and the Conservation Commission August 8, 2022 (minutes attached). The Conservation Commission conditionally endorsed the CUP *"under the provision that a note is added to the plans that indicate snow storage be located in a way that the snowmelt is directed into the deep sump catch basins with applicable signage onsite."*

The Planning Board tabled this item on September 13th to schedule a site walk on September 27th.

Consistency with Land Use Regulations - 170-27.1. Wetland Protection District. F. Conditional use approval.

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

"(1) 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:

(a) Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area.

(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.

(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.

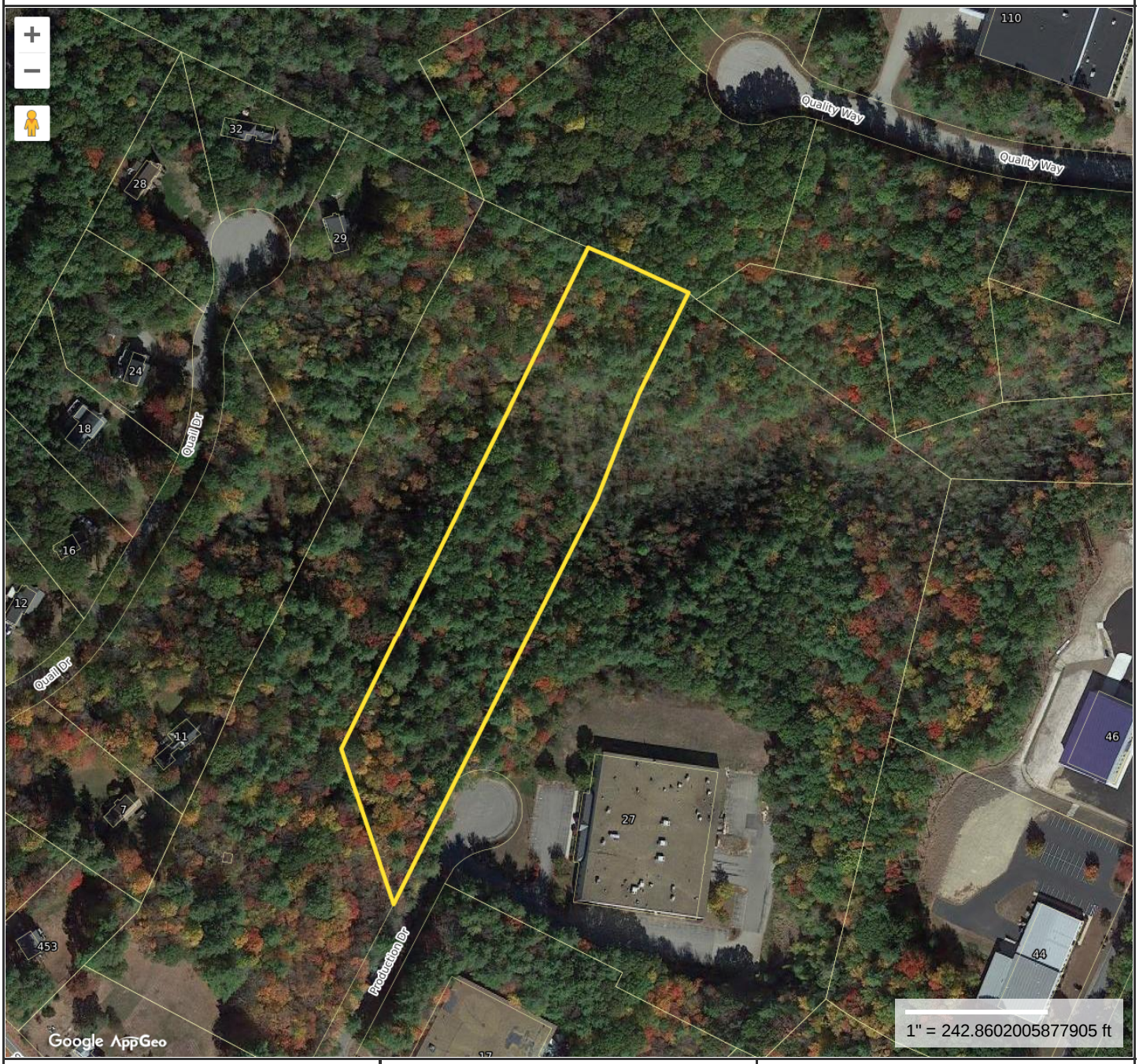
(d) Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.
(e) Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3), below."

Staff feels that the applicant reviewed options and due to existing site conditions there were no additional design alternatives for the impacts, which have been minimized. Staff believes this proposal is consistent with the cited standards.

STAFF RECOMMENDATION:

1. The Planning Department recommends that the Planning Board remove the item from the table, re-open the public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions:
2.
3. **Subsequent Conditions to Be Met Prior to Signing of the Plans:**
    1. Approval of Use CUP(P22-66) & Site Plan (P22-50);
    2. Add the following notes to the plan:
        a. The Planning Board Granted the P22-51 CUP for Impact to a Wetland Buffer;
        b. The conditional use approval shall apply only to the project specified at the time of approval and shall not be transferable to a different project; and
        c. Indicate snow storage be located in a way that the snowmelt is directed into the deep sump catch basins with applicable signage onsite.

(P22-50) (P22-51) (P22-66)



Property Information

Property ID	D0012-002000
Location	SIXTH ST
Owner	TSB PROPERTIES LLC
Land Use	390
Zoning Code	IT

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 5/3/2021
Data updated Daily

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

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-50

Application Type:	Site Review
Applicant(s):	Storage Barn, LLC
Owner(s):	TSB Properties, LLC
Location:	Production Drive (Tax Map D, Lot 12-2)
Meeting Date:	September 27, 2022

INTENT: To construct five (5) self-storage buildings totaling 12,000± s.f. and associated infrastructure.

AGENDA ITEM #: 3-C

ACREAGE: 4.24± ac

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING USE: Vacant Land

PROPOSED USE: Self-Storage

SURROUNDING: Vacant Land, Industrial/Manufacturing

ZBA ACTION: None

ATTACHMENTS: Site Plan and application materials

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for the previous meeting

CUPs & PERMITS REQUIRED:
- US EPA NOI & CGP
- CUPs – Use & Wetlands Impact

WAIVERS REQUESTED: None

TRC: July 7 & August 4, 2022

Summary of Request and Background:
The applicant is proposing to construct a self-storage facility contained in five (5) buildings totaling 12,000 sf in area on a vacant lot on Production Dr. The development will be serviced by public water, however no sewer or onsite septic system are proposed. Conditional Use Permits (CUP) are requested for self-storage use in the IT District (P22-66) and wetland buffer impact (P22-51) in order to develop the proposed site plan.

This application was most recently before the Technical Review Committee on August 4, 2022 (minutes attached).

The Planning Board accepted and tabled this item on September 13th to schedule a site walk on September 27th.

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 remove the item from the table, re-open the public hearing, make the necessary and supporting findings of fact, and vote to approve the Site Plan with the following subsequent conditions, as the plans meet the standards outlined:

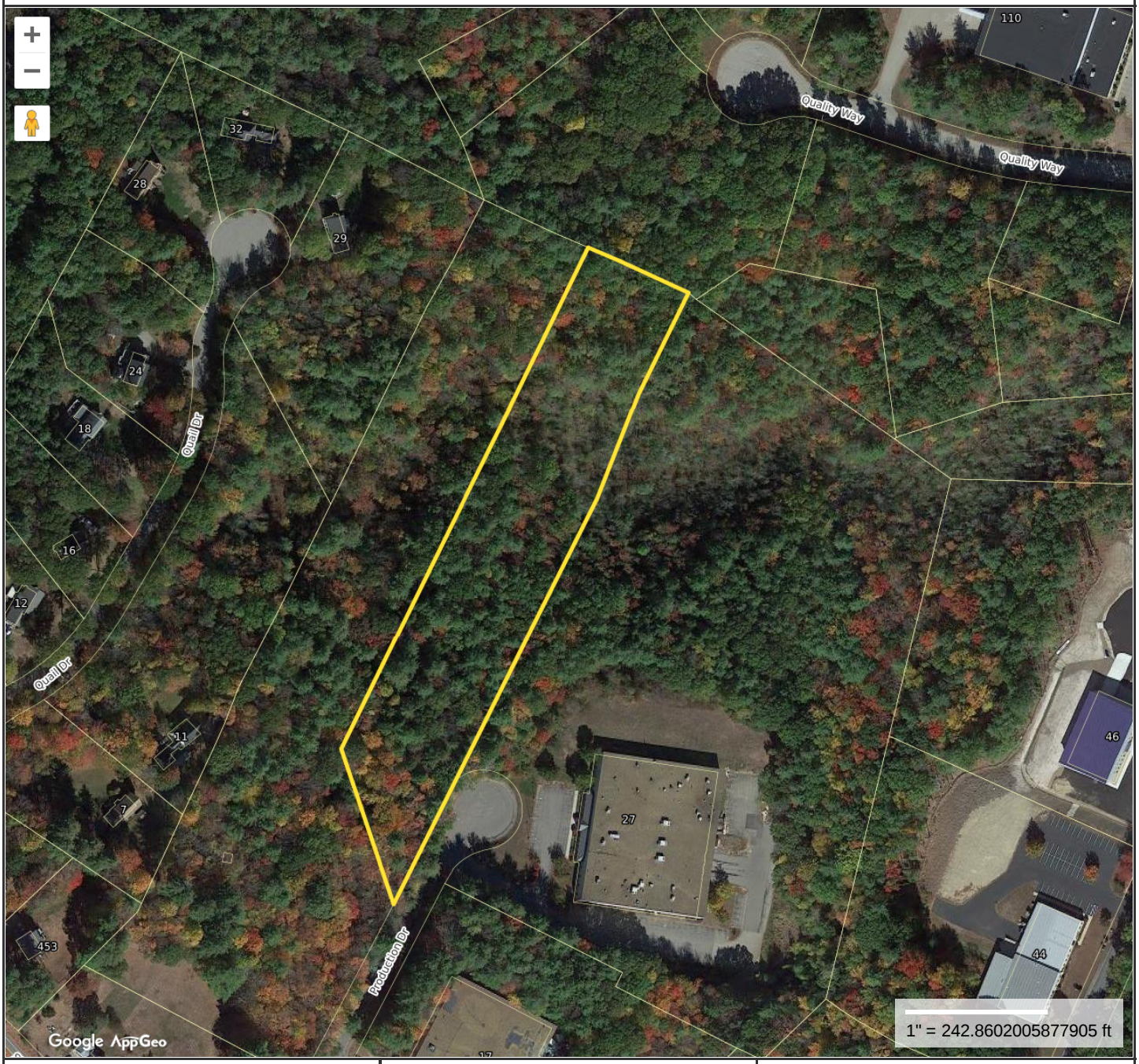
Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Approval of P22-66 & P22-51;
2. Revise plan and resubmit for Final Planning Board signature and then recording at the SCRD with the following revisions:
   2.1. Add owner's signature; and
   2.2. Add LLS, PE and CWS stamps and signatures to Plan Set.

Subsequent Conditions to Be Met Prior to Construction:
4. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director; and
5. A pre-construction conference is held with representatives from the site excavation firm, Engineering Office, Planning Department, and Inspection Services.

Subsequent Conditions to Be Met Prior to Building Permit:
6. Payment of the water investment fees at time or request of service;

Subsequent Conditions to Be Met Prior to Occupancy:
7. Issuance of Certificate of Occupancy;
8. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
9. Surety or other form of security acceptable to the City is provide for any unfinished work.

(P22-50) (P22-51) (P22-66)



Property Information

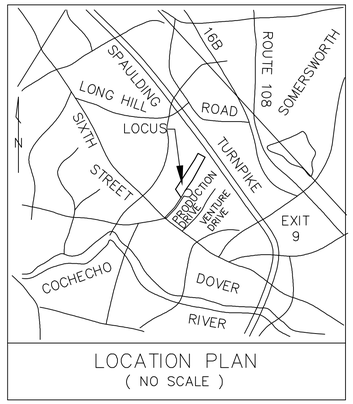
Property ID	D0012-002000
Location	SIXTH ST
Owner	TSB PROPERTIES LLC
Land Use	390
Zoning Code	IT

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 5/3/2021
Data updated Daily

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



LOCATION PLAN
(NO SCALE)

SITE PLAN
FOR
THE STORAGE BARN LLC.

TAX MAP D, LOT 12-2

PRODUCTION DRIVE

DOVER, NH

JUNE 16, 2022

JULY 14, 2022

AUGUST 23, 2022

OWNER

TSB PROPERTIES LLC.
385 SIXTH STREET
DOVER, NH 03820

_____ _____
DATE

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 681
24 CHESTNUT STREET
DOVER, NH 03820
(603) 742-0911

WETLAND SCIENTIST

DAMON E. BURT, CWS
FRAGGLE ROCK ENVIRONMENTAL
38 GARLAND ROAD
STRAFFORD, NH 03884
(603) 969-5574

ARCHITECT

JOHN W. TUTTLE, AIA
TW DESIGNS
254 DRAKE HILL ROAD
STRAFFORD, NH 03884
(603) 664-2181

LANDSCAPE ARCHITECT

JEFFREY R. HYLAND
IRONWOOD DESIGN GROUP, LLC.
PO BOX 873
NEWMARKET, NH 03857
(603) 772-0590

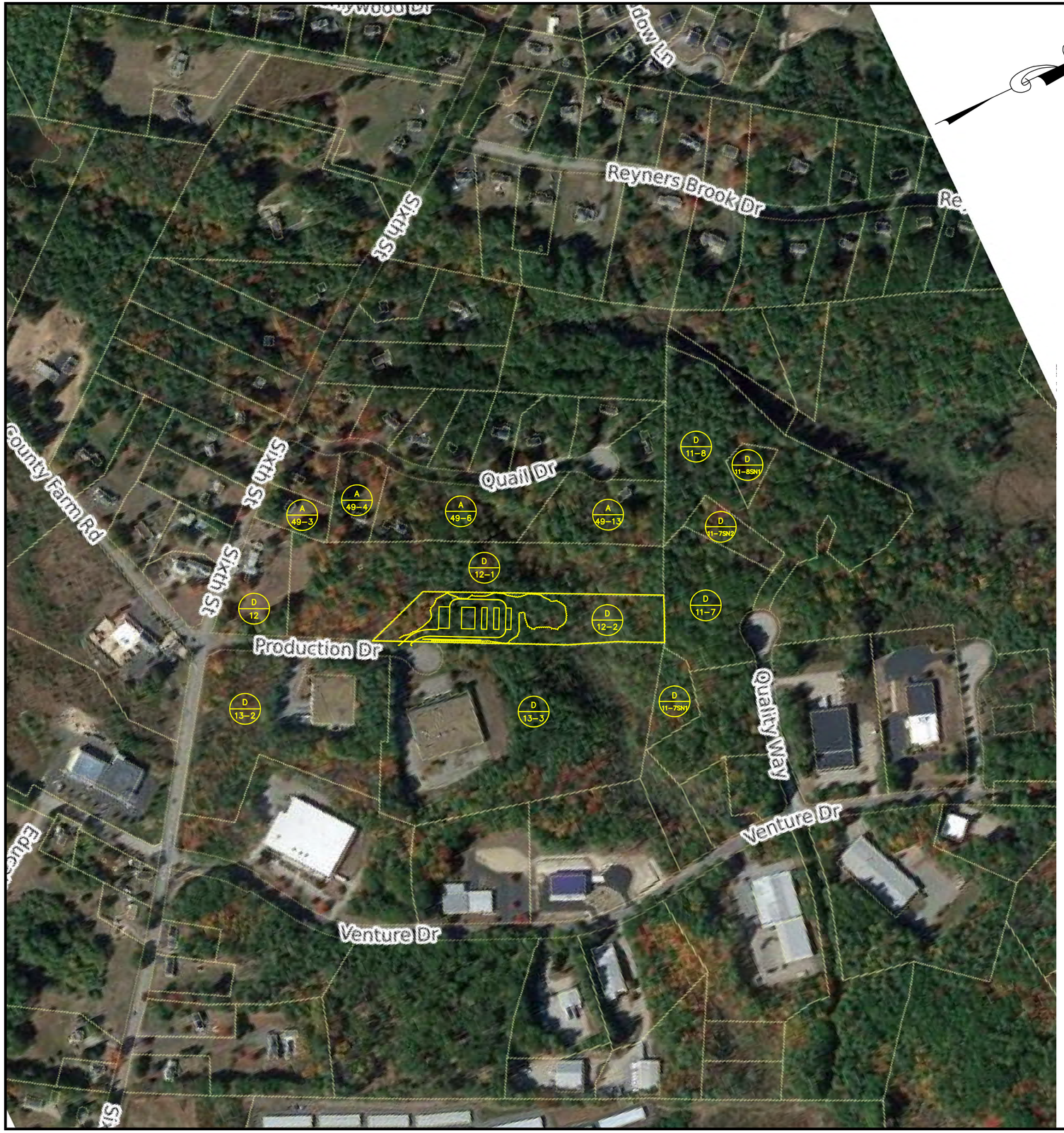
SHEET INDEX	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
SUBDIVISION PLAN SCRD #12433 (BY MCENEANEY SURVEY)	3
TOPOGRAPHIC SUBDIVISION PLAN (BY MCENEANEY SURVEY)	4
NOTE SHEET	5
DEMOLITION PLAN	6
SITE PLAN	7
GRADING, DRAINAGE & EROSION CONTROL PLAN	8
UTILITY PLAN	9
EROSION CONTROL NOTES	10
DETAILS	11 - 16
LIGHTING PLAN	17
DOVER LADDER TRUCK MOVEMENT PLAN	18
BOX TRUCK MOVEMENT PLAN	19

ARCHITECTURE PLANS	SHEET
ELEVATION PLAN - DRAFT	A1
STREET SCAPE - TW DESIGN	A2

LANDSCAPE PLANS - IRONWOOD DESIGN GROUP LLC.	SHEET
LANDSCAPE PLAN	L1.0
LANDSCAPE DETAILS	L2.0

SIGNATURE BOX

PLANNING FILE
NO.: P22-50



ABUTTERS LIST
(WITHIN 200 FT)

TAX MAP	LOT NO.	NAME & ADDRESS
D 12-2	12-2	TSB PROPERTIES LLC. 385 SIXTH ST. DOVER, NH 03820
D 12-1	12-1	TSB PROPERTIES LLC. 385 SIXTH ST. DOVER, NH 03820
D 12	12	TSB PROPERTIES LLC. 385 SIXTH ST. DOVER, NH 03820
A 49-3	49-3	LANGELLOTTI JODI F &, LANGELLOTTI CHRISTOPHER 453 SIXTH ST DOVER, NH 03820
A 49-4	49-4	BROWN NEVIN D &, ROSE EMILY G 7 QUAIL DR DOVER, NH 03820
A 49-6	49-6	BANAIAN JACOB C &, BANAIAN KRISTEN 11 QUAIL DR DOVER, NH 03820
A 49-13	49-13	PORTER DOUGLAS W &, PORTER YUKARI 29 QUAIL DR DOVER, NH 03820
D 11-8	11-8	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-7	11-7	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-8SN1	11-8SN1	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-7SN2	11-7SN2	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-7SN1	11-7SN1	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 13-3	13-3	SARNIA PROPERTIES INC, 1 HAVEN COURT PORTSMOUTH, NH 03801
D 13-2	13-2	ATLANTIC AVENUE REALITY TRUST LLC. 17 PRODUCTION DR DOVER, NH 03820

K / 26 — TAX MAP / LOT NUMBER

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

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	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DESIGN BY: MJM
DRAWN BY: MJM
SCALE: NOTES
DATE: 6-16-22
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

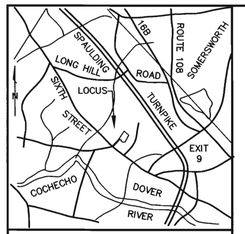
NEIGHBORHOOD PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

2

Plan# 12433 06/30/2021 02:07:35 PM
Page 1 of 1
Register of Deeds, Strafford County
LCHIP STA181731 25.00



LOCATION PLAN
(NO SCALE)

No.	Bearing	Distance
L1	N37°29'45"W	25.98'
L2	N44°57'47"W	99.56'
L3	N24°09'52"E	29.37'
L4	N23°27'05"E	29.39'
L5	N21°01'25"E	69.29'
L6	N28°55'19"E	83.16'
L7	S67°25'51"E	65.22'
L8	S26°08'42"W	39.11'
L9	S67°25'51"E	53.85'

NH STATE PLANE MAD 83 - GPS OBS.

REFERENCE PLANS:

1.) AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER & Co., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY, TAX MAP D, LOT Nos. 9A & 11–1, VENTURE DRIVE AND QUALITY WAY, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: FEBRUARY 14, 2006, REVISED THROUGH 5/3/06; BY: McENEANEY SURVEY ASSOCIATES, INC. RECORDED S.C.R.D. PLAN 85–99 & 85–100.

2.) SUBDIVISION OF LAND PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY, TAX MAP H, LOT No. 11–1, VENTURE DRIVE, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: FEBRUARY 28, 2005; BY: McENEANEY SURVEY ASSOCIATES, INC. RECORDED S.C.R.D. PLAN 79–87.

3.) LOT LINE ADJUSTMENT PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY AND CRAMER FABRICS, INC. SIXTH STREET, VENTURE & PRODUCTION DRIVES, DOVER, NEW HAMPSHIRE. SCALE: 1" = 80'; DATED: JULY 28, 1997; BY: McENEANEY SURVEY ASSOCIATES, INC. RECORDED S.C.R.D. PLAN 50–71.

4.) SUBDIVISION PLAN OF LAND OF QUAIL RUN FOR CLD INVESTMENT PROPERTIES, SIXTH STREET, COUNTY OF STRAFFORD, DOVER, N.H. SCALE: 1" = 50'; DATED: DECEMBER 16, 1988; BY: RICHARD P. MILLETTE AND ASSOCIATES. RECORDED S.C.R.D. PLAN 38–129.

5.) TAX MAP D, LOT 12 – EXISTING CONDITIONS PLAN – 447 SIXTH STREET, DOVER, NEW HAMPSHIRE, COUNTY OF STRAFFORD OWNED BY TSB PROPERTIES, LLC. SCALE: 1" = 60'; DATED: APRIL 18, 2018; BY: TFM MSC. NOT RECORDED.

SIXTH STREET {PUBLIC; VARIABLE WIDTH R.O.W.}

B / 1E
DEBRA A. DUNTON
CHARLENE R. CHANDLER
450 SIXTH STREET
DOVER, NH 03820
2072 / 214

A / 49–3
JODI F. LANGELLOTTI
CHRISTOPHER A. LANGELLOTTI
453 SIXTH STREET
DOVER, NH 03820
4362 / 13

A / 49–4
NEVIN D. BROWN
EMILY G. ROSE
7 QUAIL DRIVE
DOVER, NH 03820
2868 / 649

A / 49–6
JACOB C. BANAIAN
KRISTEN BANAIAN
11 QUAIL DRIVE
DOVER, NH 03820
1839 / 566

A / 49–13
DOUGLAS W. PORTER
YUKARI PORTER
29 QUAIL DRIVE
DOVER, NH 03820
4600 / 780

D / 11–8
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

B / 1N
ISABELLA'S PLACE LLC
P.O. Box 4241
PORTSMOUTH, NH 03802
4620 / 688

D / 11–7
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

B / 1
RICHARD MARONE
ADELE MARONE
500 SIXTH STREET
DOVER, NH 03820
4276 / 582

D / 12 REMAINING LAND
PARCEL AREA
90,417 S.F.
2.08 Ac.
(CONTIGUOUS UPLAND 2.00 Ac.)

D / 12–1
PARCEL AREA
337,616 S.F.
7.75 Ac.
(CONTIGUOUS UPLAND 3.81 Ac.)

D / 12–2
PARCEL AREA
184,682 S.F.
4.24 Ac.
(CONTIGUOUS UPLAND 2.43 Ac.)

D / 13–2
ATLANTIC AVENUE REALTY TRUST, LLC
17 PRODUCTION DRIVE
DOVER, NH 03820
4687 / 882

D / 13–3
SARNIA PROPERTIES, INC.
1 HAVEN COURT
PORTSMOUTH, NH 03801
4850 / 405

D/11–7SN1
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

E / 32
FASTDOGS REALTY, LLC
432 SIXTH STREET
DOVER, NH 03820
3851 / 861

PRODUCTION DRIVE {PUBLIC; 50' WIDE R.O.W.}

BUILDING SETBACK LINE (TYP.)

ZONE LINE — R-40 IT

N44°37'47"E 149.64'
N44°37'47"E 122.07'
N24°23'10"E 154.61'
N24°35'13"E 114.88'
N27°05'33"E 131.55'
N25°41'40"E 192.94'
N25°30'40"E 355.38'
N26°51'30"E 111.72'
S65°11'22"E 119.60'
S65°43'34"E 123.16'
S25°48'36"W 898.74'
S25°55'25"W 181.73'
S21°20'46"W 180.57'
S26°08'39"W 528.05'
S26°08'39"W 200.00'
S27°26'57"W 281.95'
S27°26'57"W 286.07'
S62°33'03"E 395.40'
S19°26'30"E 262.36'
N44°55'39"W 336.98'

L1 L2 L3 L4 L5 L6 L7 L8 L9

I.P.(fnd) I.R.(fnd) I.R.(tbs) D.H.(fnd)

I.R.(tbs) N – 264,445.068 E – 1,184,901.071 (SEE NOTE 7)

I.P.(fnd) N – 263,966.927 E – 1,185,086.680 (SEE NOTE 7)

EXISTING DWELLING #447
75' WELL PROTECTIVE RADIUS
APPROXIMATE LEACH FIELD
WETLAND BUFFER 50'
EDGE OF WETLAND (TYP.)
SEE NOTE 11
DWELLING

APPROVED
DATE 6/22/21
City of Dover, N.H.
PLANNING BOARD
CHAIRMAN/DIRECTOR

LEGEND

I.P.(fnd) – IRON PIPE FOUND
I.R.(fnd) – IRON ROD FOUND
D.H.(fnd) – DRILL HOLE FOUND
I.R.(tbs) – IRON ROD TO BE SET

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
R.O.W. – RIGHT OF WAY
TBM – TEMPORARY BENCHMARK
N – – NORTHING
E – – EASTING
RIM = – RIM ELEVATION
UP – UTILITY POLE
CB – CATCH BASIN
SMH – SEWER MANHOLE
WG – WATER GATE VALVE
WSO – WATER SHUT–OFF (CURB STOP)
CONC. – CONCRETE
F.F. – FINISH FLOOR
W – WELL
+203.7 – EXISTING SPOT GRADE
202 – EXISTING CONTOUR (2 FOOT INTERVAL)
W – WATER SERVICE
S – SEWER SERVICE
PW – PROPOSED WATER SERVICE
PS – PROPOSED SEWER SERVICE
OH E/T – OVERHEAD ELECTRIC / TELEPHONE

NOTES:

1.) OWNER OF RECORD:
TSB PROPERTIES, LLC
385 SIXTH STREET
DOVER, NEW HAMPSHIRE
S.C.R.D. VOLUME 4545, PAGE 961

Jessica Smith
OWNER SIGNATURE

2.) D / 12 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 612,715 S.F. / 14.07 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A SUBDIVISION OF THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. PARCEL D / 12 IS CURRENTLY SERVED BY WELL AND INDIVIDUAL SUBSURFACE DISPOSAL SYSTEM. ALL THREE (3) LOTS WILL HAVE ACCESS TO MUNICIPAL SEWER AND WATER.

5.) ZONING DISTRICT IS INNOVATIVE TECHNOLOGY (IT)

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 2 ACRES
MINIMUM LOT COVERAGE	= 33 PERCENT
MINIMUM FRONTAGE	= 200 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 50 FEET
SIDE SETBACK	= 50 FEET
REAR SETBACK	= 50 FEET
MAXIMUM BUILDING HEIGHT	= 55 FEET MAXIMUM

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; PANEL 0310; SUFFIX E; MAP NUMBER 33017C0310E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED MARCH 8, 2021.
VERTICAL DATUM IS NH STATE PLANE (NAVD88) BASED ON GPS OBSERVATION DATED MARCH 8, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING MARCH 2021 AND REFERENCE PLANS WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) AN ACCESS EASEMENT FROM PRODUCTION DRIVE, ACROSS D–12 OR D–12–2, TO BENEFIT PARCEL D–12–1 WILL BE CREATED AT THE TIME PARCEL D–12–1 IS PRESENTED FOR SITE PLAN APPROVAL. THERE WILL BE NO ACCESS THROUGH THE FRONTAGE ON D–12–1.

10.) WETLANDS SHOWN WERE TAKEN FROM REFERENCE PLAN No. 5 AND REVIEWED AND VERIFIED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES DURING MARCH 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE PARCEL IS SUBJECT TO AN EASEMENT GRANTED TO NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY DATED FEBRUARY 10, 1984 AND DESCRIBED IN S.C.R.D. VOLUME 1124, PAGE 676.

12.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.

13.) BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

"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."

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

21–2340	SUBDIVISION	21–02	20–28
PROJECT NO	TYPE	FIELDBOOK & PAGES	

SUBDIVISION OF LAND
PREPARED FOR
TSB PROPERTIES, LLC
TAX MAP D, LOT No. 12
447 SIXTH STREET & PRODUCTION DRIVE
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 21–32

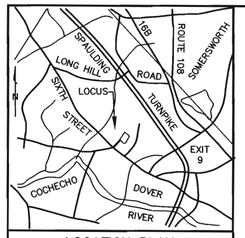
DRAWN BY: RJM	FILE: 2340\DWGS\21–2340R
SCALE: 1" = 60'	DATE: APRIL 15, 2021

60 30 0 30 60 120 180 240

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

McEneaney Survey Associates
of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING



LOCATION PLAN
(NO SCALE)

No.	Bearing	Distance
L1	N37°29'45"W	25.98'
L2	N44°57'47"W	99.56'
L3	N24°09'52"E	29.37'
L4	N23°27'05"E	29.39'
L5	N21°01'25"E	69.29'
L6	N28°55'19"E	83.16'
L7	S67°25'51"E	65.22'
L8	S26°08'42"W	39.11'
L9	S67°25'51"E	53.85'

NH STATE PLANE NAD 83 – GPS OBS.

REFERENCE PLANS:

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5.) TAX MAP D, LOT 12 – EXISTING CONDITIONS PLAN – 447 SIXTH STREET, DOVER, NEW HAMPSHIRE, COUNTY OF STRAFFORD OWNED BY TSB PROPERTIES, LLC. SCALE: 1" = 60'; DATED: APRIL 18, 2018; BY: TFM MSC. NOT RECORDED.

SIXTH STREET {PUBLIC; VARIABLE WIDTH R.O.W.}

B / 1E
DEBRA A. DUNTON
CHARLENE R. CHANDLER
450 SIXTH STREET
DOVER, NH 03820
2072 / 214

A / 49–3
JODI F. LANGELLOTTI
CHRISTOPHER A. LANGELLOTTI
453 SIXTH STREET
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4362 / 13

A / 49–4
NEVIN D. BROWN
EMILY G. ROSE
7 QUAIL DRIVE
DOVER, NH 03820
2868 / 649

A / 49–6
JACOB C. BANAIAN
KRISTEN BANAIAN
11 QUAIL DRIVE
DOVER, NH 03820
1839 / 566

A / 49–13
DOUGLAS W. PORTER
YUKARI PORTER
29 QUAIL DRIVE
DOVER, NH 03820
4600 / 780

D / 11–8
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

B / 1N
ISABELLA'S PLACE LLC
P.O. Box 4241
PORTSMOUTH, NH 03802
4620 / 688

B / 1
RICHARD MARONE
ADELE MARONE
500 SIXTH STREET
DOVER, NH 03820
4276 / 582

E / 32
FASTDOGS REALTY, LLC
432 SIXTH STREET
DOVER, NH 03820
3851 / 861

D / 11–7
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D / 11–7SN1
DOVER BUSINESS & INDUSTRIAL DEVELOPMENT AUTHORITY
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D / 13–3
SARNIA PROPERTIES, INC.
1 HAVEN COURT
PORTSMOUTH, NH 03801
4850 / 405

D / 13–2
ATLANTIC AVENUE REALTY TRUST, LLC
17 PRODUCTION DRIVE
DOVER, NH 03820
4687 / 882

P / 12–1
PARCEL AREA
337,616 S.F.
7.75 Ac.
(CONTIGUOUS UPLAND 3.81 Ac.)

D / 12–2
PARCEL AREA
184,682 S.F.
4.24 Ac.
(CONTIGUOUS UPLAND/2.43 Ac.)

D / 12 REMAINING LAND
PARCEL AREA
90,417 S.F.
2.08 Ac.
(CONTIGUOUS UPLAND 2.00 Ac.)

PRODUCTION DRIVE {PUBLIC; 50' WIDE R.O.W.}

COUNTY FARM ROAD

ZONE LINE — R-40 — IT

BUILDING SETBACK LINE (TYP.)

EXISTING DWELLING #447

75' WELL PROTECTIVE RADIUS

APPROXIMATE LEACH FIELD

WETLAND BUFFER 50'

EDGE OF WETLAND (TYP.)

SEE NOTE 11

I.P.(fnd) I.R.(fnd) I.R.(tbs) I.P.(fnd) D.H.(fnd) I.R.(tbe)

I.R.(tbs) N – 264,445.068 E – 1,184,901.071 (SEE NOTE 7)

I.P.(fnd) N – 263,966.927 E – 1,185,086.680 (SEE NOTE 7)

APPROVED
DATE 6/22/21
City of Dover, N.H.
PLANNING BOARD
CHAIRMAN/DIRECTOR

LEGEND

I.P.(fnd) – IRON PIPE FOUND
I.R.(fnd) – IRON ROD FOUND
D.H.(fnd) – DRILL HOLE FOUND
I.R.(tbs) – IRON ROD TO BE SET

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
R.O.W. – RIGHT OF WAY
TBM – TEMPORARY BENCHMARK
N – – NORTHING
E – – EASTING
RIM = – RIM ELEVATION
-o- UP – UTILITY POLE
□ CB – CATCH BASIN
S SMH – SEWER MANHOLE
WG – WATER GATE VALVE
WSO – WATER SHUT–OFF (CURB STOP)
CONC. – CONCRETE
F.F. – FINISH FLOOR
W – WELL
+203.7 – EXISTING SPOT GRADE
202 – EXISTING CONTOUR (2 FOOT INTERVAL)
W – WATER SERVICE
S – SEWER SERVICE
PW – PROPOSED WATER SERVICE
PS – PROPOSED SEWER SERVICE
OH E/T – OVERHEAD ELECTRIC / TELEPHONE
HcB – SOIL TYPE
– SOILS LINE

THE SOIL TYPES ON THE SITE ARE:
GsC GLOUCESTER VERY STONY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES
HcB HOLLIS–CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
HcC HOLLIS–CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
Sb SAUGATUCK LOAMY SAND
ScB SCANTIC SILT LOAM, 3 TO 8 PERCENT SLOPES

THE SOURCE FOR THE SOIL TYPE DATA IS USDA SCS SOIL SURVEY OF STRAFFORD COUNTY DATED MARCH 1973 & USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

NOTES:

1.) OWNER OF RECORD:
TSB PROPERTIES, LLC
385 SIXTH STREET
DOVER, NEW HAMPSHIRE
S.C.R.D. VOLUME 4545, PAGE 961

James Smith
OWNER SIGNATURE

2.) D / 12 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 612,715 S.F. / 14.07 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT A SUBDIVISION OF THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. PARCEL D / 12 IS CURRENTLY SERVED BY WELL AND INDIVIDUAL SUBSURFACE DISPOSAL SYSTEM. ALL THREE (3) LOTS WILL HAVE ACCESS TO MUNICIPAL SEWER AND WATER.

5.) ZONING DISTRICT IS INNOVATIVE TECHNOLOGY (IT)

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 2 ACRES
MINIMUM LOT COVERAGE	= 33 PERCENT
MINIMUM FRONTAGE	= 200 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 50 FEET
SIDE SETBACK	= 50 FEET
REAR SETBACK	= 50 FEET
MAXIMUM BUILDING HEIGHT	= 55 FEET MAXIMUM

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; PANEL 0310; SUFFIX E; MAP NUMBER 33017C0310E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED MARCH 8, 2021.
VERTICAL DATUM IS NH STATE PLANE (NAVD88) BASED ON GPS OBSERVATION DATED MARCH 8, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND DURING MARCH 2021 AND REFERENCE PLANS WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) AN ACCESS EASEMENT FROM PRODUCTION DRIVE, ACROSS D–12 OR D–12–2, TO BENEFIT PARCEL D–12–1 WILL BE CREATED AT THE TIME PARCEL D–12–1 IS PRESENTED FOR SITE PLAN APPROVAL. THERE WILL BE NO ACCESS THROUGH THE FRONTAGE ON D–12–1.

10.) WETLANDS SHOWN WERE TAKEN FROM REFERENCE PLAN No. 5 AND REVIEWED AND VERIFIED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES DURING MARCH 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE PARCEL IS SUBJECT TO AN EASEMENT GRANTED TO NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY DATED FEBRUARY 10, 1984 AND DESCRIBED IN S.C.R.D. VOLUME 1124, PAGE 676.

12.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.

13.) BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

"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."

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

21–2340	SUBDIVISION	21–02	20–28
PROJECT NO	TYPE	FIELDBOOK & PAGES	

TOPOGRAPHIC SUBDIVISION PLAN
PREPARED FOR
TSB PROPERTIES, LLC
TAX MAP D, LOT No. 12
447 SIXTH STREET & PRODUCTION DRIVE
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 21–32

DRAWN BY: RJM	FILE: 2340\DWGS\21–2340R
SCALE: 1" = 60'	DATE: APRIL 15, 2021

60 30 0 30 60 120 180 240

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

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

GENERAL NOTES:

1. OWNERS OF RECORD:

   TSB PROPERTIES LLC.
   385 SIXTH STREET
   DOVER, NEW HAMPSHIRE 03820
   S.C.R.D. VOLUME 4545 PAGE 961

2. D / 12-2 – DENOTES TAX MAP AND PARCEL NUMBER.
3. ZONING DISTRICT IS IT (INNOVATIVE TECHNOLOGY), WETLANDS PROTECTION DISTRICT
4. TOTAL PARCEL AREA = 4.24 ACRES / 184,682 SQ.FT.
5. DIMENSIONAL REGULATIONS:

	REQUIRED	PROVIDED
MINIMUM LOT SIZE	= 2 ACRES	= 4.24 ACRES
MAXIMUM LOT COVERAGE	= 33 %	= 21 %
MINIMUM FRONTAGE	= 200 FEET	= 200 FEET
MAXIMUM BUILDING HEIGHT	= 55 FEET	= 11 FEET
BUILDING SETBACK REQUIREMENTS:		
FRONT	= 100 FEET	= 100 FEET
ABUT A STREET	= 50 FEET	= 76 FEET
SIDE SETBACK	= 50 FEET	= 571 FT 83 FT
REAR SETBACK	= 50 FEET	= 57 FEET
ABUT RESIDENTIAL	= 150 FEET	= 245 FEET
WETLAND BUFFER	= 50 FEET	= 50 FEET

6. VERTICAL DATUM IS USGS NAVD88. CONTOUR INTERVAL 2 FEET.
7. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA, COMMUNITY PANEL 33017C0310E, EFFECTIVE DATE: SEPTEMBER 30, 2015.
8. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES ON APRIL 18, 2018.
9. WETLANDS WERE FLAGGED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES ON MARCH, 2021 AND LOCATED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND, IN ACCORDANCE WITH CHAPTER 170-27.1 OF ZONING ORDINANCE.
10. FOR APPLICABLE RIGHT OF WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS, SEE REFERENCE PLAN

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. 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.
9. 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.
10. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.

PERMIT SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
   EPA NOI CGP (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.

   SUBDIVISION: P21-32 APPROVED 06/30/21 SCRD PLAN #12433
   CONDITIONAL USE PERMIT-TO ALLOW WORK WITHIN WETLAND OVERLAY DISTRICT BUFFER: (PENDING)
   CONDITIONAL USE PERMIT-TO ALLOW SELF STORAGE IN IT DISTRICT: (PENDING)
   SITE PLAN APPROVAL: (PENDING)

WAIVERS GRANTED:

1. N/A

CONDITIONS OF APPROVAL:

1. CUP CRITERIA SHALL BE ADHERED TO.

SITE NOTES

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND, RECORDED AT S.C.R.D. #12433 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT A SELF STORAGE UNIT FACILITY CONSISTING OF THREE (3) 1,604 S.F., ONE (1) 4,000 S.F., AND ONE (1) 3,200 S.F. COMMERCIAL BUILDINGS AND ASSOCIATED DRIVE AND SITE IMPROVEMENTS.
3. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
5. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
6. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
7. SEE DETAILS FOR SIGN LEGENDS.
8. 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.
9. 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.
10. 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.
11. 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.
12. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
13. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS AND NH RSA 155-A:5. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
14. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
15. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
16. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER.
17. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBANCE ACTIVITY OCCURRING.
18. AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER 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.
19. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY 9 AM-4 PM. NO CONSTRUCTION SHALL OCCUR ON SUNDAY OR DURING FEDERAL HOLIDAY HOURS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR AND THE SIGN SHALL NOTE THE THE ROADWAY IS PRIVATE. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.
20. 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.
21. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
22. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
23. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES. RETAINING WALL DESIGN SHALL BE STAMPED BY A NH PROFESSIONAL ENGINEER.
24. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
    HTTP://WWW.UNH.EDU/UNHSC/PTAPP.
25. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
26. 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.
27. FIRE DEPARTMENT ACCESS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
28. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR AS NEEDED.
29. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED.
30. 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.
31. NO AUTO, RV, BOAT SERVICE/ CLEANING/ WRAPPING/ ETC. WILL OCCUR ONSITE.
32. ALL VEHICLE/ BOAT STORAGE WILL BE INSIDE BUILDINGS.

UTILITY NOTES

1. 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.
2. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
3. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SITE PLANS SHALL SHOW ANY EASEMENTS FOR THESE SERVICES.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER FOR FIRE PROTECTION ONLY.
6. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
7. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
8. 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.
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 WATER 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. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES (IF APPLICABLE).
25. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE CITY AND STATE CODES.
26. A SECURITY ALARM SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
27. 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.
28. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
29. AN EASEMENT IS PROVIDED TO THE CITY TO MAINTAIN THE POTABLE DRINKING WATER QUALITY THROUGH THE HYDRANT FLUSHING PROGRAM.
30. UTILITIES WITHIN THE PROPERTY ARE TO BE THE RESPONSIBILITY OF THE PROPERTY OWNER INCLUDING THE ROUTINE MAINTENANCE, REPLACEMENT, REPAIR, AND INSPECTION AS NEEDED.
31. NO SEWER/ SEPTIC FACILITIES ARE PROPOSED ON SITE.

GRADING NOTES:

1. ALL DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".
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. 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.

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.
11. 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.
12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
13. 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 OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
14. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
15. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND PRIOR TO CONSTRUCTION.

LEGEND

- I.R. (set) o – IRON ROD W/ I.D. CAP (SET)
- ⊙ I.P. – IRON PIPE
- □ G.B. – GRANITE BOUND
- ⊙ I.R. – IRON ROD
- ⊙ I.R.(fnd) – IRON ROD (FOUND)
- D.H. – DRILL HOLE
- 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
- — · · · — – EDGE OF WETLAND
- O.A. – OVERALL
- TBR – TO BE REMOVED
- CCB – CAPE COD BERM
- ~~~ – TREELINE
- R.O.W. – RIGHT OF WAY
- Ⓓ DMH – DRAIN MANHOLE
- ▫ CB – CATCH BASIN
- Ⓢ SMH – SEWER MANHOLE
- HYD. – FIRE HYDRANT
- WV WV – WATER GATE VALVE
- – TREE
- GV GV – GAS VALVE
- R=5' – PROPOSED PAVEMENT RADIUS
- PW – PROPOSED WATER
- PE – PROPOSED ELECTRIC
- PS – PROPOSED SEWER
- PD – PROPOSED DRAINAGE
- PG – PROPOSED GAS
- 55 – PROPOSED FINISH GRADE
- x 55 – PROPOSED SPOT GRADE

UTILITY CONTACTS

WATER: – CITY OF DOVER COMMUNITY SERVICES DEPARTMENT

CONTACT: KENNETH MAVROGEORGE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)-516-6454
EMAIL: K.MAVROGEORGE@DOVER.NH.COM

ELECTRIC: – EVERSOURCE

CONTACT: TREVOR EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-4227
EMAIL: TREVOR.EMMONS@EVERSOURCE.COM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

NO.	REVISION	APP'D	DATE
2	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-16-22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY: SJH
PROJECT NO: 21001
FILE: 21001-SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NOTES SHEET

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

LEGEND

I.R. (set) o	– IRON ROD W/ I.D. CAP (SET)
⊙ I.P.	– IRON PIPE
□ G.B.	– GRANITE BOUND
⊙ I.R.	– IRON ROD
⊙ I.R.(fnd)	– IRON ROD (FOUND)
D.H.	– DRILL HOLE
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
— · · · —	– EDGE OF WETLAND
O.A.	– OVERALL
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VIF	– VERIFY IN FIELD
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	– TREELINE

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UGE	– PROPOSED UNDERGROUND ELECTRIC
PS	– PROPOSED SEWER
PD	– PROPOSED DRAINAGE
PG	– PROPOSED GAS
55	– PROPOSED FINISH GRADE
55	– PROPOSED SPOT GRADE

D / 12-1

PARCEL AREA

337,616 S.F.

7.75 Ac.

HcB

Sb

50' WETLAND BUFFER

PROPOSED TREELINE

D / 12-2

PARCEL AREA

184,682 S.F.

4.24 Ac.

PROPOSED TREELINE

50' WETLAND BUFFER

LIMIT OF CLEARING

LIMIT OF CLEARING

LIMIT OF CURB REMOVAL

EOP

LIMIT OF SAWCUT

EOP

EUGE

LIMIT OF SAWCUT

SGC

PRODUCTION DRIVE

SGC

SGC

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

CIVILWORKS NEW ENGLAND
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NO.	REVISION	APP'D	DATE
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DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO: 21001
FILE: 21001-SITE

DEMOLITION PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

6

PARKING CALCULATIONS

	MAX ALLOWED	PROPOSED
SELF-STORAGE FACILITY: 12,000 SF	= 0	0
TOTAL PARKING	= 0	0

LEGEND

I.R. (set) o – IRON ROD W/ I.D. CAP (SET)
⊙ I.P. – IRON PIPE
□ G.B. – GRANITE BOUND
⊙ I.R. – IRON ROD
⊙ I.R.(fnd) – IRON ROD (FOUND)
D.H. – DRILL HOLE
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
– · · · – EDGE OF WETLAND
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(S) SMH – SEWER MANHOLE
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– TREE
GV. – GAS VALVE
R=5' – PROPOSED PAVEMENT RADIUS
PW – PROPOSED WATER
PE – PROPOSED ELECTRIC
UGE – PROPOSED UNDERGROUND ELECTRIC
PS – PROPOSED SEWER
PD – PROPOSED DRAINAGE
PG – PROPOSED GAS
55 – PROPOSED FINISH GRADE
x 55 – PROPOSED SPOT GRADE

D / 12-1
PARCEL AREA
337,616 S.F.
7.75 Ac.

1056
187.06
STA MHS 030921

HcB

Sb

50' WETLAND BUFFER
NO PARKING FIRE LANE (TYP.)
NO SNOW STORAGE SIGN
245' SETBACK TO RESIDENTIAL ZONE (150' REQUIRED)
PROPOSED TREELINE
PROPOSED CONSERVATION PLACARD (TYP.)
BUILDING SETBACK LINE
NO DOORS
TRANSFORMER PAD(44"X51")
SNOW STORAGE
CCB END
CCB START/ END SGC
PROPOSED STOP SIGN
EOP
EUGE
R=10'
R=5'
1049
183.39
STA MNF 030921
PRODUCTION DRIVE
SGC
R=104'
R=80'
CCB
R=5'
24'
NO PARKING FIRE LANE (TYP)
PROPOSED BOLLARD (TYP)
30'
SNOW STORAGE
PROPOSED RETAINING WALL
PROPOSED 4' CHAINLINK FENCE
PROPERTY LINE (TYP.)
NO PARKING FIRE LANE (TYP)
PCB2
R=30'
PROPOSED WOODEN GUARDRAIL
NO PARKING FIRE LANE (TYP.)
PROPOSED WOODEN GUARDRAIL
SNOW STORAGE
CCB
PCB1
R=30'
PDMH1
BUILDING SETBACK LINE
NO UNATTENDED VEHICLES (TYP.)
PROPOSED WET POND
PROPOSED CONSERVATION PLACARD (TYP.)
50' WETLAND BUFFER

SELF STORAGE UNIT BUILDING #1 3,200 S.F.
SELF STORAGE UNIT BUILDING #2 4,000 S.F.
SELF STORAGE UNIT BUILDING #3 1,600 S.F.
SELF STORAGE UNIT BUILDING #4 1,600 S.F.
SELF STORAGE UNIT BUILDING #5 1,600 S.F.
40' 50' 20' 20' 20'
80'
45'
25' 25'
PROPOSED LIGHT
CCB START
CCB END

D / 12-2
PARCEL AREA
184,682 S.F.
4.24 Ac.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

CIVILWORKS NEW ENGLAND
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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1	REV PER TRC	SJH	7-7-22

DESIGN BY: DJL
DRAWN BY: MJM
SCALE: 1"=30'
DATE: 6-16-22
PROJECT NO: 21001
FILE: 21001-SITE

SITE PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

7

CONDITIONAL USE

WETLAND BUFFER IMPACT

PROPOSED
1 = 808 SF
2 = 1,720 SF
3 = 7,782
TOTAL = 10,310 SF

LEGEND

I.R. (set) o – IRON ROD W/ I.D. CAP (SET)
I.P. – IRON PIPE
G.B. – GRANITE BOUND
I.R. – IRON ROD
I.R.(fnd) – IRON ROD (FOUND)
D.H. – DRILL HOLE
S.F. – SQUARE FEET
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– – – – – – – – – – EDGE OF WETLAND
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– TREELINE

R.O.W. – RIGHT OF WAY
DMH – DRAIN MANHOLE
CB – CATCH BASIN
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WV – WATER GATE VALVE
– TREE
GV. – GAS VALVE
R=5' – PROPOSED PAVEMENT RADIUS
PW – PROPOSED WATER
PE – PROPOSED ELECTRIC
UGE – PROPOSED UNDERGROUND ELECTRIC
PS – PROPOSED SEWER
PD – PROPOSED DRAINAGE
PG – PROPOSED GAS
55 – PROPOSED FINISH GRADE
55 – PROPOSED SPOT GRADE

D / 12-1
PARCEL AREA
337,616 S.F.
7.75 Ac.

HcB
Sb

DOUBLE INLET PCB1 (6' DIA)
RIM: 170.00
INV. OUT: 167.00

①BUFFER IMPACT: 808 SF

PROPOSED 9.75 LF 12"HDPE S=0.0515

PROPOSED TREELINE

PROPOSED SILTSOXX

PLUNGE POOL
INV. OUT = 150.00
BOTTOM EL = 149.50
LIP ELEV. = 150.00

INV. OUT: 149.6
3' X 5'
6" THICK D50 STONE
6" DEEP LAID ON GEOTEXTILE FABRIC

PROPOSED OUTLET STRUCTURE
RIM ELEV.: 150.5
6" ORIFICE ELEV.: 149.7
INV. OUT: 149.7

PDMH1
RIM: 170.1
INV IN(12"PCB1): 166.5
INV IN(12"PCB2): 164.86
INV. OUT: 161.68

SWALE SLOPE TO DRAIN

PROPOSED GUTTER

PROPOSED TREELINE

②BUFFER IMPACT: 1,720 SF

STABILIZED CONSTRUCTION ENTRANCE

PROPOSED DOWN SPOUT

FFE=173.00
FFE=172.10
FFE=171.80
FFE=171.10
FFE=170.60

D / 12-2
PARCEL AREA
184,682 S.F.
4.24 Ac.

BOTTOM OF PERMANENT POOL: 145.70

TOP OF PERMANENT POOL: 149.70

PROPOSED 10' WIDE X4' LONG RIP RAP SPILLWAY
ELEV.: 150.5

③BUFFER IMPACT: 7,782 SF

PROPOSED 116 LF 12"HDPE S=0.1

PROPOSED 107 LF 12"HDPE S=0.02

DOUBLE INLET PCB2 (6' DIA)
RIM: 170.00
INV. OUT: 167.00

I.O.W.: 180.00
B.O.W.: 178.00

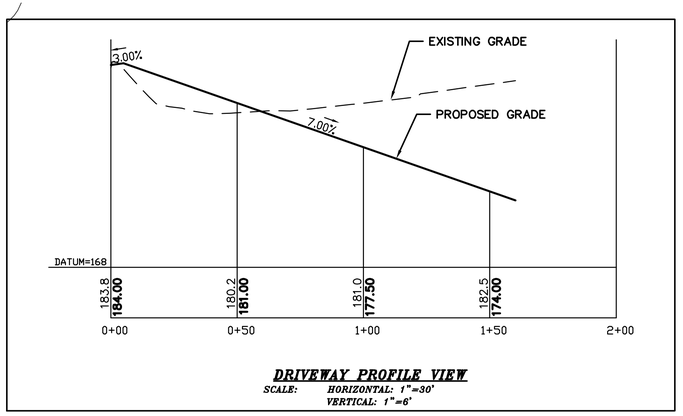
I.O.W.: 182.00
B.O.W.: 175.75

I.O.W.: 182.00
B.O.W.: 172.75

I.O.W.: 180.00
B.O.W.: 172.00

I.O.W.: 174
B.O.W.: 171

EOP
EUGE
SGC
PRODUCTION DRIVE



DRIVEWAY PROFILE VIEW
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=6'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	DATE	APP'D
2	REV PER 2ND TRC	8-4-22	SJH
1	REV PER TRC	7-7-22	SJH

DESIGN BY: DJL
DRAWN BY: MJM
SCALE: 1"=30'
DATE: 6-16-22
APPROVED BY: SJH
PROJECT NO: 21001
FILE: 21001-SITE

GRADING, DRAINAGE & EROSION PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

8

LEGEND

I.R. (set) o – IRON ROD W/ I.D. CAP (SET)
⊙ I.P. – IRON PIPE
□ G.B. – GRANITE BOUND
⊙ I.R. – IRON ROD
⊙ I.R.(fnd) – IRON ROD (FOUND)
D.H. – DRILL HOLE
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WV – WATER GATE VALVE
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GV. – GAS VALVE
R=5' – PROPOSED PAVEMENT RADIUS
PW – PROPOSED WATER
PE – PROPOSED ELECTRIC
UGE – PROPOSED UNDERGROUND ELECTRIC
PS – PROPOSED SEWER
PD – PROPOSED DRAINAGE
PG – PROPOSED GAS
55 – PROPOSED FINISH GRADE
55 – PROPOSED SPOT GRADE

D / 12-1
PARCEL AREA
337,616 S.F.
7.75 Ac.

HcB
Sb

SELF STORAGE UNIT BUILDING #1 3,200 S.F.
SELF STORAGE UNIT BUILDING #2 4,000 S.F.
SELF STORAGE UNIT BUILDING #3 1,600 S.F.
SELF STORAGE UNIT BUILDING #4 1,600 S.F.
SELF STORAGE UNIT BUILDING #5 1,600 S.F.

PROPOSED LIGHT
PROPOSED TRANSFORMER
PROPOSED ELECTRIC METER
PROPOSED WET POND
PCB1
PCB2
PD
UGE, T&C
PROPOSED UNDERGROUND UTILITIES
PW
PROPOSED 6" DI
PROPOSED HYDRANT
PROPOSED 6" GATE VALVE
THRUST BLOCK(TYP.)
EXISTING 12" WATER
TAP EXISTING CLDI W/ 6" X 12" STAINLESS STEEL TAPPING SLEEVE W/ GATE VALVE
EOP
EUGE
SGC
PRODUCTION DRIVE

D / 12-2
PARCEL AREA
184,682 S.F.
4.24 Ac.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

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PLANNING FILE
NO.: P22-50

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DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

UTILITY PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

9

DESCRIPTION

1. THE PURPOSE OF THIS PLAN IS TO DEPICT A SELF STORAGE UNIT FACILITY CONSISTING OF THREE (3) 1,604 S.F., ONE (1) 4,000 S.F., AND ONE (1) 3,200 S.F. SELF-STORAGE BUILDING, ASSOCIATED DRIVE, AND SITE IMPROVEMENTS.

PROJECT NAME AND LOCATION

THE STORAGE BARN — LATITUDE N43° 13' 15.3"
PRODUCTION DRIVE — LONGITUDE W70° 54' 50.2"
DOVER, NH

DISTURBED AREA

±76,260 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 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 OF 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-P205-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE PER LANDSCAPE PLAN
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 PORPERTY 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 TRAILER/STRUCTURE. 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 INCLUDES 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.

PER 153-10 F:

ALL SITE IMPROVEMENTS WHICH REQUIRE BLASTING OF LAND SHALL MEET THE FOLLOWING REQUIRMENTS PRIOR TO ANY BLASTING OCCURING.

1. THE APPLICANT SHALL PREPARE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN FIVE HUNDRED (500) FEET OF THE EXTERNAL BOUNDARIES OF THE PROPOSED LOT TO BE DEVELOPED. THIS SURVEY, ALONG WITH A MONITORING PLAN, SHALL BE ON FILE WITH THE DOVER FIRE AND RESCUE UPON RECOMMENDATIONS OF THE CHIEF. THE PLANNING BOARD MAY REQUIRE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN ONE THOUSAND (1000) FEET.
2. THE APPLICANT SHALL HOLD A NEIGHBORHOOD MEETING TO REVIEW THE BLASTING PLAN AND PRE-BLAST SURVEY, WITH REPRESENTATIVES OF THE FIRE AND RESCUE AND THE BLASTING COMPANY IN ATTENDANCE, PRIOR TO ANY ON-SITE BLASTING. ABUTTERS WITHIN ONE THOUSAND (1000) FEET OF THE EXTERNAL BOUNDARY OF THE PROJECT PARCEL SHALL BE NOTIFIED BY THE CERTIFIED MAIL (PAID FOR BY THE APPLICANT) OF THE MEETING NO LESS THAN TEN (10) DAYS PRIOR TO THE MEETING AND NO MORE THAN FIFTEEN (15) DAYS PRIOR TO THE MEETING. THE NOTICE SHALL STATE THE TIME AND DATE OF THE BLASTING AND CONTAIN A MAP SHOWING THE BLASTING AREA, THE 1,000-FOOT-RADIUS AREA, AND THE 500-FOOT-RADIUS AREA.
3. PERMIT HOLDERS SHALL BE IN COMPLIANCE WITH NFPA 495, EXPLOSIVE MATERIALS CODE, IN ADDITION TO ALL OTHER ORDINANCES AND CODES SET FORTH IN THE CITY OF DOVER CODE, § 153-14A, STORMWATER MANAGEMENT, EROSION CONTROL AND FLOOD HAZARDS, OF THIS CHAPTER AND THE CITY OF DOVER FIRE PREVENTION CODE, WHICH SPECIFICALLY PROHIBITS THE OVERNIGHT STORAGE OF EXPLOSIVES OR BLASTING AGENTS. FURTHER, ALL STORAGE MAGAZINES SHALL BE LOCKED IN THE OPEN POSITION AT THE END OF THE DAY'S OPERATION FOR EASY INSPECTION BY CITY OFFICIALS.
4. BLASTING PERMITS MAY BE OBTAINED BY CALLING THE DOVER FIRE AND RESCUE DURING NORMAL BUSINESS HOURS. THE PERMITS ARE ONLY ACTIVE FOR THE DATES AND TIME SPECIFIED ON THE PERMIT.
5. PERMIT HOLDERS SHALL HOLD INSURANCE AGAINST CLAIMS FOR DAMAGES FOR PERSONAL INJURY AND PROPERTY WHICH MAY ARISE FROM THE PERFORMANCE OF THE WORK.
6. HOURS OF OPERATION FOR THE BLASTING SHALL BE NO EARLIER THAN 8:00AM AND NO LATER THAN 6:00PM, MONDAY THROUGH FRIDAY, EXCLUDING FEDERAL HOLIDAYS.

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 SLOPES 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 SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 403.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

NO.	REVISION	APP'D	DATE
2	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-16-22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
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603.749.0443

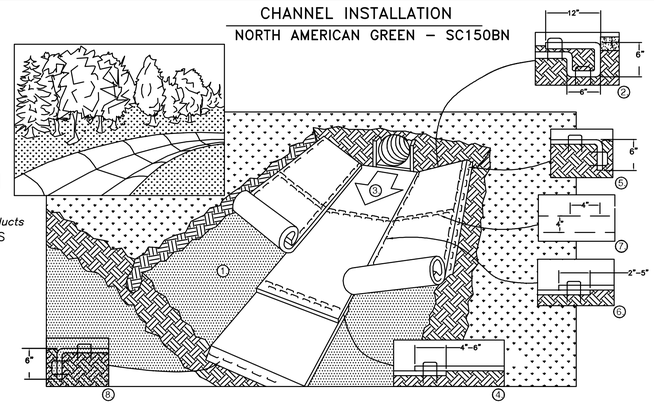
TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

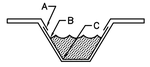
EROSION & SEDIMENT CONTROL NOTES

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.



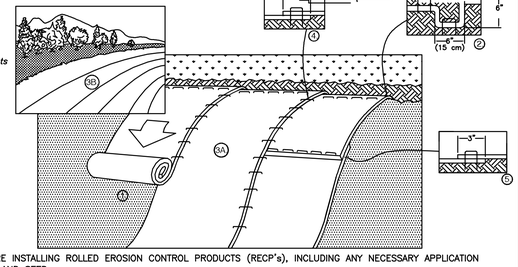
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES
BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

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

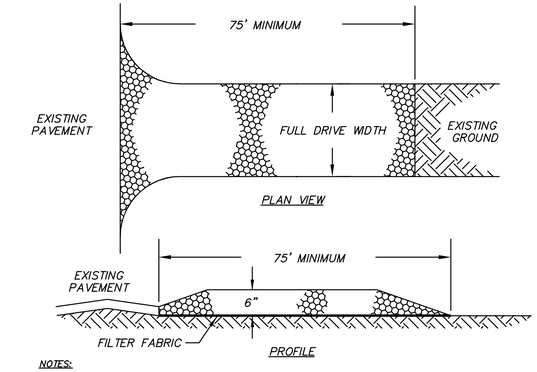
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

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.



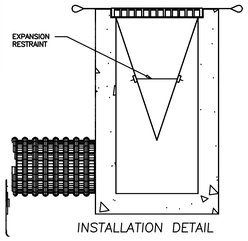
NOTES:
1. *SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.*
2. *TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.*

STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS
   A. AGGREGATE SIZE: USE THREE (3) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
   B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
   C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
   D. LENGTH: AS REQUIRED, BUT NOT LESS THAN SEVENTY-FIVE (75) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
   E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE.
   F. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUAL.

2. MAINTENANCE
   THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE
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

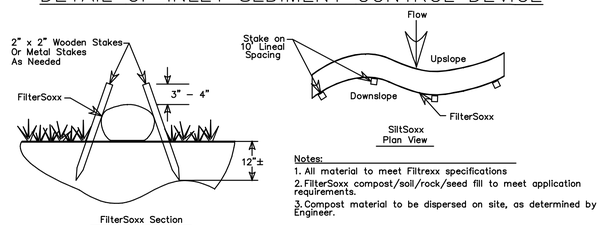
REGULAR FLOW SILTSACK®
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

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)

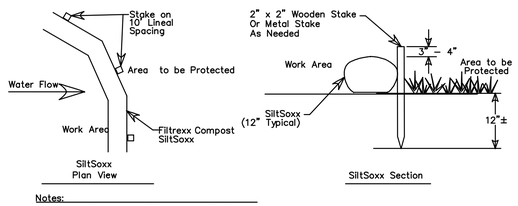
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

DETAIL OF INLET SEDIMENT CONTROL DEVICE



FilterSoxx Staking Details

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.



Notes:
1. All material to meet Filtrexx specifications
2. SiltSoxx compost/jsoil/rock/seed fill to meet application requirements.
3. SiltSoxx depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer.
4. Compost material to be dispersed on site, as determined by Engineer.

SILTSOXX DETAILS
NOT TO SCALE

SEEKING REPORTS OF RARE TURTLES

The NH Fish & Game Department is collecting observations of four turtle species:



Blanding's turtle (state endangered)
- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



Wood turtle (special concern)
- Sculpted, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land



Eastern box turtle (state endangered)
- Small terrestrial turtle with highly domed shell
- Irregular yellow or orange markings over brown/black base



Spotted turtle (state threatened)
- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

Report sightings to RAARP@wildlife.nh.gov or 603-271-2461 *Please report promptly, noting specific location and date – Photographs strongly encouraged*

NOTES:
1. *ALL OUTSIDE CONSTRUCTION PERSONNEL SHALL RECEIVE TRAINING IN THE IDENTIFICATION OF RARE TURTLE SPECIES AND MADE AWARE OF THEIR PROTECTED STATUS.*
2. *THE USE OF WELDED PLASTIC OR "BIODEGRADABLE PLASTIC" NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED*
3. *THE USE OF EROSION CONTROL BERM, WHITE FILTREXX DEGRADABLE WOVEN SILT SOCK, OR "WILDLIFE FRIENDLY" WOVEN ORGANIC MATERIAL (E.G. COCO OR JUTE MATTING SUCH AS NORTH AMERICAN GREEN SC150BN OR EQUIVALENT) ARE ACCEPTABLE FOR USE.*
4. *IF WOOD, SPOTTED, OR BLANDING'S TURTLES ARE FOUND LAYING EGGS IN THE WORK AREA, PLEASE CONTACT MELISSA DOPERALSKI AT 271-1738 or JOSH MEGYESY AT 271-1125 FOR FURTHER INSTRUCTIONS.*

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

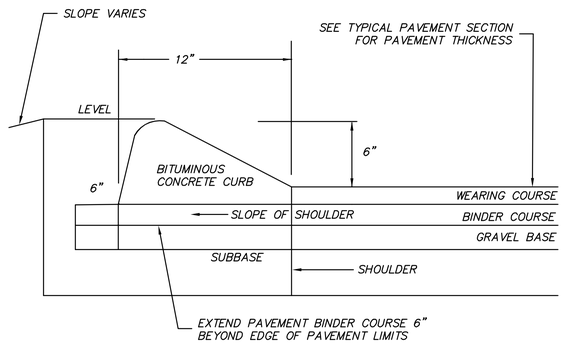
DATE: 6-16-22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY: SJH
PROJECT NO: 21001
FILE: 21001-SITE

DETAIL SHEET

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

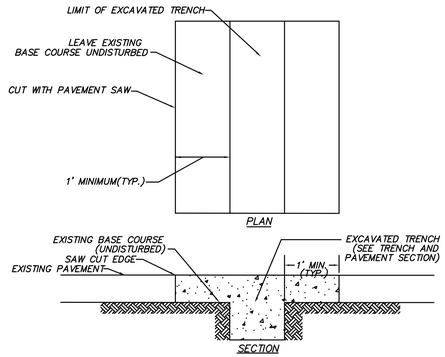
THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

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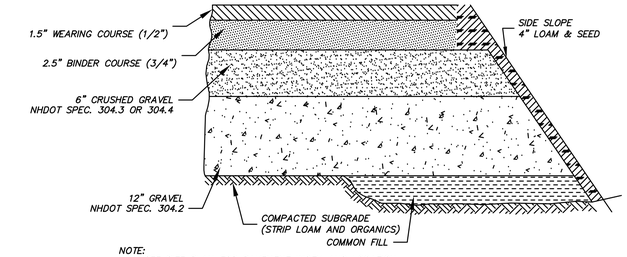
BITUMINOUS SLOPED CURB

NOT TO SCALE



TRENCH PATCH

NOT TO SCALE

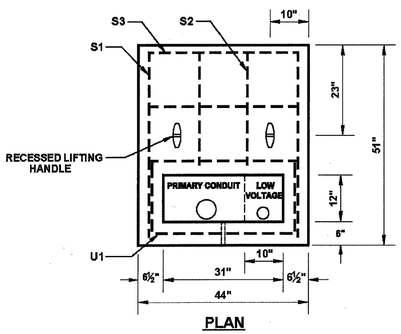


NOTE:

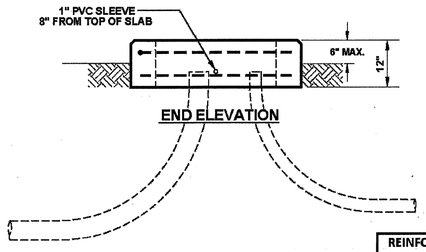
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. GEOTEXTILE FABRIC MAYBE REQUIRED UNDER THE ROADWAY AND /OR THE PARKING AREAS AS REQUIRED BY THE ENGINEER BASED UPON SITE CONDITIONS.

TYPICAL PAVEMENT SECTION

NOT TO SCALE



PLAN



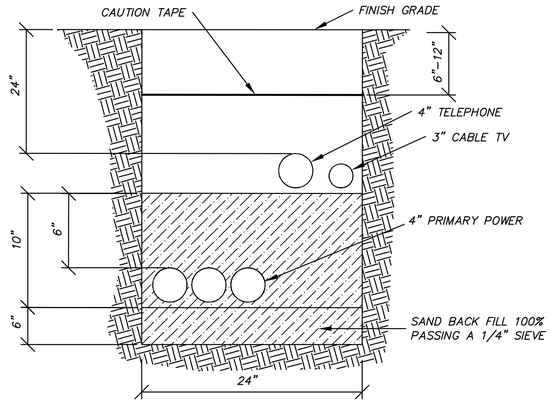
END ELEVATION

REINFORCING SCHEDULE (#6 BAR)			
Type	Qty	Length	Diagram
S1	4	47"	Straight
S2	4	29"	Straight
S3	6	40"	Straight
U1	2	74"	18 / 38 / 18

Total Foundation Weight, 1950 lbs.

SINGLE PHASE TRANSFORMER FOUNDATION 25–75 KVA

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.

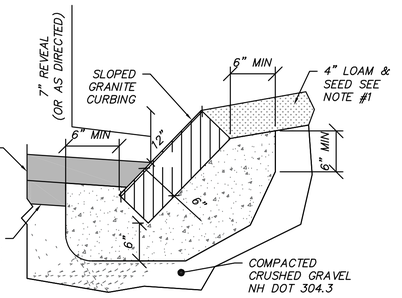
UTILITY TRENCH

NOT TO SCALE

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:

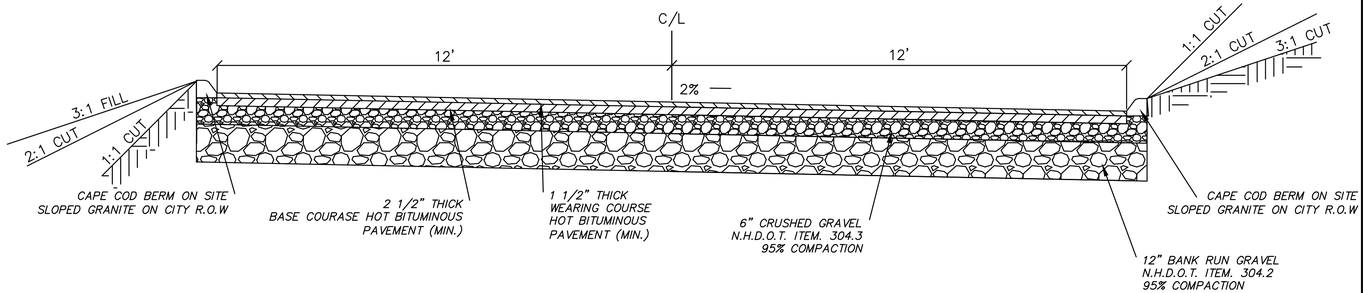
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.



SLOPED GRANITE CURB

CITY OF DOVER – SLOPED GRANITE CURB

NOT TO SCALE



DRIVEWAY CROSS SECTION

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–50

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

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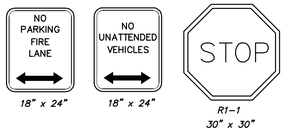
DATE: 6–16–22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO: 21001
FILE: 21001–SITE

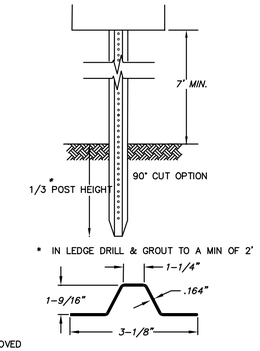
DETAIL SHEET

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12–2
DOVER, NH 03820

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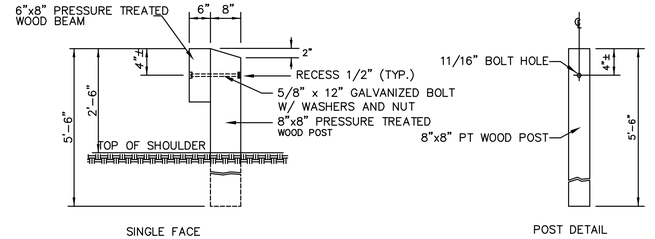




NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

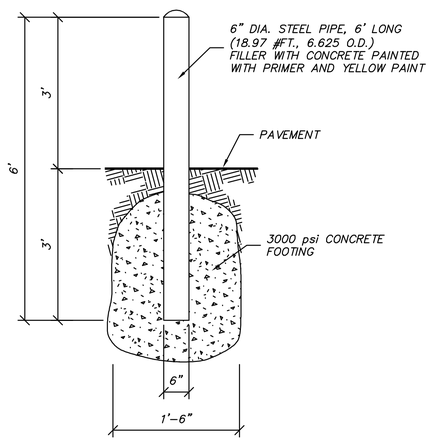
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN
BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

SIGN LEGEND & SIGN POST
NOT TO SCALE



NOTES:
1.) ALL NUTS, BOLTS & WASHERS ARE TO BE GALVANIZED.
2.) ALL SPLICES ARE TO BE MADE AT POSTS.

WOODEN GUARD RAIL DETAIL
NOT TO SCALE



BOLLARD DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
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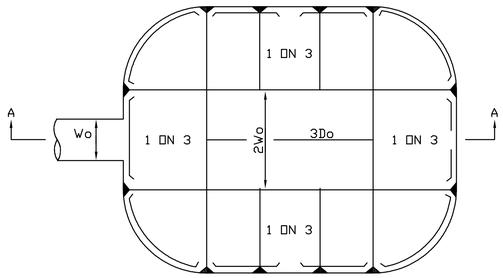
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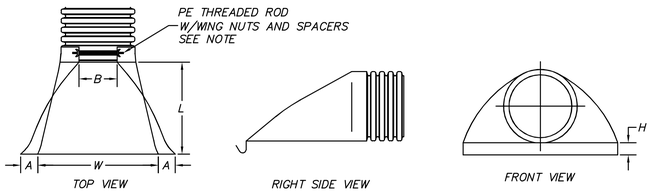
TSB PROPERTIES, LLC.
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THE STORAGE BARN
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MAP D, LOT 12-2
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PLAN VIEW



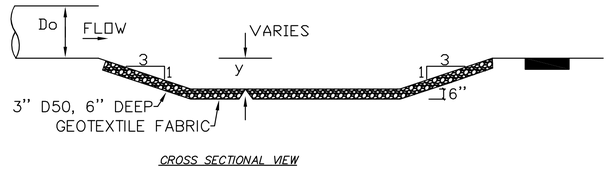
TOP VIEW | RIGHT SIDE VIEW | FRONT VIEW

PART#	PIPE SIZE	A	B (MAX)	H	L	W
1210NP	12 in (300 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	29.00 in (737 mm)

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"–24". 30" & 36" END SECTIONS REQUIRE TWO (2) THREADED RODS FOR ASSEMBLE.

FLARED END SECTION

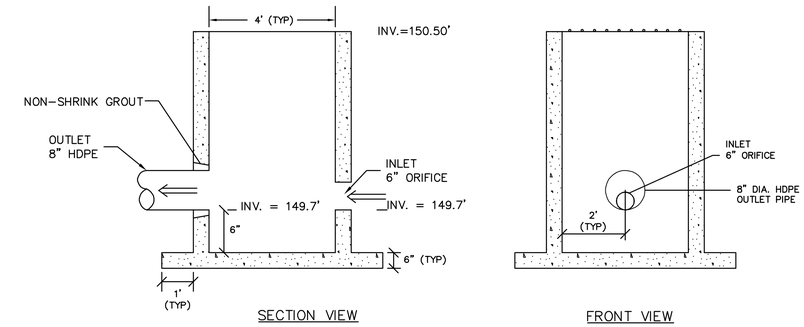
NOT TO SCALE



CROSS SECTIONAL VIEW

PLUNGE POOL DETAILS

NOT TO SCALE



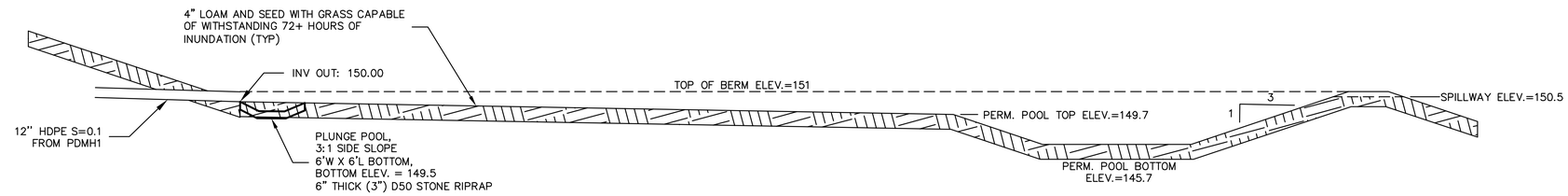
SECTION VIEW | FRONT VIEW

NOTE:

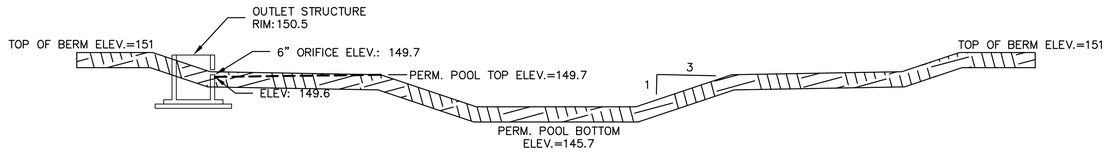
1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.
3) SUMPS SHALL NOT BE GREATER THAN 6 INCHES.

OUTLET STRUCTURE WET POND DETAIL

NOT TO SCALE



SECTION A–A



SECTION B–B

WET POND CONSTRUCTION NOTES

DETENTION AREA EARTH EMBANKMENT:

1 SEE GRADING PLAN FOR BERM WIDTHS.
2 SIDE SLOPES – THREE HORIZONTAL TO ONE VERTICAL (3:1) OR UNLESS OTHERWISE NOTED.
3 FILL MATERIALS SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.
4 FILL MATERIALS SHALL BE A MIXTURE OF STONES (NOT EXCEEDING 6" IN DIAMETER) AND A FINE SANDY SILT MATERIAL.
5 THE SOIL USED FOR THE SEDIMENT FOREBAY BERM SHALL HAVE A MINIMUM PERCOLATION RATE OF 10 MINUTES AN INCH.
6 SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

DETENTION AREA BERM BASE PREPARATION:

1 THE BASE AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED BERM. THE BASE AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF MATERIAL.
2 REMOVE ALL SOFT ORGANIC MATTER, PEAT, DEBRIS AND FOREIGN MATERIAL TO A DEPTH AS NEEDED (1' MIN) TO REACH AN UNYIELDING BASE OF VIRGIN SOIL.

EXECUTION:

1 FILL MATERIALS SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
2 FILL MATERIALS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
3 ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
4 FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. PLACE THE MORE IMPERVIOUS SOIL (HIGHER PERCENTAGE PASSING THE #200 SIEVE) IN THE UPSTREAM TWO–THIRDS (2/3) OF THE BERM. THE MORE GRANULAR SOIL MATERIAL SHOULD BE PLACED IN THE REMAINING DOWNSTREAM ONE–THIRD PORTION OF THE BERM.
5 INSTALL ANTI–SEEP COLLARS CONCURRENTLY WITH FILL MATERIAL PLACEMENT.
6 INSTALL CUT–OFF TRENCH CONCURRENTLY WITH FILL MATERIAL PLACEMENT. THE CUT OFF TRENCH SHALL BE LOCATED AT OR SLIGHTLY UPSTREAM OF THE CENTER LINE OF THE BERM. IT SHALL EXTEND UP THE ABUTMENTS AS REQUIRED AND BE DEEP ENOUGH TO EXTEND INTO A RELATIVELY IMPERVIOUS LAYER.
7 THE CUTOFF TRENCH SHALL HAVE A BOTTOM WIDTH ADEQUATE TO ACCOMMODATE THE EQUIPMENT USED FOR EXCAVATION, BACKFILL AND COMPACTION OPERATIONS. CUTOFF TRENCH TO BE EXCAVATED AND BACKFILLED PRIOR TO PLACING PIPE.
8 CUTOFF TRENCH SIDE SLOPES SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL.

MOISTURE CONTROL

THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.

COMPACTION

FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI–SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS.

MAINTENANCE:

MAINTENANCE IS NECESSARY TO ENSURE THAT THE DETENTION BASINS WILL CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. THE "HOMEOWNERS ASSOCIATION" IS RESPONSIBLE FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA.

1 EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE. IF SUCH ISSUES ARE NOTED THEY SHALL BE RECTIFIED AS SOON AS PRACTICAL.
2 VEGETATION – THE VEGETATED AREAS OF THE BERM SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES SHOULD BE KEPT OFF THE BERM AREA.
3 INLETS AND OUTLETS – SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED.
4 SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE STRUCTURE INLET ELEVATION 101.5' THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

WET POND

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–50

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	DATE	APP'D
2	REV PER 2ND TRC	8–4–22	SJH
1	REV PER TRC	7–7–22	SJH

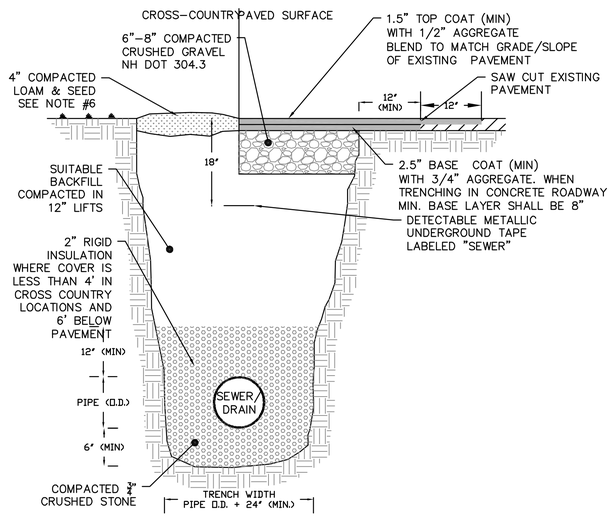
DATE: 6–16–22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001–SITE

DETAIL SHEET

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12–2
DOVER, NH 03820

14

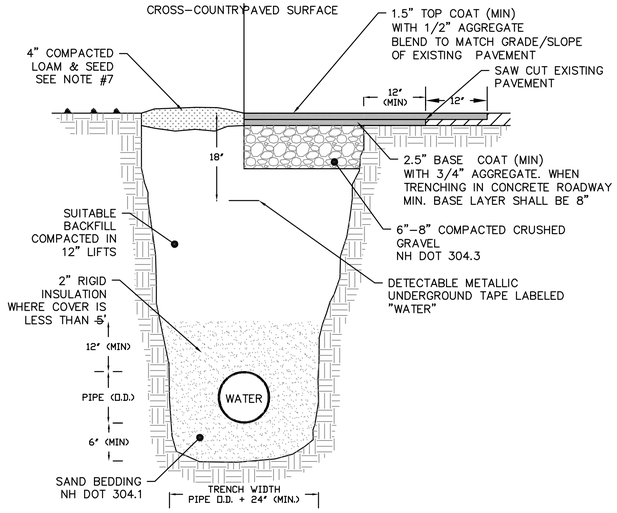


NOTES:

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-TYPICAL SEWER/DRAIN TRENCH

NOT TO SCALE

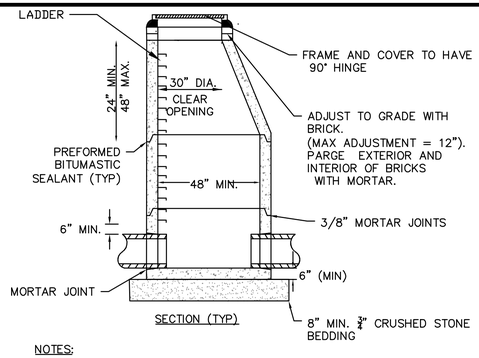


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6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER-WATER TRENCH

NOT TO SCALE



NOTES:

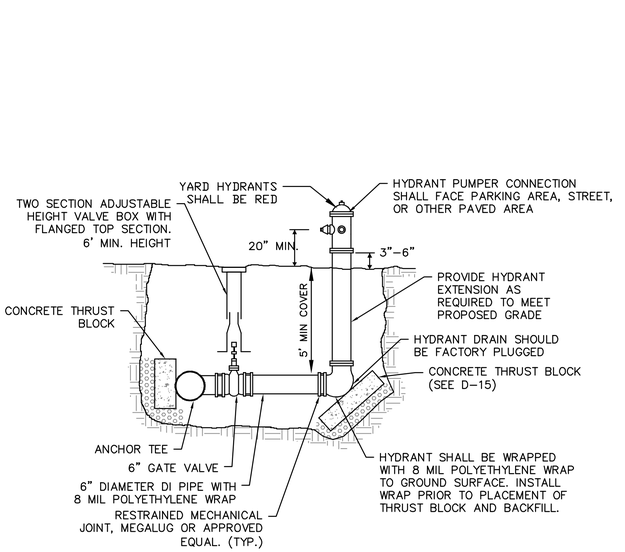
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

CITY OF DOVER-DRAINAGE MANHOLE

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.

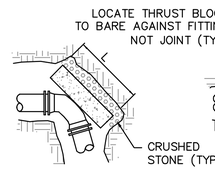


NOTES:

1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.

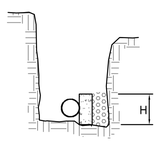
CITY OF DOVER-HYDRANT

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					

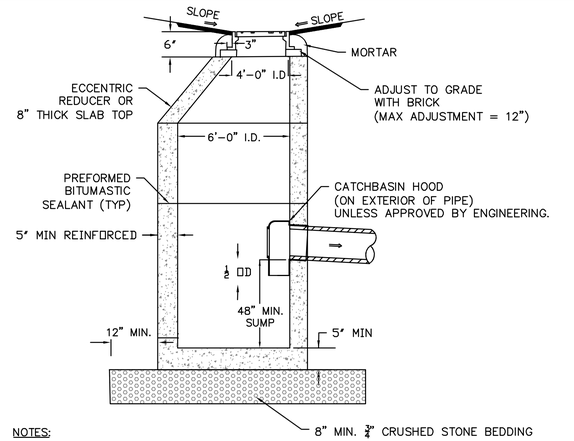


NOTES:

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.

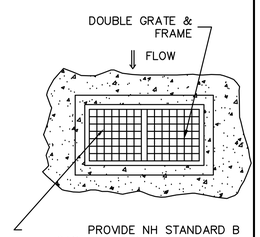
CITY OF DOVER-TYPICAL SEWER/DRAIN TRENCH

NOT TO SCALE



NOTES:

1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.



DOUBLE INLET CATCH BASIN (6' DIA.)

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
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603.749.0443

NO.	REVISION	APP'D	DATE
2	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-16-22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

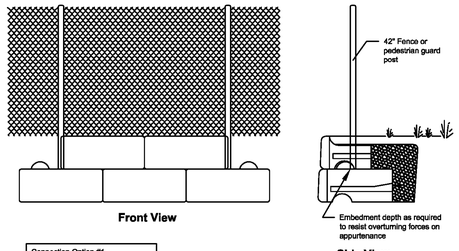
TSB PROPERTIES, LLC.
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THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
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DETAIL SHEET

15

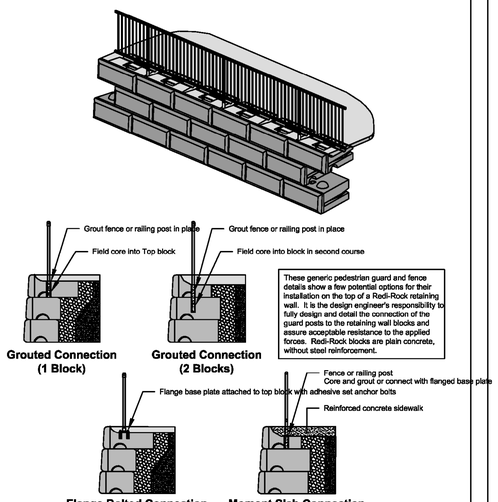
Fence or Pedestrian Guard Connection Locations



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Fence or Pedestrian Guard Connection Locations
FILE:	6 Fence or Pedestrian Guard Connection Locations 062215.dwg

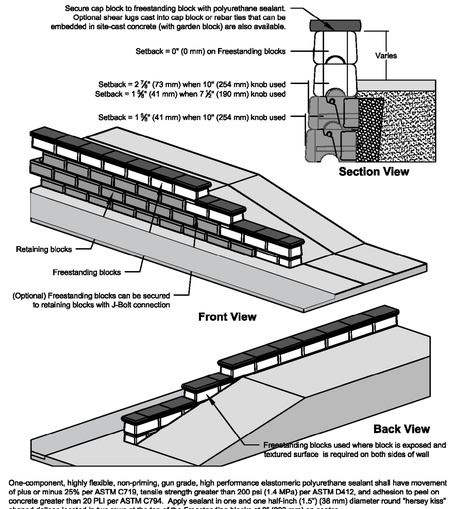
Fence or Pedestrian Guard Connection Options



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DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Fence or Pedestrian Guard Connection Options
FILE:	5 Fence or Pedestrian Guard Connection Options 062215.dwg

Freestanding Blocks with Cap at Top of Wall



One-component, highly flexible, non-priming, gun grade, high performance elastomeric polyurethane sealant shall have movement of plus or minus 25% per ASTM C719, tensile strength greater than 200 psi (1.4 MPa) per ASTM D412, and adhesion to peel on concrete greater than 20 PLI per ASTM C794. Apply sealant in one and one half-inch (1.5") (38 mm) diameter round "hersey kiss" shaped dollops located in two rows at the top of the Freestanding blocks at 8" (203 mm) on center.

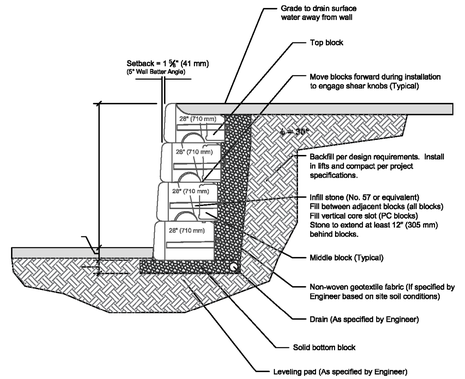
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DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Freestanding Blocks with Cap at Top of Wall
FILE:	3 Freestanding Blocks with Cap at Top of Wall 062215.dwg

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

4 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks



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DRAWN BY:	C. Kruger
APPROVED BY:	J. Johnson
DATE:	June 8, 2015
SHEET:	1 of 1
TITLE:	**Preliminary Wall Section** Fine to Medium Sand or Silty Sand, ϕ = 30° No Live Load Surcharge, No Back Slope, No Toe Slope
FILE:	A_30_B_28_72_cad.dwg

CONTRACTOR TO COORDINATE WITH OWNER FOR FENCE STYLE

GENERAL NOTES

1. SEGMENTAL CONCRETE UNIT RETAINING WALL SHALL BE PROVIDED BY redi-rock ? OR SHEA WALL SYSTEMS OR APPROVED EQUAL.
2. RETAINING WALL DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
3. STRIP VEGETATION AND ORGANIC SOIL FROM WALL AND GEOSYNTHETIC ALIGNMENT.
4. BENCH CUT ALL EXCAVATED SLOPES.
5. DO NOT OVER EXCAVATE UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
6. SITE SOILS ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
7. LEVELING PAD SHALL CONSIST OF COMPACTED COARSE SAND OR CRUSHED GRAVEL, 6" THICK MIN. AS STIPULATED BY THE MANUFACTURER.
8. CONTRACTOR MAY OPT FOR A LEAN CONCRETE PAD. CONCRETE PAD SHALL BE UNREINFORCED, 3" THICK MAXIMUM.
9. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE 6" FOR WALL HEIGHTS UNDER 4 FT. AND 12" FOR WALLS OVER 4 FT. UNLESS SHOWN DIFFERENTLY.
10. FOR UNITS TO BE EMBEDDED, COMPACT FILL IN FRONT OF UNITS AT THE SAME TIME FILL BEHIND UNITS IS COMPACTED.
11. DRAINAGE AGGREGATE SHALL BE INSTALLED DIRECTLY BEHIND THE WALL WITHIN 12" OF THE TOP OF THE WALL. DRAINAGE AGGREGATE SHALL NOT EXTEND BELOW FINAL GRADE IN FRONT OF WALL.
12. COMPACTION SHALL BE TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.(ASTM D-698)
13. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF 3 TESTS PER WALL AND/OR AS DETERMINED BY THE SITE SOILS ENGINEER.
14. COMPACTION WITHIN 3 FT. OF WALL SHALL BE LIMITED TO HAND OPERATED EQUIPMENT.
15. IF REQUIRED SEE ELEVATION DRAWINGS FOR GEOSYNTHETIC TYPE, LENGTH AND LOCATION.
16. IF REQUIRED GEOSYNTHETIC SHALL BE PLACED WITH STRONGEST DIRECTION PERPENDICULAR TO WALL. FOLLOW GEOSYNTHETIC MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
17. CONTRACTOR SHALL DIRECT SURFACE RUNOFF TO AVOID DAMAGING WALL WHILE UNDER CONSTRUCTION.
18. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT, OR TURF SHALL BE INSTALLED IMMEDIATELY AFTER WALL IS COMPLETED.
19. FOLLOW APPLICABLE PROVISIONS AS DICTATED BY THE MANUFACTURER.

1.4 REQUIREMENTS FOR CONTRACTOR PREPARED DESIGN AND PLANS

A. THE FINAL DESIGN TO BE SUBMITTED PRIOR TO AWARD OF CONTRACT AND SHALL INCLUDE DETAILED DESIGN COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE WALL. THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS OUTLINED IN SECTION 1.3 ABOVE. THE FULLY DETAILED PLANS SHALL BE ON PERMANENT, ARCHIVAL QUALITY, 24" X 36" DOUBLE MATTE MYLAR WITH PROJECT NAME, NUMBER AND DESIGN FIRM. THE PLANS TO BE SUBMITTED SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

1. A PLAN AND ELEVATION SHEET OR SHEETS FOR EACH WALL, CONTAINING THE FOLLOWING:
   A. AN ELEVATION VIEW OF THE WALL WHICH SHALL INDICATE THE ELEVATION AT THE TOP OF THE WALL, AT ALL HORIZONTAL AND VERTICAL BREAK POINTS AND AT LEAST EVERY FIFTY (50) FEET ALONG THE WALL. ELEVATIONS AT THE TOP OF LEVELING PADS. THE DESIGNATION AS TO THE TYPE OF UNIT, AND THE LOCATION OF THE ORIGINAL AND FINAL GROUND LINE.
   B. A PLAN VIEW OF THE WALL WHICH SHALL INDICATE THE OFFSET FROM THE CONSTRUCTION CENTERLINE OR BASELINE TO THE FACE OF THE WALL AT ALL CHANGES IN HORIZONTAL ALIGNMENT AND THE LIMIT OF THE WIDEST UNIT.
   C. ANY GENERAL NOTES REQUIRED FOR DESIGN AND CONSTRUCTION OF THE WALL.
   D. ALL HORIZONTAL AND VERTICAL CURVE DATA AFFECTING WALL CONSTRUCTION.
2. ALL DETAILS FOR LEVELING PADS, AS WELL AS ALLOWABLE AND CALCULATED MAXIMUM BEARING PRESSURES.
3. DETAILED DESIGN COMPUTATIONS.
4. THE PLANS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
5. FENCE HEIGHT TO BE 42".

RETAINING WALL SYSTEM

PART 1.0 – GENERAL

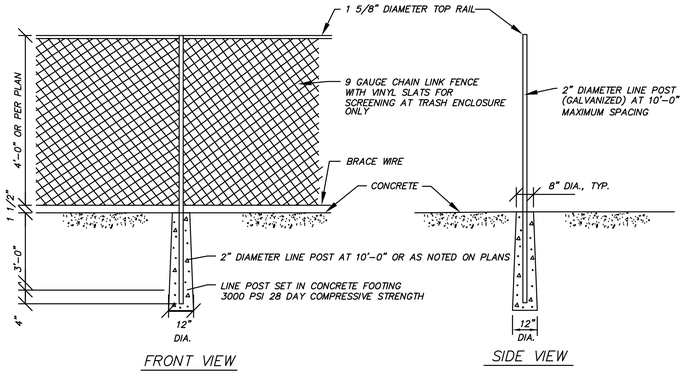
1.1 THIS WORK SHALL CONSIST OF FURNISHING ALL COMPONENTS AND ERECTING A RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON THE PLANS OR AS ORDERED.

1.2 THIS FOLLOWING TYPE OF RETAINING WALL SYSTEMS ARE ACCEPTABLE TO BE USED ON THIS PROJECT:

REDI-ROCK	(603) 428-3218
SHEA WALL SYSTEMS	(800) 696-7432

1.3 STRUCTURAL AND GEOTECHNICAL DESIGN REQUIREMENTS

A. THE DESIGN OF THE WALL SYSTEM SHALL BE BY THE MANUFACTURER.
B. MINIMUM SAFETY FACTORS SHALL BE AS FOLLOWS:
   1. OVERTURNING: 2.0
   2. BASE SLIDING: 1.5
   3. GLOBAL STABILITY: 1.3
   4. GRID PULLOUT:
C. ALLOWABLE NET BEARING PRESSURE = 6 KIPS PER SQUARE FOOT MOIST SOIL UNIT WEIGHT = 125 POUNDS PER CUBIC FOOT
   FRICTION ANGLE = 32 DEGREES
D. DESIGN LOADING SHALL CONSIDER SEISMIC LOADS IN ACCORDANCE WITH THE NEW HAMPSHIRE STATE BUILDING CODE.



CHAIN LINK FENCE DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

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	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

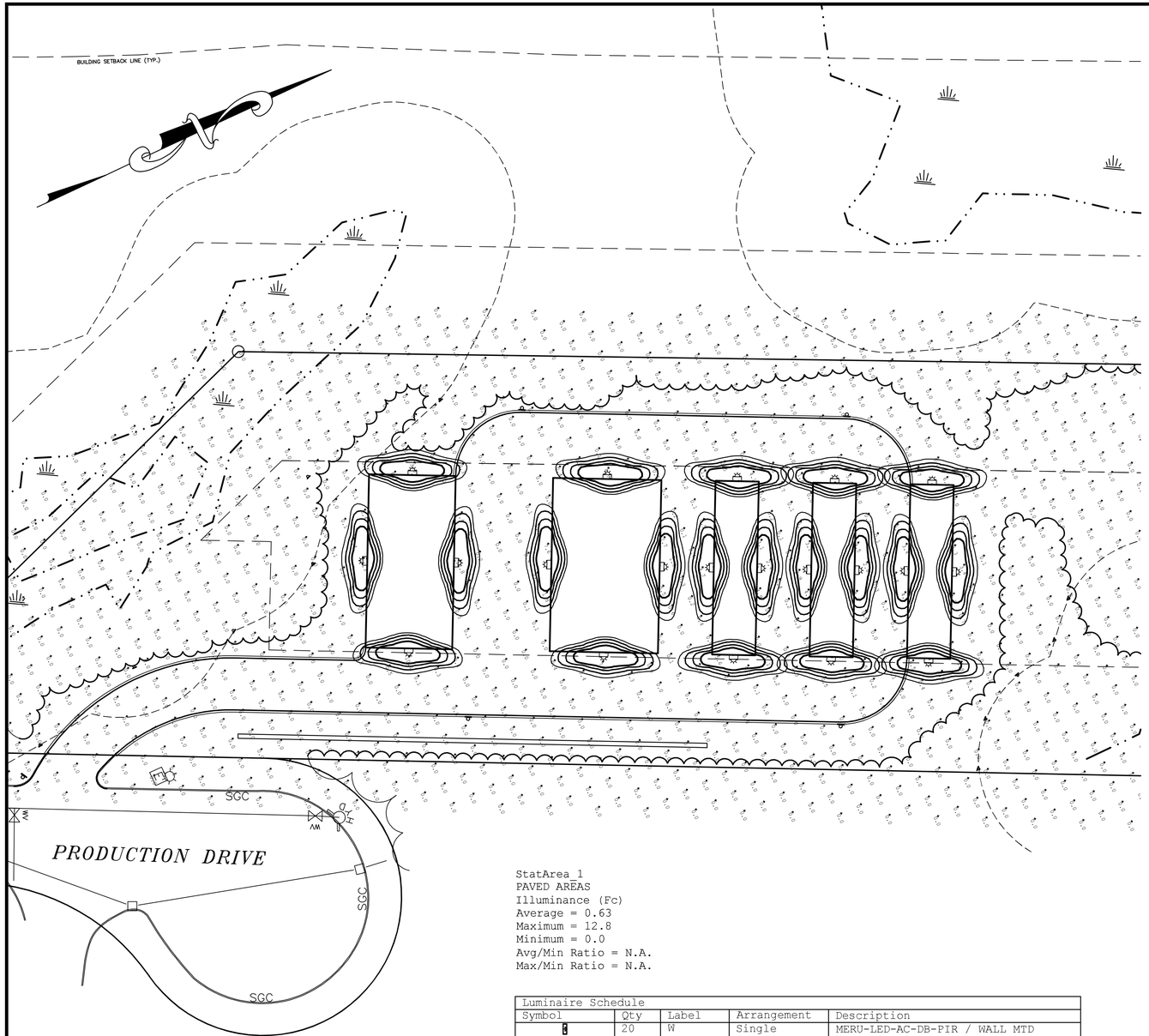
DATE: 6-16-22
SCALE: NOTES
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY: SJH
PROJECT NO: 21001
FILE: 21001-SITE

DETAIL SHEET

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

16



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

StatArea_1
PAVED AREAS
Illuminance (Fc)
Average = 0.63
Maximum = 12.8
Minimum = 0.0
Avg/Min Ratio = N.A.
Max/Min Ratio = N.A.

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
▮	20	W	Single	MERU-LED-AC-DB-PIR / WALL MTD 8' AFG

PRODUCT DESCRIPTION

The MERU Series is an architectural, low-profile outdoor light, offering "normally On" AC and emergency lighting with powerful LED illumination. The housing is fully sealed and gasketed, and has an IP65 rating. Designed for wall mounting with universal K/O pattern in back-plate for easy installation to most standard size junction boxes. Includes a single ½" NPT conduit entry in the top, center of the housing. Illumination provided by 8 high power LEDs which achieve 1,600 lumens in AC and 600 lumens in emergency. LED color at 4000K.

PRODUCT SPECIFICATIONS

CONSTRUCTION

Die cast aluminum housing with superior heat sink • Scratch resistant Polyester powder coat finish • UV resistant polycarbonate lens • Snap-fit housing and mounting plate are held together by four stainless steel clips • Universal mounting pattern molded into the back plate • 1/2" threaded top access for surface conduit installation • Silicone rubber seal with hollow center, shape adaptive design protects the electrical components • Junction box neoprene seal is attached to the back plate for a weather proof installation • Dark Bronze or White textured finish.

ELECTRICAL

Dual voltage 120/277VAC 60Hz input • Solid state charging and switching • Battery low voltage disconnect • AC power indicator and test switch at the bottom of the unit • Standard with Self Diagnostics to monitor proper operation.

LAMPS

Supplied with eight (8) LG SMD 4000K LED'S • L70 > 72,000hours • 17 Watts total (32 Watts with IH option) • 1600 Lumens in AC mode, 600 Lumens in Emergency mode • Full cut-off optics for Dark Sky compliance

BATTERY

Maintenance-free, long-life rechargeable NiCad battery will operate fixture for a minimum of 90 minutes in the event of a power outage • 24 hour recharge after 90 minute discharge.

CODE COMPLIANCE

UL924 • Listed for wet location applications (0˚C-50˚C) • Optional "IH" cold weather package for (-40˚C-50˚C) • IP65 Rated • NFPA 101 Life Safety Code compliant • NEC and OSHA compliant • DLC Listed • RoHS Compliant

WARRANTY

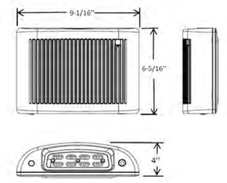
5-year warranty. Product specifications subject to change without notice.

INSTALLATION

MOUNTING

Suitable for indoor or outdoor wall mounting on junction box, or with surface conduit using the supplied 1/2" threaded top access • Mounting plate has molded universal mounting pattern for simple mounting over junction box.





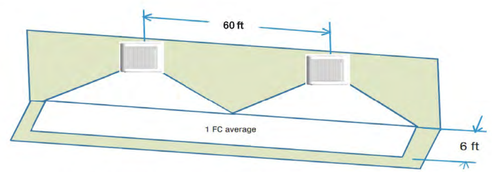
ACEM Model (NiCad Battery Backup)

Integral photocell: Unit operates as a dusk to dawn luminaire and in the event of a power failure as an emergency light.
Remote Switched: The integral photocell can be defeated to allow remote switching for normal operation. In the event of a power failure unit operates as an emergency light.

ORDERING INFORMATION

model	operation mode	housing color	options
MERU-LED	ACEM = General & Emergency Lighting	DB = Dark Bronze	*Self-Diagnostics & Photocell (Included Standard)*
	AC = General Lighting	WH = White	IH = Internal Heater
		BK = Black	PIR = Passive Infra-Red Motion Sensor
Ordering Example: MERU-ACEM-DB		NK = Nickel	

PHOTOMETRICS

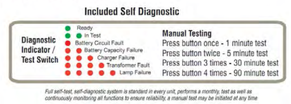


Note: Meets Life Safety Code standard minimum illuminance o/ 0.1 FC and average illuminance of 1.0 FC.
Illustration shown is a guideline for corridor center-to-center with 9 ft mounting height and Minimum 80-50-20 reflectance values.

Mounting Height	Center to center distance
7.2ft	45ft
9ft	60ft
10ft	65ft



SELF DIAGNOSTICS



NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	DATE	APP'D
1	REV PER TRC	7-7-22	SJH
2	REV PER 2ND TRC	8-4-22	SJH

DESIGN BY: CHARRON
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE
DRAWN BY: MJM
SCALE: 1"=30'
DATE: 6-16-22

LIGHTING PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

LEGEND

I.R. (set) o	– IRON ROD W/ I.D. CAP (SET)
⊙ I.P.	– IRON PIPE
□ G.B.	– GRANITE BOUND
⊙ I.R.	– IRON ROD
⊙ I.R.(fnd)	– IRON ROD (FOUND)
D.H.	– DRILL HOLE
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
— · · · —	– EDGE OF WETLAND
O.A.	– OVERALL
TBR	– TO BE REMOVED
VIF	– VERIFY IN FIELD
CCB	– CAPE COD BERM
	– TREELINE

R.O.W.	– RIGHT OF WAY
Ⓓ DMH	– DRAIN MANHOLE
□ CB	– CATCH BASIN
Ⓢ SMH	– SEWER MANHOLE
HYD.	– FIRE HYDRANT
WV	– WATER GATE VALVE
	– TREE
GV.	– GAS VALVE
R=5'	– PROPOSED PAVEMENT RADIUS
PW	– PROPOSED WATER
PE	– PROPOSED ELECTRIC
UGE	– PROPOSED UNDERGROUND ELECTRIC
PS	– PROPOSED SEWER
PD	– PROPOSED DRAINAGE
PG	– PROPOSED GAS
55	– PROPOSED FINISH GRADE
55	– PROPOSED SPOT GRADE

D / 12-1

PARCEL AREA

337,616 S.F.

7.75 Ac.

EDGE OF WETLAND (TYP.)

SELF STORAGE UNIT BUILDING #1 3,200 S.F.

SELF STORAGE UNIT BUILDING #2 4,000 S.F.

SELF STORAGE UNIT BUILDING #3 1,600 S.F.

SELF STORAGE UNIT BUILDING #4 1,600 S.F.

SELF STORAGE UNIT BUILDING #5 1,600 S.F.

40' 45' 50' 25' 20' 20' 20' 80' 80' 80' 80' 80'

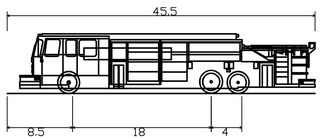
R=30' R=30' 30' 24' 30' 25' R=30' R=5'

R=104' R=80' R=10' R=5'

EOP EOP EUGE SGC SGC SGC

PROPOSED RETAINING WALL

PRODUCTION DRIVE



Dover Ladder	
Overall Length	45.500ft
Overall Width	8.500ft
Overall Body Height	1.488ft
Min Body Ground Clearance	1.488ft
Track Width	8.500ft
Lock-to-lock time	6.00s
Max Wheel Angle	44.00°

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

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	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

DOVER LADDER TRUCK MOVEMENT PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

18

LEGEND

I.R. (set) o	– IRON ROD W/ I.D. CAP (SET)
⊙ I.P.	– IRON PIPE
□ G.B.	– GRANITE BOUND
⊙ I.R.	– IRON ROD
⊙ I.R.(fnd)	– IRON ROD (FOUND)
D.H.	– DRILL HOLE
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
— · · · —	– EDGE OF WETLAND
O.A.	– OVERALL
TBR	– TO BE REMOVED
VIF	– VERIFY IN FIELD
CCB	– CAPE COD BERM
	– TREELINE

R.O.W.	– RIGHT OF WAY
Ⓓ DMH	– DRAIN MANHOLE
□ CB	– CATCH BASIN
Ⓢ SMH	– SEWER MANHOLE
HYD.	– FIRE HYDRANT
WV	– WATER GATE VALVE
	– TREE
GV.	– GAS VALVE
R=5'	– PROPOSED PAVEMENT RADIUS
PW	– PROPOSED WATER
PE	– PROPOSED ELECTRIC
UGE	– PROPOSED UNDERGROUND ELECTRIC
PS	– PROPOSED SEWER
PD	– PROPOSED DRAINAGE
PG	– PROPOSED GAS
55	– PROPOSED FINISH GRADE
55	– PROPOSED SPOT GRADE

D / 12-1

PARCEL AREA

337,616 S.F.

7.75 Ac.

EDGE OF WETLAND (TYP.)

SELF STORAGE UNIT BUILDING #1 3,200 S.F.

SELF STORAGE UNIT BUILDING #2 4,000 S.F.

SELF STORAGE UNIT BUILDING #3 1,600 S.F.

SELF STORAGE UNIT BUILDING #4 1,600 S.F.

SELF STORAGE UNIT BUILDING #5 1,600 S.F.

40' 80' 45' 50' 80' 30' 25' 20' 80' 25' 20' 80' 20' 80'

R=30' R=30' R=5' R=104' R=80' R=10' R=5' R=30'

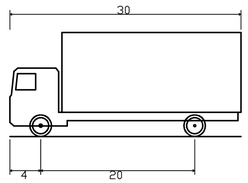
24' 30' 25'

EOP EOP EUGE SGC SGC SGC

PROPOSED RETAINING WALL

PRODUCTION DRIVE

30' - Single Unit Truck



SU-30 – Single Unit Truck

Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-50

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

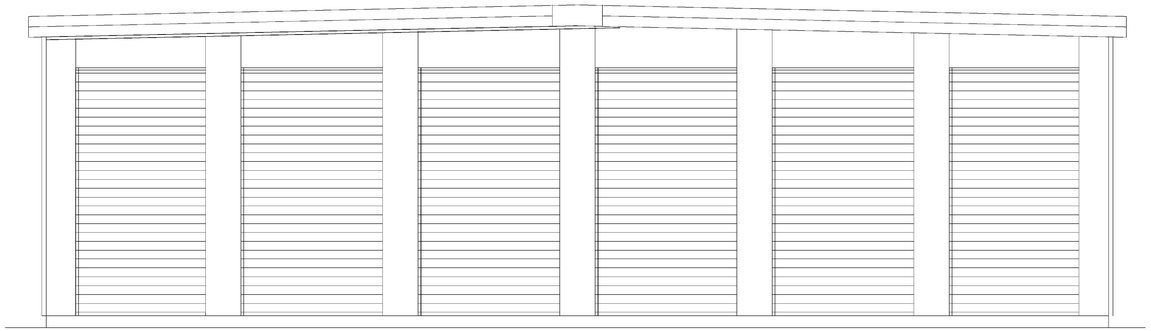
NO.	REVISION	APP'D	DATE
2	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: MJM
DESIGN BY: MJM
APPROVED BY:SJH
PROJECT NO:21001
FILE: 21001-SITE

BOX TRUCK MOVEMENT PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

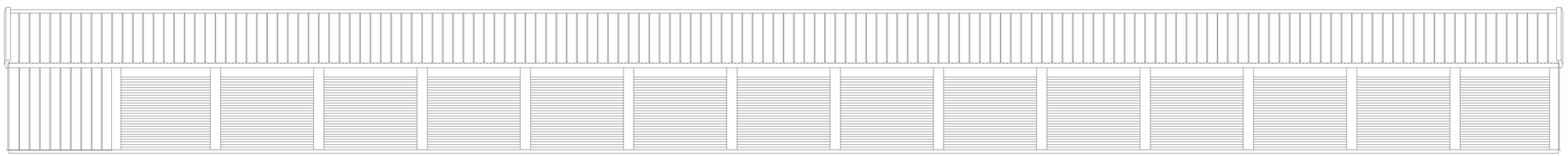
THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820



END WALL ELEVATION







SIDE WALL ELEVATION

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: P22-50

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	REV PER 2ND TRC	SJH	8-4-22
1	REV PER TRC	SJH	7-7-22

DATE: 6-3-22
SCALE: 1"=30'
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY: SJH
PROJECT NO: 21001
FILE: 21001-SITE

DRAFT ELEVATION PLAN

TSB PROPERTIES, LLC.
385 SIXTH STREET
DOVER, NH 03820

THE STORAGE BARN
PRODUCTION DRIVE
MAP D, LOT 12-2
DOVER, NH 03820

A1



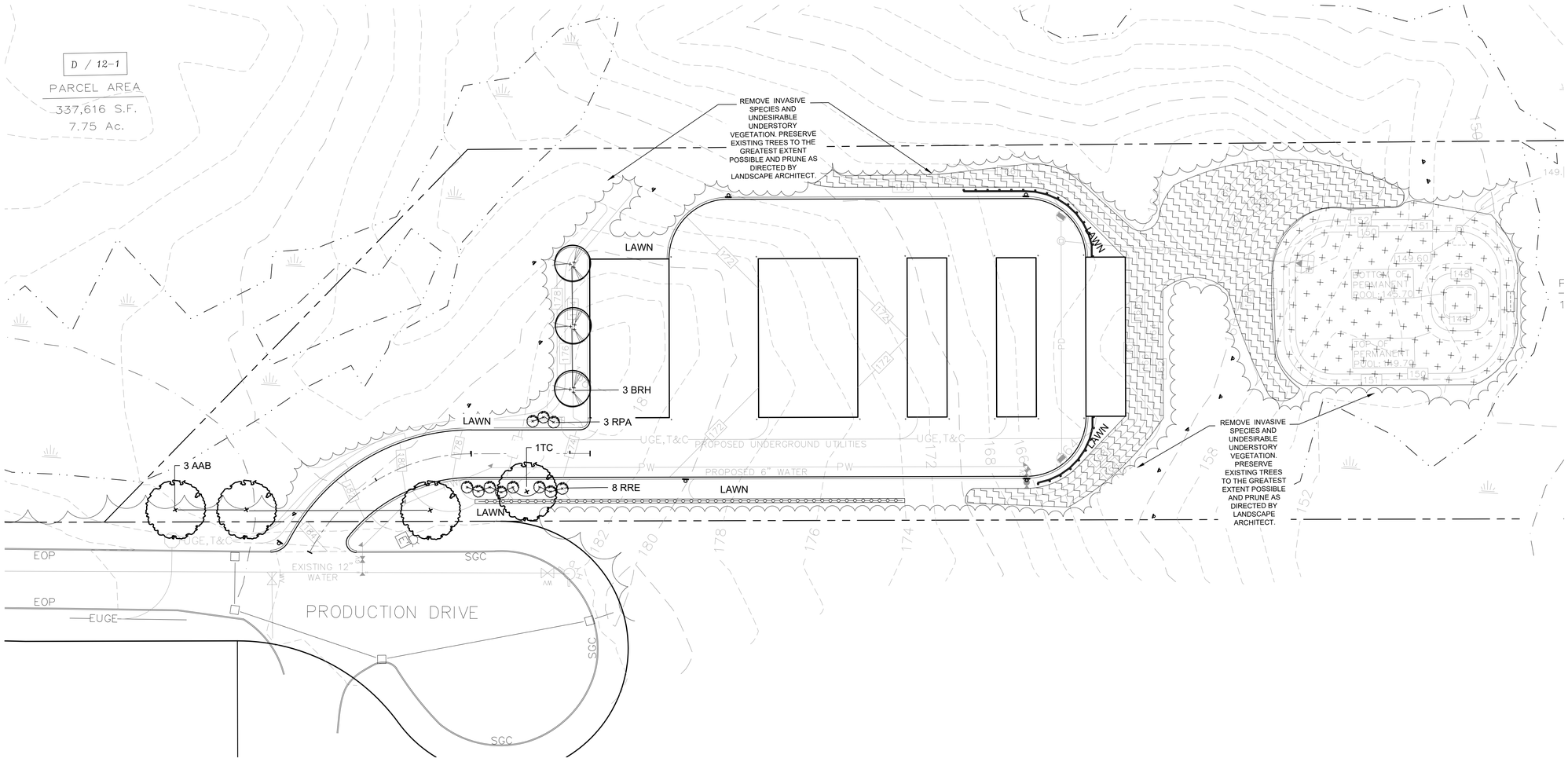
TW DESIGNS

City of Dover Streetscape
The Storage Barn

NOTE: Existing vegetation shall remain as shown on Site Plan

R1

08/22/22



General Notes

1. SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
2. EXISTING VEGETATION SHALL BE PROTECTED DURING SITE CLEARING AND CONSTRUCTION THROUGH THE USE OF CONSTRUCTION FENCING OR OTHER ADEQUATE PROTECTIVE BARRIERS.
3. PLANT LOCATIONS SHOWN ON THE PLANTING PLAN ARE SUBJECT TO FIELD MODIFICATION TO ACCOMMODATE EXISTING CONDITIONS. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT.
4. WITHIN THE LIMIT OF WORK, ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
5. SEE SHEET L2.0 FOR LANDSCAPE DETAILS.
6. CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

Legend

DECIDUOUS SINGLE-STEMMED TREE PLANTING, SEE 1/L2.0

DECIDUOUS MULTI-STEMMED TREE PLANTING, SEE 2/L2.0

SHRUB PLANTING, SEE 3/L2.0

LAWN — LOAM AND LAWN SEED MIX, SEE 4/L2.0

DRY SITE EROSION / RESTORATION SEED MIX, SEE 5/L2.0

LOAM AND WET MEADOW / POND SEED MIX, SEE 6/L2.0

Plant Schedule

DECIDUOUS TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE
3	AAB	ACER FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	3" - 3 1/2" CAL
3	BRH	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	3" - 3 1/2" CAL
1	TC	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	3" - 3 1/2" CAL
7				

SHRUBS

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE
3	RPA	RHODODENDRON PJM ALBA	WHITE PJM RHODODENDRON	2 - 2.5' HT
8	RRE	RHODODENDRON ROSEUM ELEGANS	ROSEUM ELEGANS RHODODENDRON	2 - 2.5' HT
11				

DRAWING SUBMITTED

PLANTING NOTES:

1. PLEASE REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN.

2. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING AND NEW UTILITY LINE LOCATIONS PRIOR TO PLANTING, AND SHALL REPORT ANY CONFLICT TO THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE

3. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN SOCIETY OF NURSERY MEN, INC. LATEST EDITION.

4. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL THE PROPOSED PLANT MATERIAL FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. NO PLANTS SHALL BE PLANTED BEFORE THE ACCEPTANCE OF ROUGH GRADING. THE BASE OF THE FLARE OF THE TREE TRUNK SHALL BE EXPOSED, IF NECESSARY, AND PLACED 2" ABOVE FINISH GRADE.

5. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES WILL BE PLANTS WITH EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER COLOR, LEAF COLOR, FRUIT COLOR, AND TIME OF BLOOM, AS APPROVED BY THE LANDSCAPE ARCHITECT.

6. EXISTING LOAM: STOCKPILING OF EXISTING LOAM IS SPECIFIED ELSEWHERE. REMOVE CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND OTHER FOREIGN MATERIALS.

7. ADDITIONAL LOAM: IF STOCKPILED LOAM QUANTITY IS INSUFFICIENT, PROVIDE LOAM, WHICH IS A "FINE SANDY LOAM", OR A "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS AND BASED ON THE "U.S.D.A. CLASSIFICATION SYSTEM." IT SHALL BE OF UNIFORM COMPOSITION, WITHOUT ADMIXTURE OF SUBSOIL. LOAM SHALL HAVE AN ACIDITY RANGE OF PH 5.8 TO PH 7.0 AND SHALL CONTAIN NOT LESS THAN 4% NOR MORE THAN 10% ORGANIC MATTER AS DETERMINED BY THE LOSS OF IGNITION OF OVEN-DRIED SAMPLES. PROVIDE LOAM WHICH IS FERTILE, FRIABLE, NATURAL LOAM FREE FROM SUBSOIL, CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND ANY FOREIGN MATERIALS.

8. PINE MULCH: PROVIDE PARTIALLY DECOMPOSED MINIMUM SIX MONTH AGED FINELY SHREDDED PINE BARK MULCH WITH DARK BROWN COLOR AND FREE OF WEEDS, EXCESSIVE FINE PARTICLES, STRINGY MATERIAL, AND CHUNKS OF WOOD THICKER THAN ¼". PROVIDE BARK MULCH APPROVED BY THE LANDSCAPE ARCHITECT. APPLY TACKIFIED MULCH TO ALL SEEDED AREAS.

9. ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING.

10. ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING.

11. LESS OTHERWISE INDICATED, DICTATED BY CONDITIONS AT THE SITE, AND DIRECTED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE, BACKFILL SHALL CONSIST OF UNAMENDED SOIL EXCAVATED FROM THE PLANTING PIT. BACKFILL IN 3-4" LAYERS AND CONSOLIDATE EACH LAYER WITH WATER TO ELIMINATE VOIDS AND ARE POCKETS BEFORE PLACING SUBSEQUENT LAYERS. CONTINUE UNTIL BACKFILL HAS REACHED FINISHED GRADE. WATER THOROUGHLY WHEN EXCAVATION IS BACK FILLED AND CONTINUE WATERING UNTIL SATURATED. IF EXISTING UNAMENDED SOIL IS NOT ACCEPTED, PROVIDE PLANTING SOIL MIXTURE CONSISTING OF 7 PARTS LOAM AND 1 PART HUMUS. MIX QUANTITY OF FERTILIZER AND SOIL AMENDMENTS AS RECOMMENDED BY SOIL ANALYSIS AND APPROVED BY THE LANDSCAPE ARCHITECT.

12. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.

13. LOAMING: LOOSEN SUBGRADE AND EXISTING LOAM AREAS BY DISCING OR ROTOTILLING TO MINIMUM DEPTH OF 6". REMOVE STONES GREATER THAN 2" AND ALL RUBBISH AND DEBRIS. PLACE LOAM IN TWO EQUAL LIFTS MIXING FIRST APPLICATION INTO LOOSENED SUBGRADE THEN PLACE SECOND LIFT TO BRING LOAM AFTER SETTLING AND COMPACTING TO THE LINES AND GRADES SHOWN IN THE CONTRACT DOCUMENTS, 6" DEEP MINIMUM. DO NOT HANDLE LOAM OR SUBSOIL IF IT IS WET OR FROZEN.

14. AFTER LOAM HAS BEEN SPREAD, IT SHALL BE CAREFULLY PREPARED BY SCARIFYING AND HAND RAKING. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, STUMPS, LITTER AND FOREIGN MATTER, AND STONES OVER ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE LOAM. LOAM SHALL ALSO BE FREE OF SMALLER STONES IN EXCESSIVE QUANTITIES AS DETERMINED BY THE LANDSCAPE ARCHITECT.

15. FINE GRADING: SET SUFFICIENT GRADE STAKES FOR CHECKING THE FINISHED GRADES. STAKES MUST BE SET AT THE BOTTOM AND TOP OF SLOPES. GRADES SHALL BE ESTABLISHED THAT ARE ACCURATE TO 1/10TH OF A FOOT EITHER WAY. CONNECT CONTOURS AND SPOT ELEVATIONS WITH AN EVEN SLOPE. ALL GRADING WILL INSURE DRAINAGE AWAY FROM STRUCTURES.

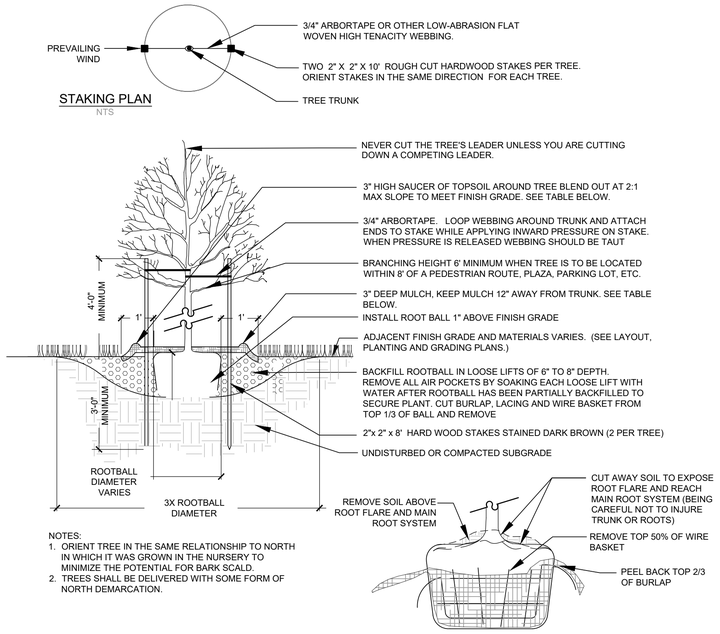
16. FINE GRADE LAWN AREAS TO SMOOTH, FREE DRAINING, EVEN SURFACES WITH FINE TEXTURE. ROLL, RAKE AND DRAW LAWN AREAS TO FLATTEN RIDGES AND FILL DEPRESSIONS, EXCEPT AT SELECT AREAS SHOW ON THE DRAWINGS. CONTROL MOISTURE CONTENT TO MAINTAIN OPTIMUM CONDITIONS, BUT DO NOT CREATE A MUDDY CONDITION.

17. ROLLING - TYPICAL: ROLL THE ENTIRE AREA WITH A HAND ROLLER WEIGHTING NOT MORE THAN 100 POUNDS. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM AND THE SURFACE SHALL BE REGARDED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE OR TO THE SHAPES AND CONFIGURATIONS AS SHOWN ON THE DETAILS.

18. THE SILT FENCE SHALL BE LIMIT OF SEEDING UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL AREAS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE SEEDED AS INDICATED ON THE DRAWINGS.

19. IN CASE OF DISCREPANCIES BETWEEN THE QUANTITIES SHOWN ON THE PLANT SCHEDULE AND THE QUANTITIES SHOWN ON THE PLANTING PLAN, THE QUANTITIES ON THE PLANTING PLAN SHALL BE PROVIDED BY THE CONTRACTOR.

C:\Users\facio\Documents\Clients\Ironwood\Storage Barn_Dover\ID-SP-220819_storage barn.dwg, Kate Osgood 8/19/2022 1:10:38 PM

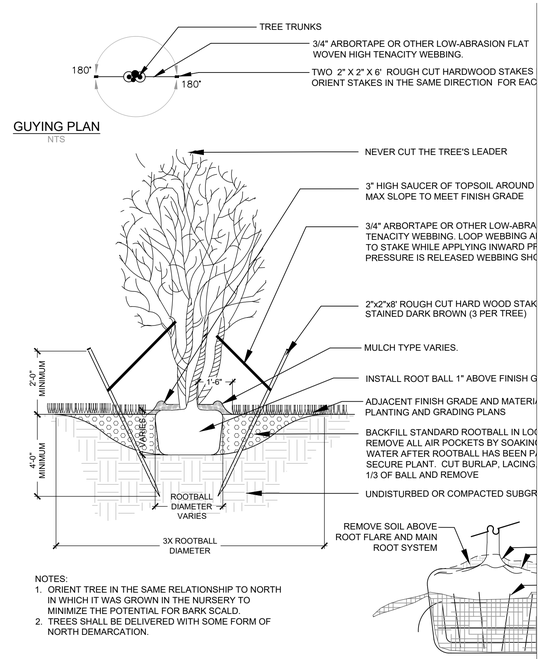


Deciduous Tree Planting

Not to Scale

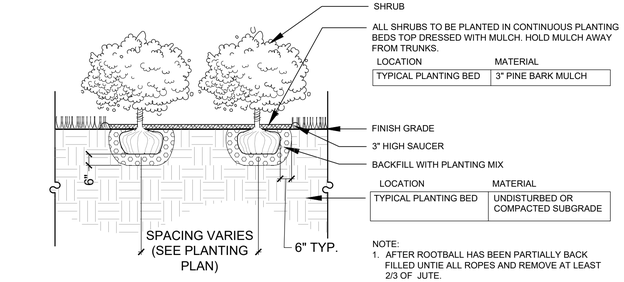
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1 / L2.0



Deciduous Multi-Stemmed Tree Planting

Not to Scale

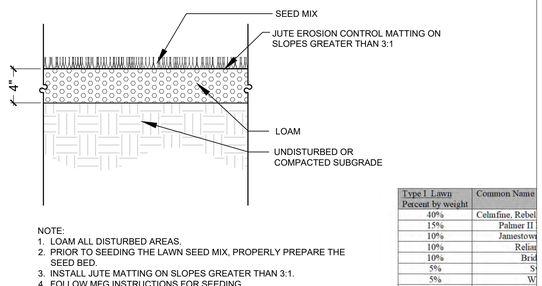


Shrub Planting

Not to Scale

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3 / L2.0

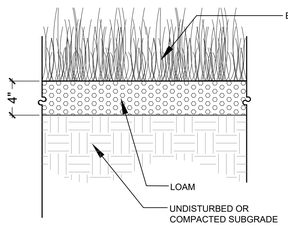


Type I Lawn Percent by weight	Common Name
40%	Celmfine, Rebel
15%	Palmer II
10%	Jamestown
10%	Relia
10%	Brid
5%	S
5%	W
5%	

Apply at a rate of 265/lbs/acre

Loam and Lawn Seed Mix

Not to Scale



New England Erosion Control/Restoration Mix for Dry Sites

Botanical Name	Common Name	Indicator
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Lolium multiflorum	Annual Ryegrass	
Lolium perenne	Perrenial Ryegrass	
Schizachyrium scoparium	Little Bluestem	FACU
Panicum virgatum	Switch Grass	FAC
Sorghastrum nutans	Indian Grass	UPL

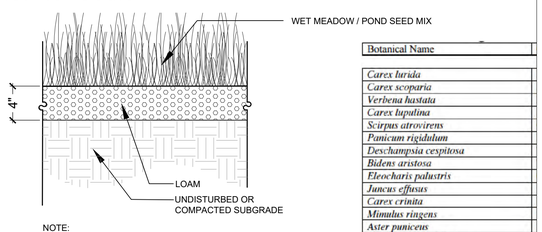
Apply at rate of 231bs/acre. New England Wildflower Mix available at New England Wetland Plants, Ma: www.newp.com . Approved equal may be substituted.

Dry Site Erosion / Restoration Seed Mix

Not to Scale

©IRONWOOD 2022

5 / L2.0



Botanical Name
Carex lurida
Carex scoparia
Verbena hastata
Carex lupulina
Scirpus atrovirens
Panicum rigidulum
Deschampsia cespitosa
Bidens aristosa
Eleocharis palustris
Juncus effusus
Carex crinita
Mimulus ringens
Aster puniceus
Eupatorium perfoliatum
Glyceria canadensis
Asclepias incarnata
Helenium autumnale
Penthorum sedoides

Apply at rate of 231bs/acre. New England Wildf
Wetland Plants, Ma: www.newp.com .

Loam and Wet Meadow / Pond Seed M

Not to Scale

DRAWING SUBMITTED

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-67

Application Type:	Conditional Use Permit – Wetlands & Conservation Districts
Applicant(s):	Public Service Company of New Hampshire, d/b/a/Eversource Energy
Owner(s):	Public Service Company of New Hampshire, d/b/a/Eversource Energy
Location:	Utility ROW between Oak Street to south of Atlantic Avenue over lots identified as Assessor's Map 24, Lot 132 & Map 25, Lots 43B & 80
Meeting Date:	September 27, 2022

INTENT: The applicant seeks a CUP to permit 2,100 sf of temporary wetland impact and 14,900 sf of temporary impact to wetland buffers within the Wetlands Protection & Conservation Districts in order to replace six deficient wooden utility poles in the Utility ROW.

AGENDA ITEM #: 4-A

ACREAGE: 2,100 sf of temporary wetland impact and 14,900 sf of temporary impact to wetland buffers

ZONING DISTRICT: Gateway & R-12 and R-40, Wetlands Protection & Conservation Overlay Districts

EXISTING LAND USE: Electric Transmission Line

PROPOSED LAND USE: Electric Transmission Line

SURROUNDING LAND USE: Residential, Commercial, and Vacant

ZBA ACTION: None

ATTACHMENTS: CUP Application materials

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by verified mail to all abutters for this meeting

PERMITS REQUIRED: NHDES Utility Maintenance Activity SBN

WAIVER(S) REQUESTED: N/A

CONSERVATION COM: September 12, 2022

Summary of Request and Background

The proposed Conditional Use Permit (CUP) is required in the replacement of six (6) utility poles along the R32 (5 poles) and R371 (1 pole) Electric Transmission Lines that have been identified as deficient during recent line inspections. The wetland and wetland buffer impacts will be temporary impacts in order to position equipment and machinery to replace the existing structures.

This CUP permit application was endorsed by the Conservation Commission at their September 12, 2022 meeting (draft minutes attached).

CONSISTENCY WITH LAND USE REGULATIONS:

The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

The Conservation District Ordinance §170.27.C.(1) provides for Conditional Use Permits for "…utility rights-of-way, communications equipment, easements, including power lines and pipe lines, if essential to the productive use of land not so zoned and if so located and constructed as to minimize any detrimental impact of such uses upon the wetlands or other environmentally sensitive areas, where it is physically impossible to locate such ways over land not so zoned. ...".

Planning staff feels that the applicant considered the criteria and attempted to create minimal wetlands disturbance on the site. The applicant's detailed CUP application clearly demonstrates the understanding of the requirements and compliance to the criteria of §170-27.F.(1)(a)-(e) as well as, §170.27.C.

STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

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

1. Copies of the NHDES Permit be submitted to the Planning Department and added to the plan set coversheet; and
2. Add the following notes and items to the final plan set:
   - 2.1. Utility Easement Holders:
     Name
     Street address
     Municipality, State, Zip Code

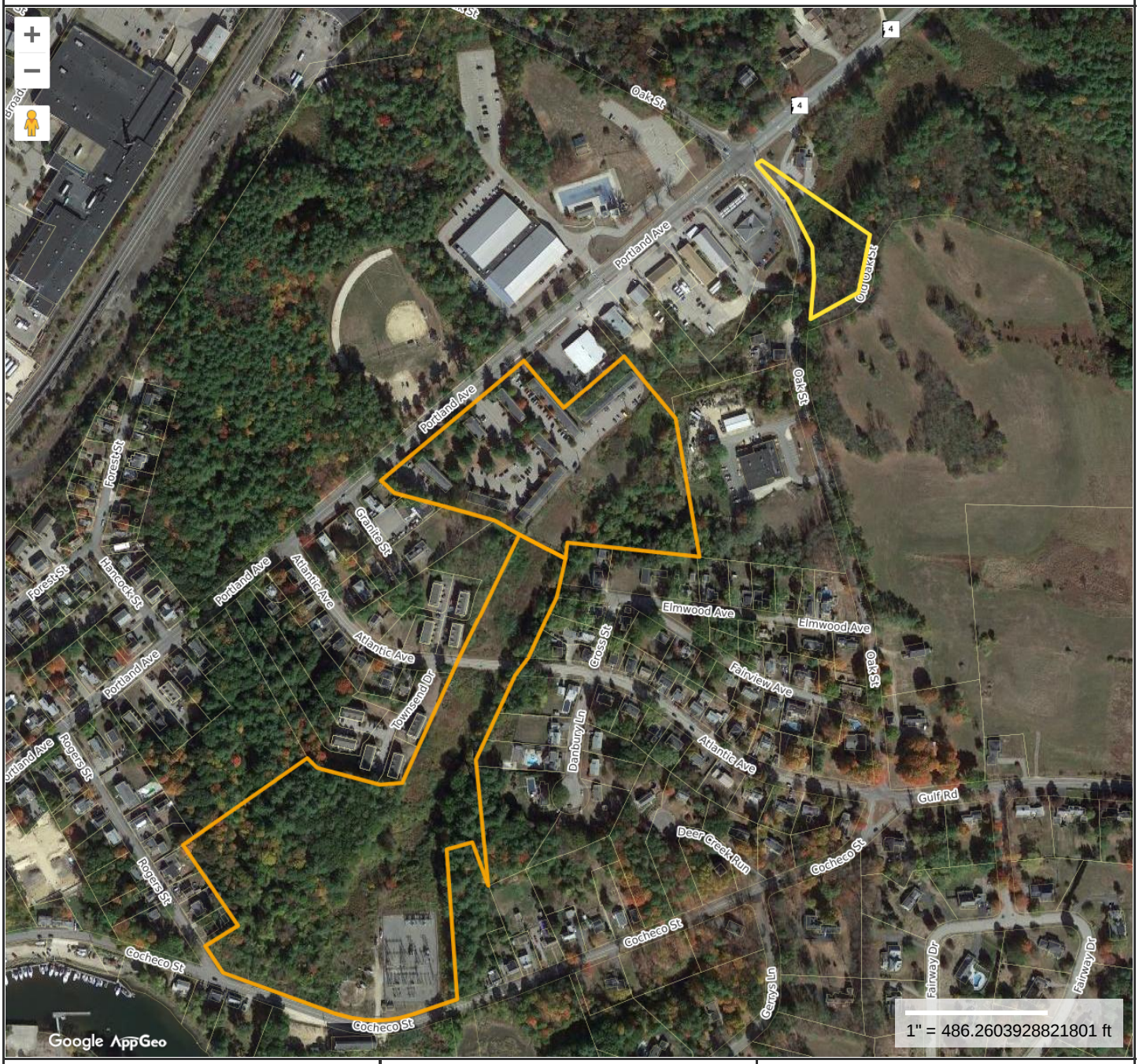
     _____
     Authorized Signature;
   - 2.2. The limits of construction disturbance that are located in or within the 50 ft. of Conservation and Wetland Districts shall be staked, flagged and clearly identified prior any earth disturbing activity occurs;
   - 2.3. File # (P22-67) to all sheets;

2.4. The following federal and state permits have been issued for the subject property: (*List permit type, number and date of issuance.);*

2.5. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp and provide proof to the Planning Department; and

2.6. Provide 2" x 2" blank area for Planning Board Approval stamp in the lower right corner.

P22-67 / COND-2022-0028 PSNH ROW Oak Street & Atlantic Avenue



Property Information

Property ID	25080-000000
Location	1 OAK ST
Owner	CRE JV MIXED FIVE NH BRANCH HOLDINGS LLC
Land Use	337
Zoning Code	C*

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 5/3/2021
Data updated Daily

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

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: Public Service Company of NH (PSNH) c/o Jeremy Fennell Telephone # 603-634-3396

Address of Applicant: 13 Legends Drive, Hooksett, NH 03106

E-Mail Address: jeremy.fennell@eversource.com

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

Address of Property Owner: SAME AS APPLICANT (PSNH owns the easement rights to the utility right-of-way)

PROPERTY INFORMATION

Assessor's Map # 24 and 25 Lot(s) # Various - existing and actively maintained utility right-of-way (ROW)

Address of Property: Existing utility ROW between Oak Street to south of Atlantic Avenue.

Zoning District(s) G (Gateway) along the northern portion and R-12 (Medium-Density Residential) Overlay District(s) Conservation District (CD) and Wetlands Protection District (WPD)

Existing Use of Property: Existing and actively maintained electric distribution line ROW.

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:

The proposed project involves the replacement of 6 wooden utility poles in Dover (5 along the 32 Distribution Line and 1 along the 371 Distribution Line) that have been identified as deficient during recent line inspections. These poles will be replaced with weathered steel either in the same location or within 10 feet of the existing poles in accordance with current utility standards. The proposed project is part of Eversource's on going maintenance conducted to ensure reliable electric service for their customers without interruption from preventable outages. This work will require temporary impacts to wetlands and streams through the use of timber matting at unavoidable access road and work pad crossings. No permanent natural resource impacts are proposed. All temporary impacts will be stabilized and restored post-construction, as dictated by site conditions. The use of timber mats often allows for natural vegetation to reestablish during the next growing season.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: **NH Department of Environmental Services (NHDES) Utility Maintenance Activity Statutory Permit by Notification (SPN) is currently being drafted. The City will receive a copy of this filing.**

Name of Professional That Prepared Plans: Kristopher Wilkes, CWS, CPESC

Address 2 Bedford Farms Drive (Suite 200), Bedford, NH 03110 Telephone #: 603-391-3944

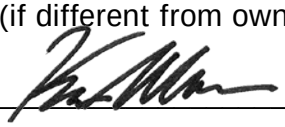
Professional License #: CWS 288 E-mail address: kwilkes@vhb.com

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.

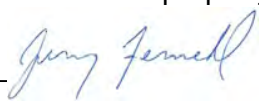
Signature of Property Owner:  (PSNH) Date: 09/01/2022

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

Signature of Agent:  (VHB) Date: 09/01/2022

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: 09/01/2022

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
Existing Utility ROW (Easement Rights)		PSNH d/b/a Eversource Energy	13 Legends Drive, Hooksett, NH 03106

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Jeremy Fennell	PSNH d/b/a Eversource Energy	13 Legends Drive, Hooksett, NH 03106

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kris Wilkes	VHB	2 Bedford Farms Drive (Suite 200), Bedford, NH 03110

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

P22-67 **COND-2022-0028** **ROW ATLANTIC AVENUE & OAK STREET**

Property ID	Owner 1	Owner 2	Owner Address 1	City	State	Zip
26006-000000	121 BROADWAY LLC		340 CENTRAL AVE STE 202	DOVER	NH	03820
25043-H00000	159 PORTLAND AVE LLC		161 PORTLAND AVENUE	DOVER	NH	03820
25036-000000	ADAMS GLENN L TRUSTEE	ADAMS LAURA L IRREVOCABLE TRUST	6 ELMWOOD AVE	DOVER	NH	03820
27272-000000	ANDREWS LEONARD C TRUSTEE	ANDREWS ANCESTRAL GRANTOR TRUST	2 ROSE ST	DOVER	NH	03820-311
25013-000000	BRONNER JOSHUA R		24 THATCHER WAY	BARRING	NH	03825-748
25049-000000	BUCKOVITCH BROOKE S &	BROWN AARON E	135 PORTLAND AV	DOVER	NH	03820
27279-000000	COLOKATHIS CLAUDETTE B		67 OAK ST	DOVER	NH	03820
27278-000002	COONS KAREN		142A BROADWAY ST	DOVER	NH	03820
27272-A00000	DESROSIERS JAMES C	DESROSIERS CHERYL L	69 SEAVERNS BRIDGE RD	AMHERST	NH	03031
25046-000000	DIVERSIFIED BUILDING AND MAINTENANCE LLC		209 SIXTH ST	DOVER	NH	03820-230
25043-E00000	DUSTON BARBARA	DUSTON ROBERT L	153 PORTLAND AVENUE	DOVER	NH	03820
25039-000000	FRENCH SARA E & MATTHEW S	FRENCH VALERIE A	14 14A ELMWOOD AV	DOVER	NH	03820
25009-000000	GAGNE NORMAN TRUSTEE	GAGNE FAMILY REVOCABLE TRUST	2 CROSS STREET	DOVER	NH	03820
25009-A00000	GAGNE NORMAN TRUSTEE	GAGNE FAMILY REVOCABLE TRUST	2 CROSS ST	DOVER	NH	03820
27280-000000	HOLLAN-MORITZ HANNAH		65 OAK ST	DOVER	NH	03820
27274-000000	HORAN TIMOTHY P &	BRYAR MEREDITH L	132 BROADWAY	DOVER	NH	03820-323
25043-A00000	HOT ROD CITY LLC		390 SIXTH ST	DOVER	NH	03820
25043-D00000	HUBBARD-LEARY LLC		89 OAK ST	DOVER	NH	03820
25011-000000	KING NATALIE A		5 CROSS ST	DOVER	NH	03820
27277-000000	MARCHIO PAULA	GAGNE JODIE & JOSEPH	138 BROADWAY	DOVER	NH	03820
25035-000000	MESERVE ROBERT H	MESERVE PIPER A	2 ELMWOOD AV	DOVER	NH	03820
25047-000000	MUSTANG PROPERTY LLC		PO BOX 395	DOVER	NH	03821
27279-A00000	NGUYEN MAI THI XUAN TRUSTEE	NGUYEN MAI THI 2014 REVOCABLE TRUST	69 OAK ST	DOVER	NH	03820
25048-000000	NICHOLS DOUGLAS B &	NICHOLS REBECCA L	137 PORTLAND AVE	DOVER	NH	03820
27275-000000	OTT KAREN A		134 BROADWAY	DOVER	NH	03820
27273-000000	PAOLINI ROBERT & NICHOLAS TRUSTEES	NRP REALTY TRUST	54 DOVER POINT RD STE 103	DOVER	NH	03820
25038-000000	PARKER CHRISTOPHER		104 WASHINGTON ST UNIT 431	DOVER	NH	03820
25043-C00000	PFP ASSC LIMITED PARTNERSHIP		56 KEARNEY RD	NEEDHAM	MA	02494
24132-000000	PUBLIC SERV CO OF N H		PO BOX 330	MANCHES	NH	03105-033
27281-000000	RAINERI LAURA G		63 OAK ST	DOVER	NH	03820
27281-000000	RAINERI LAURA G		63 OAK ST	DOVER	NH	03820
27278-000001	RENSSELAER PROPERTIES LTD		PO BOX 953	NORTH HA	NH	03862
25045-001000	STF DEVELOPMENT CORP		242 CENTRAL AVE	DOVER	NH	03820
27278-000000	THE OAKS AT BROADWAY		PO BOX 953	NORTH HA	NH	03862
25037-000000	TOWLE DEBORAH L		8 ELMWOOD AVE	DOVER	NH	03820
25045-A00001	TRI CITY BUILDERS INC		242 CENTRAL AVE	DOVER	NH	03820
25043-F00000	WC INVESTMENTS LLC		4 ALEX WY	STRATHA	NH	03885
27276-000000	HELLO BROADWAY LLC		PO BOX 504	PORTSMC	NH	03801
	PUBLIC SERV CO OF N H	C/O JEREMY FENNELL	13 LEGENDS DRIVE	HOOKSET	NH	03106
	KRISTOPHER WILKES, CWS, CPESC		2 BEDFORD FARMS DRIVE SUI	BEDFORD	NH	03110

September 1, 2022

Ref: 52907.00 and 52908.00

Ms. Gina Cruikshank
Dover Planning Board Chair
City Hall
288 Central Avenue
Dover, NH 03820

Re: City of Dover Conditional Use Permit Application
PSNH 32 & 371 Electric Distribution Lines Maintenance/Pole Replacements, Dover, NH

Dear Ms. Cruikshank:

The Public Service Company of New Hampshire (PSNH) d/b/a Eversource Energy proposes to replace 141 utility poles long the existing 32 and 371 Distribution Lines that share a utility right-of-way (ROW) in Dover, Rollinsford, Somersworth, and Rochester, NH that have been identified as deficient during recent line inspections. Of this total, six (6) utility poles (5 along the existing 32 Electric Distribution Line and 1 along the existing 371 Electric Distribution Line) are located in Dover. This project qualifies for a Conditional Use Permit (CUP) approval as a power line project within a utility right-of-way (ROW) within the Conservation and Wetland Protection Overriding Districts in accordance with *Article VIII Sections 170-27(C)(1)* and *170-27.1(F)(1),* respectively, of the City's Zoning Ordinance (as amended 10/13/2021). This CUP Application is being submitted by VHB on behalf of PSNH in accordance with *Sections 170-27* and *170-27.1* of the zoning ordinance and is required for the proposed work to allow temporary impacts to wetlands and streams (and their associated buffers) protected under the Conservation and Wetland Protection Districts.

In accordance with NH RSA 482-A:3, XV, routine utility maintenance work is exempt from the standard wetland permitting process at the state level. However, PSNH is required to submit a Utility Maintenance Activity Statutory Permit-by-Notification (SPN) application to New Hampshire Department of Environmental Services (NHDES) to cover the temporary wetland impacts associated with use of timber matting within wetlands required to complete the proposed pole replacement work. VHB is currently assisting PSNH with this filing. As part of the permitting process, the City of Dover will receive a copy of this filing concurrent with the NHDES submission.

Existing Conditions

The project involves an approximately 150-foot-wide maintained overhead electric ROW corridor that contains two distribution lines in Dover with the 32 Line to the east and the 371 Line to the west. There is also a third distribution line observed along the eastern edge of the ROW adjacent to existing businesses and apartment complexes. The project ROW is comprised of Eversource owned-property or Eversource-controlled easements. The project ROW is intersected by Oak Street in the north near the Dover-Rollinsford line and Atlantic Avenue in the south between 32 Line Poles 4 and 5. The project ROW contains dense emergent and scrub-shrub wetland and upland vegetation that is maintained (cut) on a three to five-

2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495

year cycle to achieve vertical clearance requirements between ground vegetation and overhead lines. The surrounding land use is mostly commercial and residential with some forested patches.

Project Description

PSNH intends to replace six (6) wooden utility poles (5 along the 32 Line and 1 along the 371 Line) in Dover with weathered steel in the same configuration (either in the same location or within 10 feet of the existing poles) in accordance with current utility standards. Weathered steel poles are more resilient to insect and woodpecker damage and pole rot and can further withstand typical New Hampshire storms and severe weather events. Additionally, associated guy support wires and anchors will be replaced. On average, the height of the new poles will increase between 5 to 10 feet. The purpose of the height increase is to gain compliance with current regulatory standards, meet safety clearance requirements, accommodate the site topography, and minimize environmental impacts. Construction is tentatively scheduled to commence in the fall of 2022. Refer to the attached **Project Plans** for more information.

Since the proposed pole replacement work will occur within the limits of an existing cleared and actively maintained overhead electric utility ROW, no tree clearing or widening of the ROW is proposed.

Proposed Access and Utility Best Management Practices

Work crews will access poles targeted for replacement or removal from existing public roadways that intersect the distribution line ROW, traveling within the limits of the existing cleared ROW corridor to reach the poles. Existing ROW access trails (where present) will be used to minimize ground disturbance and natural resource impacts. Minor improvements of existing access roads (some grading, filling of existing deep ruts, and stone/gravel resurfacing) may be necessary along the proposed upland access trails to provide a safe and stable surface for construction equipment travel. Additionally, some temporary grading may also be required to establish safe equipment travel and staging, however grading work will be confined to upland areas only. Lastly, crews will utilize low-ground pressure ruggedized track equipment capable of traversing the existing ROW terrain to replace the subject poles.

Timber matting will be utilized to gain access across wetlands and streams to reach the existing poles targeted for maintenance to minimize soil disturbance and avoid rutting, as applicable. Additionally, timber mats may be set up around the base of poles located in wetlands to provide a stable work area to stage crews/equipment. Timber mats, typically with dimensions of 16 feet wide by 4 feet long, will be used to reduce the impact of driving equipment through saturated soils by dispersing equipment weight, preventing the formation of ruts, and preventing conditions that are conducive to soil erosion. Erosion controls and stone or wood chip ramps shall be installed to promote a smooth transition to and minimize sediment tracking onto timber mats. In addition to wetland crossings, timber matting will be utilized to span the existing jurisdictional limits (bed and banks) of any streams encountered along the ROW as depicted on the **Project Plans**.

Once access and work pads are established, the new steel poles will be installed either through direct embedment or constructed in caisson foundations that would be backfilled with gravel. Traditional auguring and installation procedures will be used. Any excess excavated spoils will be spread to match existing topography and stabilized with seed and straw mulch cover within adjacent upland areas of the ROW (outside of NHDES jurisdiction). Any construction laydown areas required for equipment and material staging during pole replacement will be situated in upland areas along the existing ROW corridor. Ground

disturbance and grading will be kept to a minimum and will be generally limited to an approximate 50-foot by 50-foot construction work pad around each replacement pole located in uplands. Generally, the work pads are positioned 70/30 as opposed to centered on the poles to provide more space in front of the new pole location to facilitate installation. However, the work pads may be shifted or reduced in size to avoid and minimize natural resource impacts, to the extent practical, as depicted on the **Project Plans.** All access and work pads will be restored following construction as described in more detail below.
Prior to accessing the two project ROWs with construction equipment, crews will install wildlife friendly erosion and sediment control barriers in accordance with project plans and details, New Hampshire Department of Environmental Services (NHDES), New Hampshire Fish and Game (NHF&G) and New Hampshire Natural Heritage Bureau (NHB) conditions, and the *Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire* (or "Utility BMP Manual," March 2019), published by the New Hampshire Department of Natural and Cultural Resources (NHDNCR). Erosion controls will be inspected daily by the crews and weekly by an environmental monitor hired by PSNH/Eversource to ensure they are maintained throughout the duration of the project.

Proposed Post-Construction Restoration

Stabilization and restoration of disturbed areas/exposed soils will be initiated as timber mats are pulled and utility work is completed. Erosion controls will not be removed until project work is complete (not to be in place longer than one growing season), and the project area is stabilized in accordance with NHDES guidance. Due to the use of timber mats, it is anticipated that minimal restoration within the ROW will be needed, and that natural vegetative re-colonization of impacted areas will occur during the 2023 growing season. If necessary, an approved upland and/or wetland seed mix outlined in NHDES guidance manuals, will be applied to any areas where cover is slow to develop. Additionally, straw or weed-free hay will be applied in conjunction with seed.

Invasive Species Management

Several invasive plant species, varying in density, are present within the project ROW based on field observations made by VHB. Species include multi-flora rose (*Rosa multiflora*), honeysuckle (*Lonicera* sp.), purple loosestrife (*Lythrum salicaria*), and oriental bittersweet (*Celastrus orbiculatus),* with the more aggressive Japanese knotweed (*Reynoutria japonic*a) and common reed (*Phragmites australis*) observed along the northern edge of Wetland 53. Invasive plant species readily colonize disturbed areas and habitat edges, such as ROW corridors. Invasive species management during project construction will adhere to guidance provided in the Utility BMP Manual. Prior to the commencement of work, clearing and pole/line construction crews will be briefed on the invasive plant species present within the ROW and the modes of dispersal and spread of these species.

All equipment, including timber mats, arriving to the site will be visually inspected to ensure that it is clean prior to off-loading. "Clean" is defined as being free of plant matter (stems, flowers, roots, etc.), soil, or other deleterious materials. Additionally, any equipment that has been placed or used within areas containing invasive species within the ROW will be cleaned of plant matter (stems, flowers, roots, etc.), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the ROW to minimize the spread of invasive species from one area to another. Equipment will be cleaned prior to being removed at the completion of the project. Cleaning will be accomplished by utilizing hand tools, shaking/dropping mats to dislodge any attached material, and/or compressed air.

Rare, Threatened, and Endangered Species

Coordination with the Natural Heritage Bureau (NHB) and NH Fish and Game (NHF&G) Department is currently underway to address potential impacts and BMPs for rare plant species (various herbaceous species) and animal species (including Blanding's turtle, wood turtle, and New England cottontail) within proximity to the project ROW as identified in the NHB DataCheck Results Letter (NHB22-1936) obtained for the project. In regard to the identified herbaceous plant species, the time of year the work is currently proposed (mostly outside the growing season) coupled with the use of timber mats in wetlands and other identified sensitive areas is expected to minimize impacts allowing vegetation to rebound naturally in the spring of 2023 once the mats are removed post-construction. In regard to rare animal species which may be present within the ROW, PSNH with support from VHB intends to implement typical wildlife BMPs including contractor trainings related to species ID and sighting protocols, daily sweeps of the project ROW prior to the start of work, the use of wildlife-friendly/non-plastic erosion controls, restoration of temporarily impacted areas, etc. Furthermore, the project is proposed to start construction in the fall of 2022 which is seen as beneficial in minimizing impacts to animal species such as turtles as they become less mobile and go into hibernation around October/November, reducing the likelihood of encounters.

Delineated Natural Resources

Portions of the proposed project fall within the City of Dover's Conservation District as defined in *Article VIII Section 170-27(B)* of the zoning ordinance to include (1) areas within 100 feet of the tidal Cocheco River, (2) areas within 50 feet of nontidal streams, and (4) in areas with slopes greater than 20% and totaling greater than 2,000 square feet of contiguous area. Only number 2 is applicable to this project, and most of the nontidal stream buffers are located within wetland buffers (in which case only the buffer that extends out the farthest is shown on the plans).

Additionally, portions of the proposed project fall within the City of Dover's Wetland Protection District as defined in *Article VIII Section 170-27.1(C)* of the zoning ordinance to include all wetlands that were delineated within the project area by a NH Certified Wetland Scientist in accordance with the applicable regulations. Jurisdictional wetlands and surface waters within the project ROW were delineated by VHB Wetland Scientists (including a NH Certified Wetland Scientist) in July 2022. The wetland delineation was conducted in accordance with the procedures and standards outlined in the *1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region,* Version 2.0 (January 2012) using alpha-numerically coded pink flagging tape. Wetland delineation also relied upon the *Field Indicators for Identifying Hydric Soils in the United States,* Version 8.2, published by the Natural Resource Conservation Service and the *Field Indicators for Identifying Hydric Soils in New England,* Version 4.0, published by the New England Interstate Water Pollution Control Commission in April 2019. Dominant wetland vegetation was assessed using the *2018 National Wetland Plant List* published by the U.S. Army Corps of Engineers. Wetlands were classified using the USFWS methodology *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979, revised 1985). No potential vernal pools were identified within the ROW during this field work.

Several palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands intersect the existing utility ROW in Dover, along with 2 perennial streams that intersect the ROW. Delineated resources are depicted on the attached **Project Plans** and are generally described below. **Representative Site Photographs** are also attached.

One slightly odd wetland to note is Wetland 54. This wetland contains all three wetland indicators (hydrophytic vegetation, hydrology, and hydric soils) along the eastern and western sides of the utility ROW but not within the central mowed portion. This wetland has been altered (likely by residents of the adjacent apartment complex) through repeated mowing of its central portion to create lawn space and room for their nearby vegetable garden (which is located between 32 Line poles 7X and 8). This mowed area lacks hydrophytic vegetation but does contain hydric soils and a narrow, ill-defined gully (either eroded or artificially excavated) was observed in the grass that connects both portions of this wetland during wetter times of year. Refer to Photo 5 of the attached photo log. This is the reason those wetland lines were left "open" along the mowed area on the plans, with a note that additional matting may be required in this area depending on site conditions at the time of construction.

Wetland Vegetation

Emergent and scrub-shrub palustrine wetlands are present within the existing utility ROW. Wetland and upland vegetation along the ROW is periodically mechanically cut to maintain safe vertical and horizontal clearance distances from the existing overhead distribution lines, thus maintaining a dense shrub-type habitat. Species typically found within these wetlands include tree species, which are not permitted to grow beyond a sapling growth stage, including red maple (*Acer rubrum*) and species of birch (*Betula* spp.). Common dominant shrub species found within these wetlands include white meadowsweet (*Spiraea alba*), steeplebush (*Spiraea tomentosa*), maleberry (*Lyonia ligustrina*), arrowwood (*Viburnum recognitum*), and speckled alder (*Alnus incana*).

Palustrine emergent portions of these wetlands are typically dominated by cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), various species of sedge (*Carex* spp.), rough-stemmed goldenrod (*Solidago rugosa*), soft rush (*Juncus effusus*), swamp dewberry (*Rubus hispidus*), narrowleaf cattail (*Typha angustifolia*), arrow-leaved tearthumb (*Persicaria sagittata*), goldenrod species (*Solidago* spp.), blue vervain (*Verbena hastata*), purple loosestrife, reed canary grass (*Phalaris arundinacea*), white meadowsweet, and peat moss (*Sphagnum* sp.).

Wetland Hydrology and Hydric Soils

Typical indicators of wetland hydrology observed throughout the project ROW wetlands include surface water (A1), saturation (A3), water-stained leaves (B9), drainage patterns (B10), and geomorphic position (D2). Typical indicators of hydric soils observed throughout the project ROW wetlands include Hydric Soil Indicators F3: Depleted Matrix and F6: Redox Dark Surface.

Streams

Delineated perennial streams that intersect the project ROW are classified as Riverine, Unknown Perennial, Unconsolidated Bottom, Sand/Mud (R5UB2/3). These streams generally flow in a north to south direction, ultimately discharging into the Cocheco River well beyond the limits of the proposed work. The channel width varies but is 4-5 feet wide on average. The densely overgrown streambanks had an average height of six inches to one foot.

Functions and Values

The location of the project wetlands within a cleared ROW corridor, their connectivity to larger complexes that extend outside of the existing ROW edge, the presence/absence of streams, and the composition of the immediate surrounding landscape (industrial/commercial/residential) largely dictate their functions and values. Wetlands to be temporarily impacted by the proposed work are made up of dense scrub-shrub and emergent vegetation which contributes to their capacity to perform water quality and hydrologic functions such as sediment/toxicant/pathogen retention and nutrient removal. Potential sources of pollutants are present from abutting industrial/commercial land uses, roadways and maintained residential properties. Their vegetative diversity and position within a linear corridor also contribute to their function to provide wildlife habitat, especially to various bird species. Scrub-shrub wetlands are productive in terms of food resources where they support berried varieties of shrubs. Lastly, based on the size and landscape position of these wetlands, and their proximity to the built environment and connectivity to streams, they also function to retain floodwaters from sources higher in the watershed and may contribute to groundwater recharge. When not associated with a stream or hydrologically connected to a larger complex outside or within the ROW, wetland function and values tend to be more limited due to the small size and isolated nature of some of these resources.

None of the proposed impacts associated with this project are expected to permanently alter the existing topography or hydrology of these wetlands (i.e., no permanent grading or ground disturbance and no inflow/outflow restrictions) within the project ROW which could result in a decrease of groundwater recharge /discharge, floodflow alteration, sediment and nutrient trapping, production export, or shoreline stabilization functions. Some temporary, short-term impacts to the wildlife habitat wetland function are anticipated during the construction period due to temporary construction-related noise and the presence of work crews and equipment.

Proposed Overriding District Impacts

Impacts to wetlands were minimized to the maximum extent practical during project planning. This included modifications to ROW access, the positioning of the proposed utility poles, the utilization of timber matting and/or tracked equipment, and the location/orientation of work pads. It should also be noted that direct stream impacts were avoided by using timber mats that will span the jurisdictional streambanks. Given the overlapping overriding districts and associated buffers, we quantified the impacts in **Table 1** below by direct wetland impact and municipal buffer impact. The municipal buffers were established by taking the farthest buffer (such as when a stream is located within a wetland, the larger wetland buffer was used).

Table 1: Proposed Temporary Impacts

Impact Type	Impact Area (Square Feet)
Direct Wetland Impact	2,110
Municipal Buffer Impact	14,900
Total	**17,010**

Conditional Use Permit Procedures and Requirements

The Dover Zoning Ordinance provides that CUP applications can be approved for limited and regulated uses by the Planning Board if it is found that the use is consistent with the ordinance and does not have an adverse impact on the natural resources and jurisdictional areas within the overriding districts.

Conservation District

A CUP may be issued in accordance with the criteria detailed in *Article VIII Section 170-27(C)(2)* for the Conservation District*:*

(a) The applicant shall demonstrate that the proposed use is essential to the productive use of land not in the district; 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 maintenance work is required to maintain the reliability of the existing infrastructure that provides electricity to the regional grid. Maintaining the flow of electricity to developed regions of the state is essential to the safety and productivity of those communities. All work has been designed to avoid and minimize impacts to the Conservation and Wetland Protection Districts to the extent practical while accomplishing the project objectives of replacing the target poles.

(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. This plan will address the following (if applicable), but should not be limited to:

(i) stabilization of exposed soils and soil stockpiles; **Exposed upland soils will be seeded and stabilized with straw mulch to prevent erosion while vegetation is establishing. Following removal of timber mats from wetland areas, any exposed soils will be stabilized with weed-free straw and allowed to reestablish within the next growing season. If some areas are slow to establish, NHDES-approved wetland seed mixes may be applied. Temporary soil stockpiles, if applicable, will be temporarily stabilized and surrounded by erosion controls (i.e., silt sock), as necessary, to contain the sediment.**

(ii) protection of steep SLOPEs from erosion; **Not applicable to this project.**

(iii) construction site waste management; **Old poles and overhead hardware and all other construction debris will be removed from the site and properly disposed.**

(iv) inspection and maintenance of runoff control measures (BMPs); **An environmental monitor hired by PSNH will be responsible for conducting weekly monitoring of the project to ensure the work is occurring in accordance with the approved plans and that erosion controls are functioning as intended (and recommend corrective actions if/as applicable). Furthermore, the selected contractor will be responsible for daily monitoring of the erosion controls.**

(v) minimization of land clearing; **No tree clearing is proposed as part of this project; however, routine mowing and selective cutting of the project ROW in preparation of construction will likely be required.**

(vi) stabilization of drainage ways; **Not applicable to this project.**

(vii) installation of perimeter controls; **Erosion control lines are shown on the plans where silt fence and/or silt sock are proposed to protect the adjacent natural resources.**

(viii) installation of sediment trapping devices; and **Not appliable to this project.**

(ix) storm drain inlet protection. **Not applicable to this project.**

(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.*
A Utility Maintenance Activity SPN for the proposed project will be submitted to NHDES to cover environmental permitting at the state level.

(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:*
(i) attempted avoidance of the impact;
(ii) minimization of the impact;
(iii) planned mitigation of the effects of the impact; and
(iv) efficacy of the soil erosion and sedimentation control plan.
On behalf of PSNH, VHB requests that the Conservation Commission compose a letter to the Planning Board addressing these items and stating any recommendations and concurrence for the project. These items are addressed elsewhere in this application.

<u>Wetland Protection District</u>
A CUP may be issued in accordance with the criteria detailed in *Article VIII Section 170-27.1(F)(1)* of the Wetland Protection District:

(a) *Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area.*
Avoidance and minimization of natural resource impacts was a main consideration throughout the project design and implementation, coupled with construction feasibility and safety. All access routes were selected through site walks with PSNH, and work pads were positioned to avoid natural resource impacts to the extent practical while still accomplishing the project objectives. Given the avoidance and minimization efforts employed throughout the plan development, it is our opinion that there is no practicable alternative that would have less impact. It should also be noted that impacts associated with this work are temporary and will be restored.

(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.*
Refer to the response for (a) above. Impacts to natural resources and buffers comprising the Conservation and Wetland Protection Districts have been avoided to the extent practical while still accomplishing the project objectives of replacing the target poles. Where stream crossings are proposed (or where streams are located within the work pad areas), they will be spanned from beyond their jurisdictional banks with timber mats to avoid stream impacts.

(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.
Refer to the response for (a) above. Impacts to natural resources and buffers comprising the Conservation and Wetland Protection Districts have been minimized to the extent practical while still accomplishing the project objectives of replacing the target poles. The use of timber matting further minimizes impacts by reducing ground pressure and preventing rutting within wetlands. Where feasible, wetlands that span the ROW width will be crossed at their narrowest areas to minimize impacts.

(d) *Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.*
Not applicable.

(e) *Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3), below.*
A Utility Maintenance Activity SPN for the proposed project will be submitted to the NHDES Wetlands Bureau to cover environmental permitting at the state level for the proposed temporary wetland impacts in Dover.

Property Ownership and Abutters

It is our understanding that the City of Dover will prepare the abutting property list and invoice the applicant for the applicable fee (which must be paid at least 28 hours in advance of the Planning Board meeting). Please do not hesitate to contact me if you have any questions at (603) 391-3944 or kwilkes@vhb.com.

Sincerely,



Kristopher Wilkes, CWS, CPESC
Project Manager, Energy & Environmental

cc: Jeremy Fennell, PSNH

Attachments:
City of Dover Conditional Use Permit Application Form
Tax Maps
Representative Site Photos
Project Plans

Representative Site Photographs – July 2022
Eversource 32 and 371 Distribution Lines Structure Replacements – Dover, NH



Photo 1: View northeast of the southern extent of Wetland 52 located north of Oak Street.



Photo 2: View northeast of the non-jurisdictional stormwater basin located south of Oak Street.



Photo 3: View northeast of Wetland 53 with 32 Line Pole 9 in the background for reference (red arrow).



Photo 4: View northwest of the plywood footbridge crossing of the overgrown perennial stream that connects Wetlands 53, 54, and 55.



Photo 5: View west of Wetland 54 taken from within the mowed grass area between the delineated portions of this wetland. Note the approximate location of the ill-defined gully between the natural wetland sections.



Photo 6: View north of the southern end of the densely overgrown scrub-shrub Wetland 55.

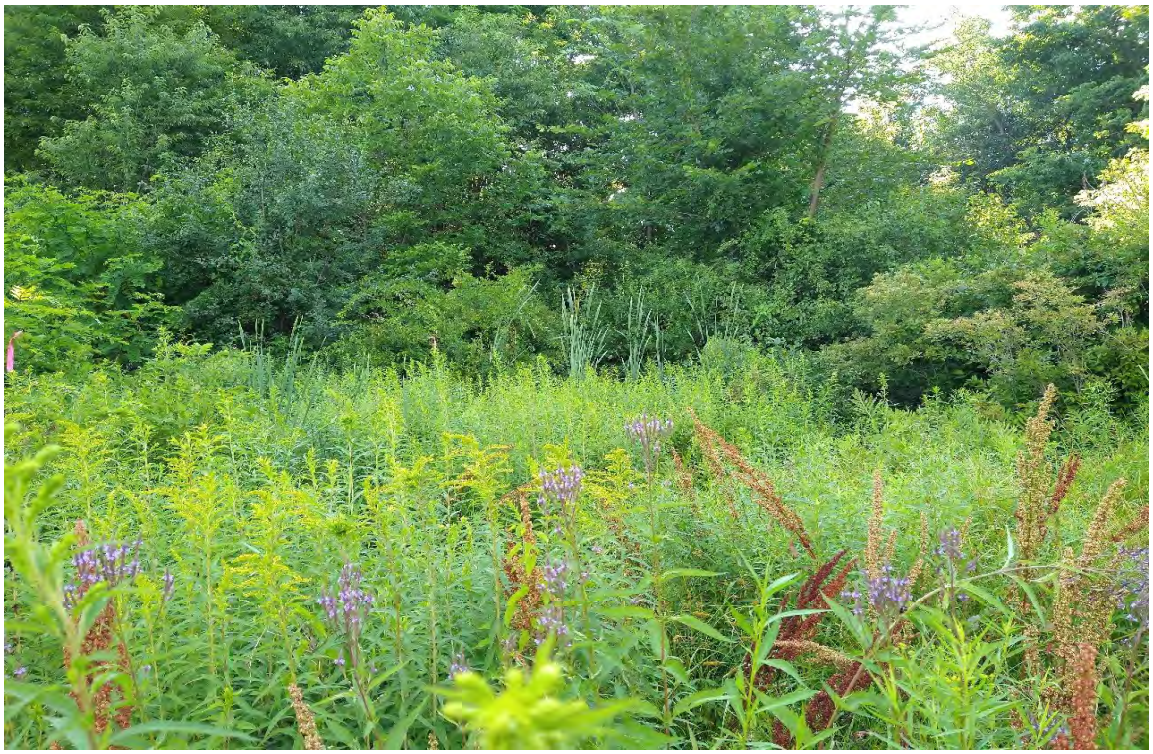


Photo 7: View northwest of the northern portion of Wetland 56.

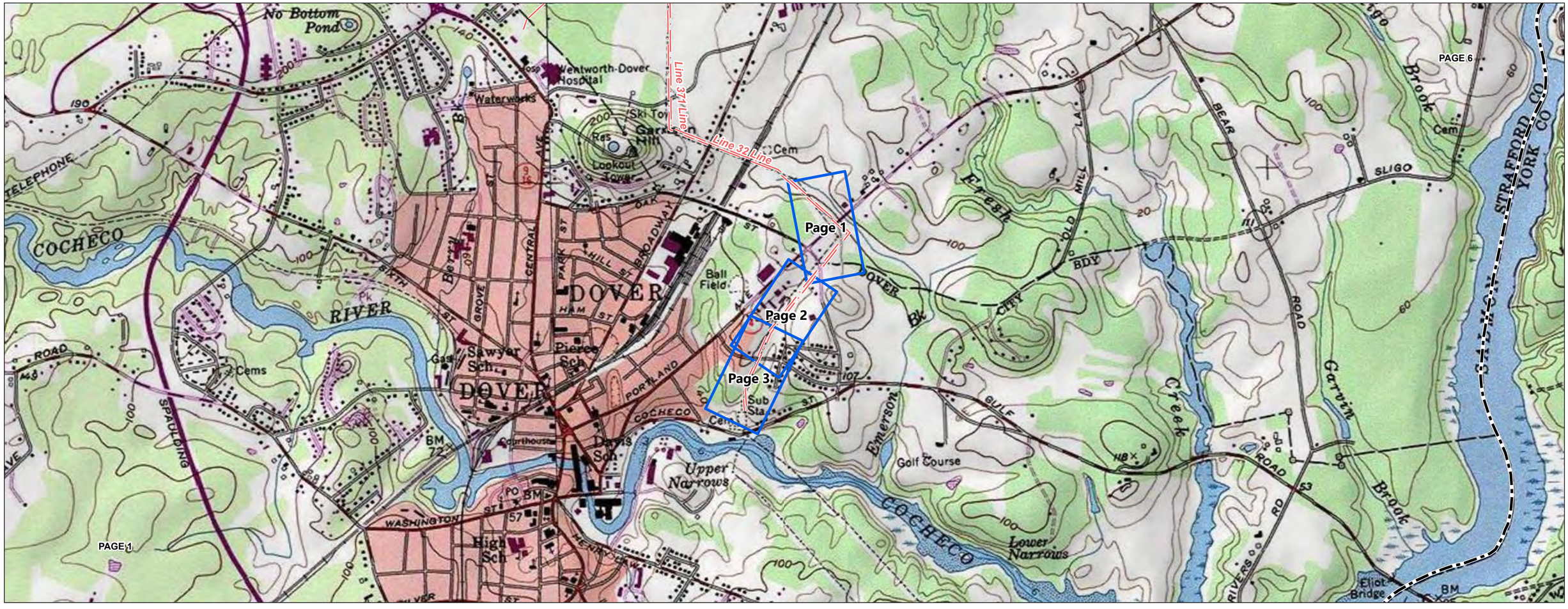


Photo 8: View northeast of the western edge of Wetland 57.

2022 - Line 32 and Line 371 - Structure Replacement Project

Dover, New Hampshire
Local Permitting Plans

Date: August 30, 2022



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Town Boundary
NH / ME Boundary
Overhead Eversource Lines

N

0 2,000 4,000 Feet

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NO.	DATE	REVISIONS

PREPARED FOR:

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

PREPARED BY:

vhb

2 Bedford Farms Drive Suite 200
Bedford, NH 03110

Project Plan Notes

Date Issued: August 30, 2022

1. This plan set is provided to show jurisdictional impacts and required environmental controls only. Engineering documents should be consulted to determine the scope and location of all other construction activities.

2. Applicant: Public Service Company of New Hampshire, (PSNH) d/b/a Eversource Energy, 13 Legends Drive, Hooksett NH 03106

3. Natural Resources along ROW were delineated by VHB under the supervision of Senior Wetland Scientist, Kristopher Wilkes, NH CWS #288, during the summer of 2022.

4. Wetland delineation was performed to the standards in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012).

5. Hydric soils were reviewed in accordance with Field Indicators for Identifying Hydric Soils in the United States, Version 8.2 published by the Natural Resources Conservation Service, and the Field Indicators for Identifying Hydric Soils in New England, Version 4.0 published by the New England Interstate Water Pollution Control Commission.

6. Dominant wetland vegetation was assessed using the 2018 National Wetland Plant List published by the U.S. Army Corps of Engineers.

7. Wetland classifications follow the USFWS methodology Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979, revised 1985).

8. Wetland work was performed utilizing a handheld GPS units capable of submeter accuracy.

9. Proposed construction limits of disturbance are approximate. Contractor is responsible for minimizing earth disturbance, as practicable.

10. The environmental controls shown on these plans may need to be supplemented due to season of work or work methods proposed. Refer to BMP manuals and additional guidance documents, as needed.

11. Erosion and sedimentation control measures shall be installed prior to start of work, shall be maintained, and shall remain in place during construction until all disturbed surfaces are stabilized. Following stabilization, erosion and sedimentation control measures shall be removed off-site and properly disposed.

12. Erosion and sedimentation 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. The type and installation method of erosion and sediment controls shall be in accordance with the Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (March 2019), published by the New Hampshire Department of Natural & Cultural Resources, and Eversource BMP documents as applicable.

13. Temporary stone construction entrances will be used at points of construction ingress/egress from public and private roadways to reduce/eliminate sediment track-out.

14. The selected contractor is responsible for street sweeping at points of ingress/egress from public and private roadways.

15. Selected contractor will be responsible for certifying that all equipment on the project is clean of invasive species prior to arriving onsite. The contractor will also be responsible for cleaning equipment as it is moved within the project to reduce the risk of spreading invasive plant seeds and fragments.

16. Timber swamp matting shown on the plans represents the square footage and alignment of matting which is required and has been approved by the regulators. Additional layers of mats may be required at certain locations. Any increase in the number, change in alignment, or decision not to use swamp mats must be approved by the Permittee or an authorized representative of the Permittee(s) and, as appropriate, regulators.

17. Any excavated material shall be placed outside of jurisdictional areas or removed from the site.

18. If dewatering is required, dewatering basins shall be placed in uplands areas and discharge water into upland areas.

19. Areas of soil disturbance shall be stabilized following construction in accordance with the BMP Manual.



		EVERSOURCE ENERGY
		2022 - Line 32 and Line 371 - Structure Replacement Project
		Dover, NH
		Date: August, 2022
		vhb

Temporary Wetland Impact (SF)	Temporary Municipal Buffer Impact (SF)
23	941

371/14
32/13
371/15
32/14
371 Line
32 Line
371/13
371/16
32/15
32/12
W-51
PEM1E/PSS1E
PORTLAND AVE
ROLLINSFORD
OLD OAK ST
TEMPORARY WETLAND IMPACT
W-52 PEM1E/PSS1E:
23 SF
TEMPORARY MUNICIPAL BUFFER IMPACT:
941 SF
371/12
32/16
371/17
W-50
PEM1E/PSS1E
32/11
W-52
PEM1E/PSS1E
DOVER
371/18
32/17
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32/10Y
371/11
W-49
PEM1E/PSS1E
OAK ST
32/10
371/19
32/18
Emerson Brook

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- Existing Access
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- Existing Right-of-Way (ROW)
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- FEMA Floodway
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- Culvert
- Gate
- Fence
- Work Pad
- Temporary Construction Matting
- Sediment Control Barrier
- Railroad
- Map Sheet Matchline
- Eversource Owned Property
- Municipal Boundary
- Parcel Boundary
- >20% Slope
- 2' Contour
- 10' Contour

Note: Where municipal buffers overlap, only the buffer that extends out the farthest is shown.

N

1:1,200

0 50 100 Feet

Document Path:

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

Line 32 and 371 Structure Replacement Project

Dover, NH | MAP SHEET 1 of 3

Date: August 2022

vhb

Temporary Wetland Impact (SF)	Temporary Municipal Buffer Impact (SF)
2,087	13,824

MOWED GRASS; SATURATED. ADDITIONAL MATTING RECOMMENDED.

TEMPORARY MUNICIPAL BUFFER IMPACT: 4,014 SF

TEMPORARY WETLAND IMPACT W-55 PSS1E: 417 SF

TEMPORARY MUNICIPAL BUFFER IMPACT: 916 SF

TEMPORARY MUNICIPAL BUFFER IMPACT: 689 SF

TEMPORARY MUNICIPAL BUFFER IMPACT: 1,321 SF

SPAN STREAM WITH MATS

TEMPORARY WETLAND IMPACT W-54 PEM1E/PSS1E: 1,179 SF

SPAN DITCH WITH MATS

TEMPORARY MUNICIPAL BUFFER IMPACT: 5,577 SF

TEMPORARY WETLAND IMPACT W-56 PEM1E/PSS1E 491 SF

TEMPORARY MUNICIPAL BUFFER IMPACT: 1,307 SF

DOVER

OLD OAK ST

OAK ST

ELMWOOD AVE

FAIRVIEW AVE

CROSS ST

DANBURY LN

ATLANTIC AVE

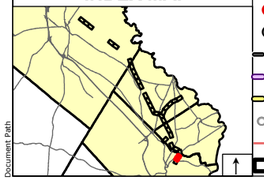
MAGNOLIA DR

GRANITE ST

PORTLAND AVE

32/10 371/10 W-53 PEM1E/PSS1E 32/9 371/9 32/8 32/7X SC-10 371/8 W-54 PEM1E/PSS1E 371/7 W-55 PSS1E 32/7 371/6 371 Line W-56 32/6 PEM1E/PSS1E 32 Line 32/5 371/5 371/4 32/4

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- Existing Right-of-Way (ROW)
- Watercourse (not delineated)
- Perennial Stream Digitized from Aerial
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland Boundary Outline
- Drainage Ditch
- Field Delineated Wetland
- Man-made detention basin
- Potential Vernal Pool
- FEMA 100-Year Flood Zone
- FEMA Floodway
- 50-Foot Stream Buffer
- 50-Foot Wetland Buffer
- Temporary Municipal Wetland Impact
- Culvert
- Gate
- Fence
- Work Pad
- Temporary Construction Matting
- Sediment Control Barrier
- Railroad
- Map Sheet Matchline
- Eversource Owned Property
- Municipal Boundary
- Parcel Boundary
- >20% Slope
- 2' Contour
- 10' Contour

1:1,200

0 50 100 Feet

Note: Where municipal buffers overlap, only the buffer that extends out the farthest is shown.

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

Line 32 and 371 Structure Replacement Project

Dover, NH

MAP SHEET 2 of 3

Date: August 2022

vhb

Temporary Wetland Impact (SF)	Temporary Municipal Buffer Impact (SF)
0	135

ELMWOOD AVE
FAIRVIEW AVE
CROSS ST
DANBURY LN
ATLANTIC AVE
DOVER
TOWNSEND DR
MAGNOLIA DR

IMPACTS QUANTIFIED ON PREVIOUS SHEET.

IMPACTS QUANTIFIED ON PREVIOUS SHEET.

TEMPORARY MUNICIPAL BUFFER IMPACT: 135 SF

W-55 PSS1E

W-56 PEM1E/PSS1E

W-57 PEM1E

SC-1

371 Line

32 Line

371/1 371/2 371/3 371/4 371/5 371/6

32/1 32/2 32/3 32/4 32/5 32/6

3148X/1 3148X/2

INDEX MAP



- Existing Structure
- Proposed Replacement Structure
- Existing Structure to be Removed
- Existing Access
- Off-ROW Access Pending Rights
- Proposed Access
- Stonewall
- Overhead Eversource Lines + Taps
- Existing Right-of-Way (ROW)
- Watercourse (not delineated)
- Perennial Stream Digitized from Aerial
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland Boundary Outline
- Drainage Ditch
- Field Delineated Wetland
- Man-made detention basin
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- FEMA 100-Year Flood Zone
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- 50-Foot Stream Buffer
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- Culvert
- Gate
- Fence
- Work Pad
- Temporary Construction Matting
- Sediment Control Barrier
- Railroad
- Map Sheet Matchline
- Eversource Owned Property
- Municipal Boundary
- Parcel Boundary
- >20% Slope
- 2' Contour
- 10' Contour

Note: Where municipal buffers overlap, only the buffer that extends out the farthest is shown.

1:1,200
0 50 100 Feet

Document Path:

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

Line 32 and 371 Structure Replacement Project

Dover, NH

MAP SHEET 3 of 3

Date: August 2022

vhb

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-68

Application Type:	Minor Subdivision
Applicant(s):	Jahn H. & Susan G. Janetos
Owner(s):	Jahn H. & Susan G. Janetos
Location:	Gulf Road & Oak Street (Assessor's Map N, Lot 13-F)
Meeting Date:	September 27, 2022

INTENT: The applicant proposes to subdivide a 12.53 ± ac parcel creating three (3) parcels with the areas of: 1.53±, 2.13± and 8.87± acres, fronting on Gulf Road.

LOTS PROPOSED: 3 (2 new lots)

AGENDA ITEM #: 4-B

ACREAGE:
Parent Lot - 12.53 ± ac/545,594 ± sf
Lot 13-F – 1.53 ± ac/66,546 ± sf
Lot 13-F-1 – 2.13 ± ac/92,586 ± sf
Lot 13-F-2 – 8.87 ± ac/386,462 ± sf
** all lot area includes wetland and wetland buffers*

ZONING DISTRICT: R-40, Wetlands Protection District

EXISTING USE: Vacant

PROPOSED USE: Three (3) lot subdivision (creating two (2) new lots)

SURROUNDING USES: Vacant, Residential

ZBA ACTION: None

ATTACHMENTS: Minor Subdivision Plan

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

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

PERMITS REQUIRED: NH DES Subdivision

WAIVERS REQUESTED: None

Summary of Request and Background:
The applicant is proposing to subdivide Assessor's Map N, Lot 13-F into three (3) lots, resulting in the creation of two (2) new lots. The lots front on Gulf Road. It is proposed that lots 13-F-1&2 will access the lots through a 30' access & utility easement to avoid wetland impact. Lot 13-F will use Gulf Road for access through an existing driveway. The lots are proposed to be serviced by municipal water and on-site individual wastewater treatment systems. However, staff feels there may be a future option to tie into public sewer. As a minor subdivision, this application did not appear before the TRC.

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

STAFF RECOMMENDATION - Minor Subdivision:
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 minor subdivision with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:
1. Provide a stamped memo from a PE or CWS that the each lot has sufficient area and soil types to support individual wastewater treatment systems as described in §157-41 or provide a copy of the NHDES Subdivision Permit; and
2. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford Country Registry of Deeds, which additionally shall include:
   - 2.1. The owners' signatures;
   - 2.2. Include the Planning File #P22-68;
   - 2.3. The stamp and signature of the CWS and LLS on the final plans
   - 2.4. Revision of Note 9.) on Subdivision plan to "Wetlands were delineated by Damon E. Burt, Certified Wetlands Scientist, Certification Number 163, in accordance with Chapter 170-27.1 of the Zoning Ordinance, on August 8, 2021.";
   - 2.5. Add "This property falls within the following zoning overlay districts: Wetlands Protection District." To Subdivision Plan Note 5; and
   - 2.6. Add note stating "The installation of electric power, cable television and telephone lines shall be underground throughout the site for which development is proposed. Subdivision plans shall show any easements for these services."

P22-68/SUBM-2022-0004 Gulf Road & Oak Street



Property Information

Property ID	N0013-F00000
Location	GULF RD
Owner	JANETOS JAHN H &
Land Use	130
Zoning Code	R-40

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 5/3/2021
Data updated Daily

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

City of Dover, New Hampshire
MINOR SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Jahn H. & Susan G. Janetos Telephone # 603-781-2359

Address of Applicant: 55 Carlton Way Hales Location, NH 03860

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

Address of Property Owner: _____

E-Mail Address: sjanetos@yahoo.com

PROPERTY INFORMATION

Address of Property: Gulf Road & Oak Street

Assessor's Map # N Lot(s) # 13F

Zoning District(s) R-40 Overlay District(s) None

Size of Parcel: 12.53 acres Property Deed: Book 3655 Page: 154

Existing Use of Property: Residential - Vacant

SUBDIVISION INFORMATION

Existing Number of Lots: 1 Proposed Number of Lots: 2

TDR Relief sought (Check All That Apply): □ Lot Size □ Frontage □ Setback □ 30' Buffer □ Purchase ____ units

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

N/A

Circle one for each category:

Water: (City) / Well (circle one) How far is city water from the property? _____

Sewer: City / (Septic) (circle one) How far is city sewer from the property? _____

Highway Access (City Street) / State Highway (circle one) | Roadway (Public) or Private Road (circle one)

Refuse removal: Public / (Private) (circle one) | Estimated Length of Proposed Road: N/A feet

Estimated value of construction: N/A New impervious area (in s.f.): N/A

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: None Requested

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

_____

SURVEYOR INFORMATION

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

Address 24 Chestnut Street Dover, NH 03820 Telephone #: 603-742-0911

Professional License #: Kevin McEneaney, LLS 661 E-mail address: kevin@surveynh.com

ENGINEER INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Damon Burt, CWS Fraggle Rock Environmental, Inc.

Address 38 Garland Road Strafford, NH 03884 Telephone #: 603-969-5574

Professional License #: Damon Burt, CWS #163 E-mail address: frenvironmental@gmail.com

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: _____

SIGNATURES

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

Signature of Property Owner: John H Jenness Susan Jenness Date: 9/3/22 Sept 3 2022

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: John H Jenness Susan Jenness Date: 9/3/22 Sept 3 2022

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby authorize the City of Dover and 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: John H Jenness Susan Jenness Date: 9/3/22 Sept 3 2022

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: John H Jenness Susan Jenness Date: 9/3/22 Sept 3 2022

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

I, and my successors, hereby certify that I understand that the acceptance of a roadway as a public road is an action of the City Council in its sole and complete discretion. In order for the City Council to consider accepting a road as public, it must be free of encumbrances. No roadway with private utility easements shall be accepted as a public road by the City unless the easements are expunged prior to the transfer of land to the City. License agreements for any and all private utilities within the right of way may be granted by the City upon acceptance of the unencumbered roadway consistent with applicable state law.

Signature of Property Owner: N/A Date: _____

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

CITY OF DOVER SUBDIVISION
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	13F	Jahn H. & Susan G. Janetos	55 Carlton Way Hales Location, NH 03860

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kevin McEneaney, LLS	McEneaney Survey Associates	24 Chestnut Street Dover, NH 03820
Damon Burt, CWS	Fraggle Rock Environmental, Inc.	38 Garland Road Strafford, NH 03884

Conservation Easement Holder: N/A

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

P22-68 **SUBM-2022-0004** **GULF RD/OAK STREET**

Property ID	Owner 1	Owner 2	Owner Address 1	City	State	Zip
N0013-000000	TIBBETT DAHN H	TIBBETT NORMA M	130 GULF RD	DOVER	NH	03820
N0013-A00000	HEILSHORN GEORGE III		108 GULF RD	DOVER	NH	03820
N0013-B00000	TIBBETT NORMA &	TIBBETT DAHN	130 GULF RD	DOVER	NH	03820
N0013-G00000	DAY AHN MARIE &	DAY MICHAEL ALAN	104 GULF RD	DOVER	NH	03820
N0014-A00000	TOWNSEND EDWARD M &	TOWNSEND SARAH L	117 GULF ROAD	DOVER	NH	03820
N0014-B00000	WALLINGER ANN HARRISON & ROYER W A TRUS	ROYER THOMAS C AND DONNA H REVOCABLE LIV	111 GULF RD	DOVER	NH	03820
N0014-C00000	BOACKLE HAICKEL PAUL TRUSTEE	BOACKLE HAICKEL PAUL REVOCABLE TRUST	105 GULF RD	DOVER	NH	03820
N0014-D00000	GAGNON JUSTIN K &	GAGNON WHITNEY A	97 GULF RD	DOVER	NH	03820
N0015-000000	COCHECO COUNTRY CLUB		145 GULF RD	DOVER	NH	03820
N0013-F00000	JANETOS JAHN H &	JANETOS SUSAN G	55 CARLTON WAY	HALES LOCATION	NH	03860-790
	MCENEANEY SURVEY ASSOCIATES		24 CHESTNUT STREET	DOVER	NH	03820
	FRAGGLE ROCK ENVIRONMENTAL		38 GARLAND STREET	STRAFFORD	NH	03884

City of Dover, New Hampshire
MINOR SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 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: Jahn H. & Susan G. Janetos File Number: P22-

PROJECT TITLE: Subdivision Plan prepared for Jahn H. & Susan G. Janetos

PROPERTY LOCATION: Gulf Road & Oak Street Tax Map: N Lot: 13F

	Where/How Provided	Reviewed
1. Completed and signed Application form	✓	
2. Plan Review Fees are provided	✓	
3. Electronic copy of the surveyed plat layout	✓	
4. Electronic copy of supplementary materials and application	✓	
5. Waiver requests to the Subdivision Regulations, with written justification	N/A	
6. Conditional Use Permit applications	N/A	
7. Fifteen folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	3 Full Size Sets & 12 Half Size Sets	
Location map at appropriate scale	✓	
Proposed subdivision name and title and Planning File #	✓	
Date, north arrow and scale	✓	
Names of all abutting property owners	✓	
Name and address of owners and/or applicants	✓	
Signature & stamp of NH licensed land surveyor and/or engineer	✓	
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	N/A	
Location and widths of existing & proposed easements & right of ways	✓	
Location and widths of existing and proposed sidewalks	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	✓	
Existing and proposed lot areas in square feet	✓	
Existing and proposed topographic information at two foot intervals	✓	
Existing and proposed buildings and structure locations	N/A	
Minimum building setbacks or build to lines on all lots	✓	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	✓	

	Explain How Provided	Reviewed
Existing and proposed water lines and fire hydrants, including materials and capacity needed	N/A	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	✓	
Existing and proposed septic system, including test pit locations and results and NHDES subdivision permit number	✓	
Existing and proposed stormwater lines and facilities	N/A	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	✓	
Existing natural features and/or significant vegetation on property	✓	
Soil types	✓	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	✓	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	N/A	
Location, material and size of existing and proposed permanent monuments	✓	
Existing railroad lines	N/A	
Note regarding solid waste disposal	N/A	
All applicable Dover Common Subdivision notes	✓	
8. Construction Detail Sheets shall contain the following information (if appropriate):	N/A	
Profiles showing existing & proposed elevations along the center lines of proposed streets & within 100' of intersections with existing streets		
Profiles showing the locations & a typical cross-section detail of streets		
Location of street trees, street lighting poles and street signs		
Location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants		
Location and size of all water, gas and other underground utilities		
9. Additional Information if appropriate	N/A	
Stormwater Management Plan depicting the existing and proposed storm drainage system and engineered drainage analysis		
Stormwater Management System Operation and Maintenance Plan		
Letter to Serve from Public and Private Utilities		
Erosion and Sedimentation Control Plan		
Proposed restrictive covenants or homeowners association documents		
Dates and permit numbers of all required state and federal permits		
If wetland buffer, indicate placards locations, as applicable		
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required		

REVIEWED BY: _____ DATE_____

MCENEANEY SURVEY ASSOCIATES

OF NEW ENGLAND

P.O. Box 681- Dover, NH 03820
603-742-0911

TEST PIT LOG

Prepared for:

JAHN H. & SUSAN G. JANETOS
TAX MAP N, LOT 13F; GULF ROAD
DOVER, NEW HAMPSHIRE
August 5, 2022

Prepared by: Kenneth J. Faucher, Designer No. 851

Test Pit #1	**ESHWT @ 32”**
00-08”	Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
08-32"	Brownish Yellow (10YR 6/6) Fine Sandy Loam, Blocky, Friable
32-96"	Light Olive Brown (2.5Y 5/4) Silt Loam, Blocky, Friable, Redox

Refusal @ 96” No Observed Water
Perc. Rate = 14 minutes / inch @ 24"

Test Pit #2	**ESHWT @ 34”**
00-12”	Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-34"	Brownish Yellow (10YR 6/6) Fine Sandy Loam, Blocky, Friable
34-52"	Light Olive Brown (2.5Y 5/4) Silt Loam, Blocky, Friable, Redox
52-84" +	Olive Brown (2.5Y 4/4) Silty Clay Loam, Blocky, Firm

No Refusal No Observed Water Restrictive @ 52”
Perc. Rate = 14 minutes / inch @ 24"

Test Pit #3	**ESHWT @ 46”**
00-12”	Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-46"	Brownish Yellow (10YR 6/6) Loamy Sand, Massive, Loose
46-56"	Light Olive Brown (2.5Y 5/4) Silt Loam, Blocky, Friable, Redox
56-108”+	Olive Brown (2.5Y 4/4) Silty Clay Loam, Blocky, Firm

No Refusal No Observed Water Restrictive @ 56”
Perc. Rate = 6 minutes / inch @ 24"

Test Pit #4 **ESHWT @ 24”**

00-12” Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-24" Brownish Yellow (10YR 6/6) Fine Sandy Loam, Blocky, Friable
24-120” Olive Brown (2.5Y 4/4) Silty Clay Loam, Blocky, Firm

Refusal @ 120” No Observed Water Restrictive @ 24”
Perc. Rate = 14 minutes / inch @ 20"

Test Pit #5 **ESHWT @ 30”**

00-12” Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-30" Brownish Yellow (10YR 6/6) Fine Sandy Loam, Blocky, Friable
30-72” Olive Brown (2.5Y 4/4) Silty Clay Loam, Blocky, Firm

Refusal @ 72” No Observed Water Restrictive @ 30”
Perc. Rate = 14 minutes / inch @ 20"

Test Pit #6 **ESHWT @ 30”**

00-12” Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-30" Brownish Yellow (10YR 6/6) Fine Sandy Loam, Blocky, Friable
30-114” Olive Brown (2.5Y 4/4) Stony Silt Loam, Blocky, Firm

No Refusal No Observed Water Restrictive @ 30”
Perc. Rate = 14 minutes / inch @ 20"

Test Pit #7 **ESHWT @ 22”**

00-12” Dark Grayish Brown (10YR 4/2) Fine Sandy Loam, Granular, Friable
12-22" Brownish Yellow (10YR 6/6) Sandy Loam, Blocky, Friable
22-72”+ Light Olive Brown (2.5Y 4/4) Stony Fine Sandy Loam, massive, Friable

No Refusal No Observed Water No Restrictive
Perc. Rate = 12 minutes / inch @ 18"

Test Pit #8

Refusal @ 84”

Test Pit #9

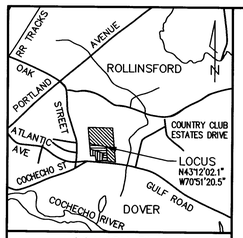
Refusal @ 48”

Test Pit #10

Refusal @ 57”

Test Pit #11

Rotted Ledge @ 30” – easily dug down to 100”



LOCATION PLAN
(NO SCALE)

No.	Bearing	Distance
L1	S84°00'24"W	5.14'
L2	S05°19'55"E	31.06'
L3	N05°48'59"W	15.56'
L4	N15°41'21"W	16.60'

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	05°41'52"	1465.39	145.73	145.67	S86°51'20"W
C2	05°52'03"	1465.39	150.07	150.00	N87°21'42"W
C3	02°38'35"	1465.39	67.60	67.59	N83°06'23"W

LOT AREA CALCULATIONS:

LOT AREA		NON-WETLAND	OUTSIDE OF WET BUFFER
LOT 1	66,546 S.F.	64,290 S.F.	51,778 S.F.
LOT 2	92,586 S.F.	70,693 S.F.	58,930 S.F.
LOT 3	386,462 S.F.	94,079 S.F.	52,769 S.F.

LEGEND

I.R.(TBS) – IRON ROD (TO BE SET)
I.R.(fnd) – IRON ROD FOUND
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
– EDGE OF WETLAND
– WETLAND
– WATER GATE VALVE
– FIRE HYDRANT
– UTILITY POLE

I.R.(found)
N – 256,955.318
E – 1,200,196.775
(SEE NOTE 7)

S89°20'50"E
645.30'

I.R.(found)
N – 256,947.966
E – 1,200,842.036
(SEE NOTE 7)

N / 13-1
CHINBURG DEVELOPMENT LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5037 / 903

S05°19'55"E
900.00'

N05°19'55"W
430.16'

N / 13F-2
PARCEL AREA
386,462 S.F.
8.87 Ac.

EDGE OF WETLAND
(SEE NOTE 9)

50' WETLAND BUFFER (TYP.)

NH STATE PLANE
NAD 83 - GPS OBS.

OAK STREET
{public - R.O.W. width varies}

25 / 41
BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 763

I.R.(fnd)

30' WIDE ACCESS & UTILITY EASEMENT
336.07' (SEE NOTE 12)
S80°19'51"E

L4
L3

I.R.(fnd)

ELMWOOD AVENUE

PROPOSED ACCESS & UTILITY EASEMENTS

I.R.(TBS)

25'
50'

L2

N80°19'51"W
332.84'

I.R.(fnd)

S80°19'54"E
449.43'

I.R.(TBS)

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

BARN

N / 13
NORMA M. TIBBETT
DAHN H. TIBBETT
130 GULF ROAD
DOVER, NH 03820
5037 / 899

N05°19'55"W
119.30'

134.84'

I.R.(fnd)

N / 13F-1
PARCEL AREA
92,586 S.F.
2.13 Ac.

S73°06'11"E
388.43'

ZONE "X"
100 YEAR FLOOD
SEE NOTE 6

N / 13C
AHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

N05°19'55"W
185.00'

I.R.(TBS)

S05°02'38"E
371.92'

HOUSE

N / 13F
PARCEL AREA
66,546 S.F.
1.53 Ac.

125.00'
I.R.(fnd)

I.R.(fnd)
S85°15'57"W

N08°35'00"W
141.02'

GRAVEL DRIVE

S16°53'49"W
200.56'

HOUSE

N / 13A
GEORGE HEILSHORN, III
108 GULF ROAD
DOVER, NH 03820
4745 / 541

L1
C1
C2
C3

I.R.(TBS)
I.R.(TBS)
I.R.(TBS)
I.R.(fnd)

147.59'
N81°47'06"W

GULF ROAD {public - 66' wide R.O.W.} a.k.a. ELIOT BRIDGE ROAD

N / 14C
HAICKEL PAUL BOACKLE, TRUSTEE
HAICKEL PAUL BOACKLE
REVOCABLE TRUST
105 GULF ROAD
DOVER, NH 03820
4318 / 766

N / 14B
A.H. WALLINGER & W.A.ROYER, TRUSTEES
THOMAS C. ROYER & DONNA H. ROYER
REVOCABLE LIVING TRUST
111 GULF ROAD
DOVER, NH 03820
4596 / 783

N / 14A
EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2-16-17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113-033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN G. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTATES DRIVE, CITY OF DOVER, COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: OCTOBER 18, 2021, REVISED THROUGH 1/3/22; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 12673.

NOTES:

1.) OWNER OF RECORD:

JAHN H. AND SUSAN G. JANETOS
55 CARLTON WAY
HALES LOCATION, NH 03860
S.C.R.D. VOLUME 3655, PAGE 154

OWNER SIGNATURES

2.) N / 13F – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 545,594 S.F. / 12.53 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT THE SUBDIVISION OF THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. LOTS ARE TO BE SERVED BY MUNICIPAL WATER AND INDIVIDUAL SUBSURFACE DISPOSAL SYSTEMS.

5.) ZONING DISTRICT IS RURAL RESIDENTIAL (R40)

DIMENSIONAL REQUIREMENTS:	
MINIMUM LOT SIZE	= 40,000 S.F.
MINIMUM 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 MAXIMUM

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE A (BASE FLOOD ELEVATIONS NOT DETERMINED) AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

10.) BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

11.) VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 TOPOGRAPHY DEPICTED IS BASED ON LIDAR OBTAINED FROM NHGRANIT.

12.) THE PARCEL IS BENEFITED BY A THIRTY (30) FOOT WIDE ACCESS AND UTILITY EASEMENT OVER PARCEL N / 13-1 AS DESCRIBED IN S.C.R.D. VOLUME 3655, PAGE 154, AND SHOWN ON S.C.R.D. PLAN 94-18.

13.) NH DES STATE SUBDIVISION APPROVAL NUMBER _PENDING_ DATED: .

"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."

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22-2462	SUBDIVISION	–	–
PROJECT NO	TYPE	FIELDBOOK & PAGES	

SUBDIVISION PLAN
PREPARED FOR
JAHN H. AND SUSAN G. JANETOS
TAX MAP N, LOT No. 13F
GULF ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-__

DRAWN BY: RJM | FILE: 2462\DWGS\22-2462
SCALE: 1" = 60' | DATE: AUGUST 23, 2022

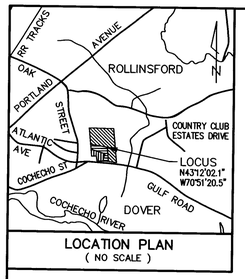
60 30 0 30 60 120 180 240

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

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING – PLANNING – CONSULTING

9/6/2022 09:32:20 File: \\CNEserver1\MSA Projects\2462\Drawings\22-2462.dwg Layout: 2462 SUBDIV



LOCATION PLAN
(NO SCALE)

No.	Bearing	Distance
L1	S84°00'24"W	5.14'
L2	S05°19'55"E	31.06'
L3	N05°48'59"W	15.56'
L4	N15°41'21"W	16.60'

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	05°41'52"	1465.39	145.73	145.67	S86°51'20"W
C2	05°52'03"	1465.39	150.07	150.00	N87°21'42"W
C3	02°38'35"	1465.39	67.60	67.59	N83°06'23"W

LOT AREA CALCULATIONS:

LOT AREA		NON-WETLAND	OUTSIDE OF WET BUFFER
LOT 1	66,546 S.F.	64,290 S.F.	51,778 S.F.
LOT 2	92,586 S.F.	70,693 S.F.	58,930 S.F.
LOT 3	386,462 S.F.	94,079 S.F.	52,769 S.F.

I.R.(found)
N = 256,955.318
E = 1,200,196.775
(SEE NOTE 7)

I.R.(found)
N = 256,947.966
E = 1,200,842.036
(SEE NOTE 7)

N / 13-1
CHINBURG DEVELOPMENT LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5037 / 903

S89°20'50"E
645.30'

S05°19'55"E
900.00'

N05°19'55"W
430.16'

N05°19'55"W
1193.30'

S80°19'51"E
336.07'

N80°19'51"W
332.84'

S80°19'54"E
449.43'

S73°06'11"E
388.43'

N05°19'55"W
185.00'

S85°15'57"W
125.00'

N08°55'00"W
141.02'

S16°53'49"W
200.56'

S05°20'38"E
371.92'

N81°47'06"W
147.59'

N05°48'59"W
134.84'

S84°00'24"W
5.14'

S05°19'55"E
31.06'

N05°48'59"W
15.56'

N15°41'21"W
16.60'

N / 13F-2
PARCEL AREA
386,462 S.F.
8.87 Ac.

N / 13F-1
PARCEL AREA
92,586 S.F.
2.13 Ac.

N / 13F
PARCEL AREA
66,546 S.F.
1.53 Ac.

EDGE OF WETLAND (SEE NOTE 9)

50' WETLAND BUFFER (TYP.)

30' WIDE ACCESS & UTILITY EASEMENT (SEE NOTE 12)

PROPOSED ACCESS & UTILITY EASEMENTS

ZONE "X" 100 YEAR FLOOD SEE NOTE 6

NH STATE PLANE NAD 83 FEET GRID BRGS.

OAK STREET
(public - R.O.W. width varies)

ELMWOOD AVENUE

GULF ROAD (public - 66' wide R.O.W.)

a.k.a. ELIOT BRIDGE ROAD

GRAVEL DRIVE

BARN

HOUSE

HOUSE

25 / 41
BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 763

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

N / 13
NORMA M. TIBBETT
DAHN H. TIBBETT
130 GULF ROAD
DOVER, NH 03820
5037 / 899

N / 13C
AHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

N / 13A
GEORGE HEILSHORN, III
108 GULF ROAD
DOVER, NH 03820
4745 / 541

N / 14C
HAICKEL PAUL BOACKLE, TRUSTEE
HAICKEL PAUL BOACKLE
REVOCABLE TRUST
105 GULF ROAD
DOVER, NH 03820
4318 / 766

N / 14B
A.H. WALLINGER & W.A.ROYER, TRUSTEES
THOMAS C. ROYER & DONNA H. ROYER
REVOCABLE LIVING TRUST
111 GULF ROAD
DOVER, NH 03820
4596 / 783

N / 14A
EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

HdD HcB ScA WfC BzB HcC

TPIT 1 TPIT 2 TPIT 3 TPIT 4 TPIT 5 TPIT 6 TPIT 7 TPIT 8 TPIT 9 TPIT 10 TPIT 11

LEGEND

- I.R.(TBS) – IRON ROD (TO BE SET)
- I.R.(fnd) – IRON ROD FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- EDGE OF WETLAND
- WETLAND
- SOILS LINE
- 62 – CONTOUR (2FT INTERVAL)
- WfC – SOIL DELINEATION
- WATER GATE VALVE
- FIRE HYDRANT
- UTILITY POLE
- (4K) – 4,000 S.F. SUITABLE FOR SEPTIC SYSTEM

THE SOIL TYPES ON THE SITE ARE:
BzB BUXTON SILT LOAM,
3 TO 8 PERCENT SLOPES
HcB HOLLIS-CHARLTON FINE SANDY LOAMS,
3 TO 8 PERCENT SLOPES
ScA SCANTIC SILT LOAM,
0 TO 3 PERCENT SLOPES
WfC WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT,
8 TO 15 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx\

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		
22-2462		SUBDIVISION	–	–
PROJECT NO		TYPE	FIELDBOOK & PAGES	

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2-16-17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113-033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN G. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTATES DRIVE, CITY OF DOVER, COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: OCTOBER 18, 2021, REVISED THROUGH 1/3/22; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 12673.

NOTES:

1.) OWNER OF RECORD:

JAHN H. AND SUSAN G. JANETOS
55 CARLTON WAY
HALES LOCATION, NH 03860
S.C.R.D. VOLUME 3655, PAGE 154

OWNER SIGNATURES

2.) N / 13F – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 545,594 S.F. / 12.53 Ac.

4.) THE INTENT OF THIS PLAN IS TO DEPICT THE SUBDIVISION OF THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. LOTS ARE TO BE SERVED BY MUNICIPAL WATER AND INDIVIDUAL SUBSURFACE DISPOSAL SYSTEMS.

5.) ZONING DISTRICT IS RURAL RESIDENTIAL (R40)
DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 40,000 S.F.
MINIMUM 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 MAXIMUM

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE A (BASE FLOOD ELEVATIONS NOT DETERMINED) AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

10.) BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

11.) VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 TOPOGRAPHY DEPICTED IS BASED ON LIDAR OBTAINED FROM NHGRANIT.

12.) THE PARCEL IS BENEFITED BY A THIRTY (30) FOOT WIDE ACCESS AND UTILITY EASEMENT OVER PARCEL N / 13-1 AS DESCRIBED IN S.C.R.D. VOLUME 3655, PAGE 154, AND SHOWN ON S.C.R.D. PLAN 94-18.

13.) SOIL TEST PITS 1-11 OBSERVED BY KENNETH J. FAUCHER, NH DESIGNER #851, ON AUGUST 5, 2022.

14.) NH DES STATE SUBDIVISION APPROVAL NUMBER _PENDING_ DATED: .

"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."

NHDES SUBDIVISION PLAN
PREPARED FOR
JAHN H. AND SUSAN G. JANETOS
TAX MAP N, LOT No. 13F
GULF ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-__

DRAWN BY: RJM | FILE: 2462\DWGS\22-2462
SCALE: 1" = 60' | DATE: AUGUST 23, 2022

60 30 0 30 60 120 180 240

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

McENEANEY SURVEY ASSOCIATES of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING – PLANNING – CONSULTING

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9/6/2022 09:33:40

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-47

REVISED

Application Type:	Site Review
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Meeting Date:	September 27, 2022

INTENT: The applicant proposes a 23,125± s.f. light manufacturing facility / office building with associated parking. Affiliated CUP for wetland buffer impacts also to PB.

AGENDA ITEM #: 4-D

ACREAGE: 3.49± acres

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING USE: Vacant Land

PROPOSED USE: Manufacturing with Office Use

FLOOR AREA:
Office – 2,500 sf
Manufacturing – 20,625 sf

SURROUNDING: Vacant, Office/Industrial uses

ZBA ACTION: None

ATTACHMENTS: Site Plan and application materials

APPLICATION IS COMPLETE: Yes

CUPs & PERMITS REQUIRED: NHDES AoT, CUP for wetland buffer (P22-48)

WAIVERS REQUESTED:
§153-14.H.(1) - Two (2) driveways;
§153-15. C.(2) Parking location (IT);
§170-12.09 Parking Setback – via Industrial TDR

TRC: July 7 & August 18, 2022

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

Summary of Request and Background:
The applicant seeks site plan approval for a proposed 23,125± sf light manufacturing facility / office building with associated parking on Quality Way. The development will be serviced by municipal water and sewer. This lot was created through the TDR Ordinance §170.27.2. as an effort by the City to promote intensive development on the developable land possessing the least conservation value and to permanently protect lands possessing significant conservation features that provide unique values in their undisturbed condition.

A Conditional Use Permit (CUP) is requested for wetland buffer impact (P22-48) in order to develop the proposed site plan.

This application was most recently before the Technical Review Committee on August 18, 2022 (minutes attached).

Summary of Waiver Requests:
The proposed development is requesting three waivers of the City's development regulations. Waiver requests #1 & #2 below are waivers of Site Review Regulations and reviewed under the criteria set forth in Section 153.21. Waiver request #3 is a waiver of a Zoning Ordinance that is being requested through the Industrial TDR process under Section 170-27.2.F.(4).

1. "§153-14.H.(1) - To reduce the number of conflict points for vehicles, reduce traffic congestion, and improve traffic safety along nonresidential corridors, the following minimum standards are set forth for driveway location and spacing in the C, CM, and IT Districts:
   Number of Driveways per Lot: 1 driveway per 125 feet of roadway frontage Minimum Spacing Between Driveways (35 mph): 155 feet"

The waiver request is to allow two driveways for access to the site and allow them to be approximately 90 feet apart.

2. "§153-15.C.(2) A majority of the parking spaces shall be located to the side or rear of the buildings.

The waiver request is to allow parking in the front of the building.

3. "§170-12.09 Nonresidential – IT: Dimensional Regulations - Parking areas shall be setback at least twenty-five (25) feet from property lines."

The waiver request is to allow parking to within 17.5 feet of the property line at one location through TDR.

Consistency with Land Use Regulations –Waivers/Relief
Section 153-21 of the Site Plan Review Regulations states 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 that waivers identified as #1 & #2 above meet both standards above as presented in the applicant's waiver request narrative. The location of the property at the end of a cul-de-sac creates unique site characteristics and granting these waivers will not create unsafe conditions and be in general conformance with the Site Review Regulations and intent.

Regarding Waiver request #3, Section 170-27.2.F.(4) of the Zoning Ordinance states "SETBACKs for parking, paved areas, and BUILDINGs may be waived by the PLANNING BOARD, and be consistent with the intent to promote intensive development of suitable development sites. Notwithstanding, BUILDINGs shall be at least one hundred fifty (150) feet from residential STRUCTUREs that exist on the date of enactment of the IT and CM Zoning districts, and seventy five (75) feet from the LOT LINE of a disagreeing residential ABUTTER."

The area where the applicant seeks relief from the parking standard of the IT District is well in excess of 150 feet from any residential structure. Planning Staff believes that the small relief request to locate parking 7.5 feet closer than allowed in the IT District is consistent with the intent of the TDR to accommodate intensive development on suitable lands and the general intent of the IT District with no negative impact to the aesthetic quality of the IT District.

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.

§153-14.J.(2) requires easements for future connection between parcels unless the Planning Board finds per §153-14.J.(3) the requirement is not feasible. The applicant provided rational for the Planning Board to find the interconnection is not feasible due to wetland/wetland buffer impact, topography, and the fact industrial type uses are unlikely to attract the same user during their trip.

The City Engineer provided a written note indicating access to the western side would not be feasible, but stated, "A connection to the property to the south appears to be possible but would require additional grading and potentially a retaining structure depending on how the adjacent site is developed. Given that the adjacent lot is vacant, the applicant is not required to build the connection but simply provide an easement for a future access. Therefore, I would recommend that a note be provided on the plans stating that an easement can be provided for a possible future connection to the adjacent lot if deemed necessary for emergency vehicle access to the adjacent lot. The location of the easement would need to be coordinated with the designer and applicant of the adjacent lot when that comes to TRC."

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-47

REVISED

Application Type:	Site Review
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Meeting Date:	September 27, 2022

A condition of approval to add the suggested note has been added.

STAFF RECOMMENDATION - Waivers/Relief:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to grant the waivers with the following subsequent conditions:

Subsequent Conditions to be Met Prior to the Signing of the Plans:
1. Add a note that the Planning Board approved waivers for: (1) §153-14.H.(1) – to allow two (2) driveways; (2) §153-15. C.; and (3) to allow front of building parking area (IT); and have found the criteria of Chapter 153-21.A. have been met; and
2. Add a note that the Planning Board approved a waiver for §170-12.09 * Parking Setback to allow a parking area within 17.5 feet of the lot line through the Industrial TDR provision of 170-27.2.F.(4).

STAFF RECOMMENDATION – Site Plan:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact and vote to approve the Site Plan with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Approval of Conditional Use Permit (P22-48);
2. Revise plan and resubmit for Final Planning Board signature and then recording at the SCRD with the following additions:
   2.1. A note stating "An easement can be provided for a possible future connection to the adjacent lot if deemed necessary for emergency vehicle access to the adjacent lot.";
   2.2. A note stating "Any deed related items to the transfer of the property be reviewed by the City Attorney while still owned by DBIDA.";
   2.3. A solid fence to screen mechanicals;
   2.4. A note detailing the porous pavement maintenance requirements;
   2.5. Owner's signature; and
   2.6. All LLS, LA, PE and CWS stamps and signatures to Final Plan Set.

Subsequent Conditions to Be Met Prior to Construction:
4. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director.

Subsequent Conditions to Be Met Prior to Building Permit:
5. Payment of the water and sewer investment fees at time or request of service.

Subsequent Conditions to Be Met Prior to Occupancy:
6. Issuance of Certificate of Occupancy;

CITY OF DOVER

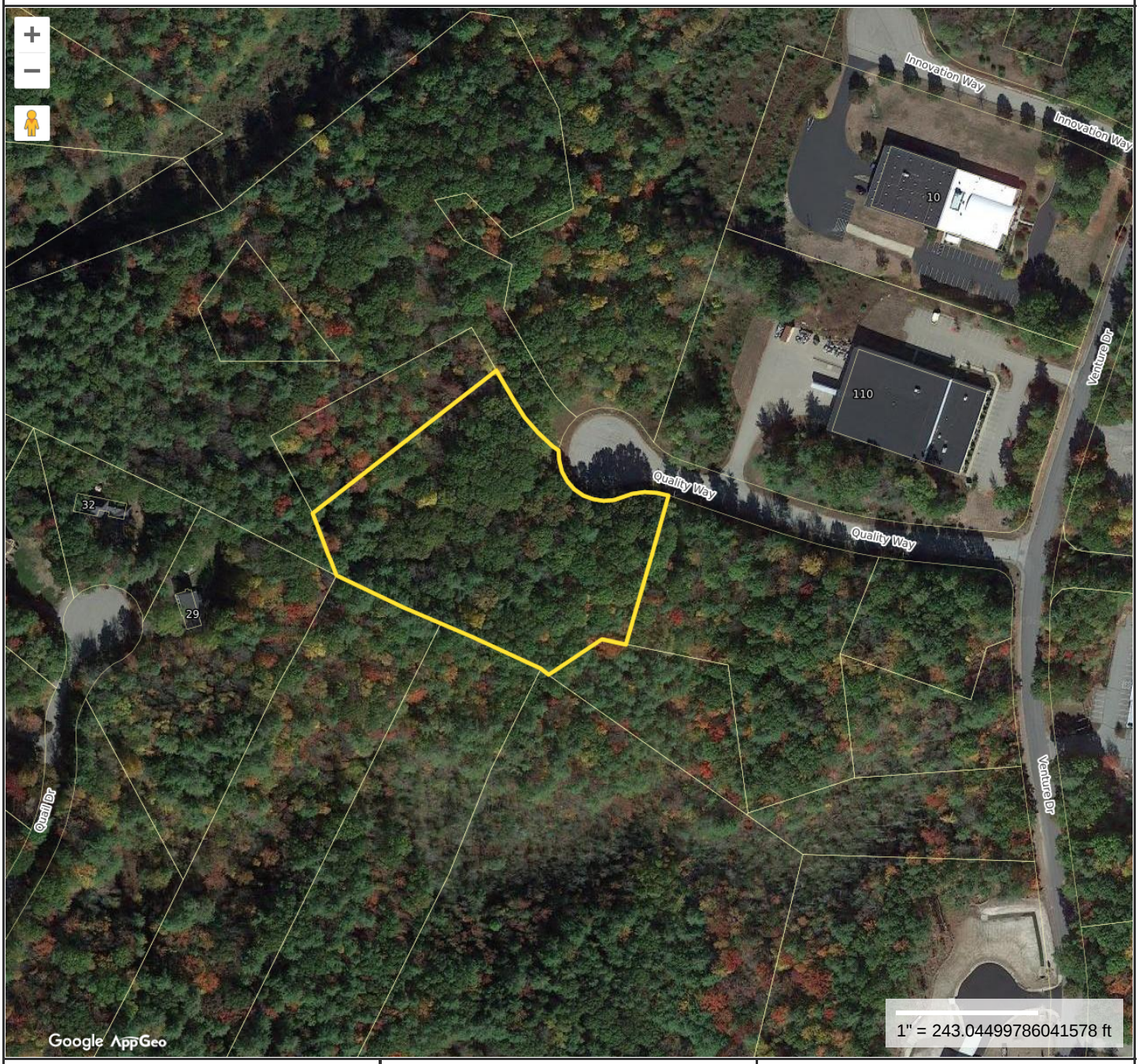
PLANNING BOARD - STAFF MEMO FILE #P22-47

REVISED

Application Type:	Site Review
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Meeting Date:	September 27, 2022

7. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
8. Surety or other form of security acceptable to the City is provided for any unfinished work.

P22-48/COND-2022-0022 & P22-47/SITE-2022-0003 Quality Way



Property Information

Property ID	D0011-007000
Location	QUALITY WY
Owner	DOVER BUSINESS & IND DEV AUTHORITY
Land Use	903
Zoning Code	IT

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 5/3/2021
Data updated Daily

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

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: Weave Filtration LLC Telephone # 603-637-1629

Address of Applicant: 100 Tri-City Road, Unit 117 Somersworth, NH 03878

E-Mail Address: emichaud@weavefiltration.com

Name of Property Owner (*if different from applicant*): DBIDA Telephone # 603-516-6023

Address of Property Owner: 288 Central Avenue Dover, NH 03820

PROPERTY INFORMATION

Address of Property: Quality Way

Assessor's Map # D Lot(s) # 11-7

Zoning District(s) IT Overlay District(s) N/A

Size of Parcel: 152,004 sq. ft. 3.49 ac. Property Deed: Book 1559 Page: 394

Existing Use of Property: VACANT

SITE PLAN INFORMATION

Describe Proposed Use: Light Manufacturing Facility

Area of Parcel to be Developed: 68,650 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 31 (includes 2 ADA)

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

Number of Employees Total: 25 In Maximum Shift: 2

Disposition of Parcel:

Building Footprint 23,125 sq. ft.

Total Building Area 23,125 sq. ft.

Paved Area 45,525 sq. ft.

Building Setbacks:

Front Yard 50 ft.

Rear Yard 50 ft.

Side Yard: Right 50 ft. Left 50 ft.

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

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

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION N/A

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

□ 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: Single Story Concrete & Metal Building

Height of Building: 28.5 ft.± Finished Floor Elevation: 163.5 ft± (office) 170.0 ft± (manufacturing)

Number of Seats (where applicable) N/A

Estimated value of construction: $500, 000 Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: None Requested

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

SURVEYOR INFORMATION

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

Address 24 Chestnut Street Dover, NH 03820 Telephone #: 603-742-0911

Professional License #: Kevin McEneaney, 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 P.O. Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: Stephen J. Haight, PE #7978 E-mail address: shaight@civilworksne.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) John M. Tuttle, Architect TW Designs, LLC

Address 254 Drake Road Strafford, NH 03884 Telephone #: 603-664-2181

Professional License #: John M. Tuttle, NH Architect #04015 E-mail address: john@tw-designs.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Jeffrey R. Hyland, Landscape Architect Ironwood Design Group, LLC

Address P.O. Box 873 Exeter, NH 03833 Telephone #: 603-772-0590

Professional License #: Jeffrey R. Hyland, Landscape Architect #00026 E-mail address: jhyland@fewood.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) John P. Hayes, III, CSS

Address 7 Limestone Way North Hampton, NH 03862 Telephone #: 603-205-4396

Professional License #: John P. Hayes, III, CSS #00087 E-mail address: johnphayes@comcast.net

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: _____

SIGNATURES

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

Signature of Property Owner: _____ Date: _____

x Signature of Applicant (*if different from owner*): _____ Date: 6/16/2022

Signature of Agent: _____ Date: 6/16/2022

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: _____

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: _____

x Signature of Applicant (*if different from owner*): _____ Date: 6/16/2022

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: _____

x Signature of Applicant (*if different from owner*): _____ Date: 6/16/2022

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: Weave Filtration LLC File Number: P22-

PROJECT TITLE: WEAVE FILTRATION

PROPERTY LOCATION: Quality Way Tax Map: D Lot: 11-7

	Where/How Provided	Reviewed
1. Completed and signed Application form	Delivered in Hand & PDF via Email	
2. Plan Review Fees are provided	Delivered in Hand	
3. Electronic copy of the engineered/surveyed plan layout	PDF via Email	
4. Electronic copy of supplementary materials and application	PDF via Email	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Delivered in Hand & PDF via Email	
6. Waiver requests to the Site Plan Review Regulations, with written justification	None Requested	
7. Conditional Use Permit applications	Delivered in Hand & PDF via Email	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	See Plan Set Delivered in Hand & PDF via Email	
9. A colored architectural plan showing all sides of buildings	See Plan Set Delivered in Hand & PDF via Email	
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:	8 Full Size Plan Sets (for TRC), Delivered in Hand & PDF via Email	
Location map at appropriate scale	See Plan Set, Sheet 3	
Proposed Project name and title and Planning File #	See Plan Set, All Sheets	
Date, north arrow and scale	See Plan Set, All Drawing Sheets	
Names of all abutting property owners	See Plan Set, Sheet 3	
Name and address of owners and/or applicants	See Plan Set, Sheet 1	
Signature & stamp of NH licensed land surveyor and/or engineer	Provided upon Approvals	
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	See Plan Set, Sheets 3 & 6	
Location and widths of existing & proposed easements & right of ways	See Plan Set, Sheets 3 & 6	
Location and width of existing and proposed access/egress ways	See Plan Set, Sheets 3 & 6	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	See Plan Set, Sheet 6	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	See Plan Set, Sheet 3	
Existing and proposed topographic information at two foot intervals	See Plan Set, Sheet 7	
Existing and proposed buildings and structure locations	See Plan Set, Sheet 6	
Minimum building setbacks or build to lines on all lots	See Plan Set, Sheet 3 & 6	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	See Plan Set, Sheet 8	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	See Plan Set, Sheet 8	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	See Plan Set, Sheet 4	
Existing and proposed stormwater lines and facilities	See Plan Set, Sheet 7	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	See Plan Set, Sheet 18	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	See Plan Set, All Drawing Sheets	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	See Plan Set,Sheet 2	
Existing natural features and/or significant vegetation on property	See Plan Set, Sheet 3	
Depict existing contours up to 100 ft. beyond project limits	See Plan Set, Sheet 3	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	See Plan Set, Sheet 25 & 26 (L1 & L2)	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	See Plan Set, Sheet 6	
Location, material and size of existing and proposed pavement area	See Plan Set, Sheet 6 & 12	
Location of proposed fire lanes	N/A	
Specify finished floor elevations of buildings	See Plan Set, Sheet 7	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	See Plan Set, Sheet 6	
Depict all service, storage, loading bays and utility areas	See Plan Set, Sheet 6	
All applicable Dover Common Site Plan notes	See Plan Set, Sheet 4	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Delivered in Hand & PDF via Email	
Stormwater Management System Operation and Maintenance Plan	Delivered in Hand & PDF via Email	
Letter to Serve from Public and Private Utilities	Delivered in Hand & PDF via Email	
Erosion and Sedimentation Control Plan	Delivered in Hand & PDF via Email	
Landscape Operation and Maintenance Plan	Delivered in Hand & PDF via Email	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	Alteration of Terrain Permit (pending)	
If wetland buffer, indicate placards locations, as applicable	TBD	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	See Plan Set, Sheet 21	
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_____

PROJECT NARRATIVE

for

WEAVE FILTRATION LLC

Site Plan

Quality Way

Tax Map D, Lot 11-7

JUNE 2022

Revised: July 2022

PROJECT OVERVIEW & SITE CHARACTERISTICS

The project parcel is shown on Tax Map D as Lot 11-7, is located within the IT District and consists of +/- 3.49 acres, currently undeveloped. The project applicant is proposing a +/- 23,125 s.f. light manufacturing and office building with associated parking. The parcel is currently owned by the Dover Business & Industrial Development Authority (DBIDA). The Applicant has met with DBIDA and received an endorsement to proceed.

The proposed site will include public water and sewer connections, underground electric service, natural gas service, and associated drainage improvements. A small portion of grading, drainage, pavement, and building is proposed within the 50' wetland buffer with impacts of 5,075 sf. (See Conditional Use Permit application). There are no proposed impacts to any wetlands.

The project site consists of the following general improvements:

- Log and clear the site for construction.
- Construction of +/- 23,125 SF professional/light manufacturing facility with associated parking, truck access, and loading docks.
- Construction of on-site stormwater detention and treatment system, grading, and other drainage requirements.
- Site utility construction.
- Construction of (2) new entrances on Quality Way.
- Stabilize remaining areas with loam and seed.

DRIVEWAY AND PARKING LOT

Employee and visitor parking will be segregated from the truck delivery entrance. The truck access will be 24' wide and the parking area will have a 24' wide driveway entrance and drive aisle. Lighting for the proposed parking lot and driveway will be per the Lighting Plan and will be LED fixtures that are dark sky compliant.

For the proposed development, the City of Dover parking maximums allow for the following:

Required/Proposed:

- Office: 1 space per 300 s.f. (2,500 s.f.) = 8 surface spaces
- Manufacturing: 1 space per 800 s.f (20,625 s.f) = 26 surface spaces

  - Total proposed = **30 Surface Spaces (includes 2 Accessible Spaces)**

PROJECT NARRATIVE

for

WEAVE FILTRATION LLC

Site Plan

Quality Way

Tax Map D, Lot 11-7

JUNE 2022

Revised: July 2022

WETLAND SETBACK IMPACT TYPE

The project work requires a conditional use permit from the City of Dover. Approximately +/- 5,075 sf of the wetland buffer will be impacted. The project does not impact bogs, marshes, sand dunes, tidal wetlands, cedar swamps, undisturbed tidal buffer zone, or involve any work within 50 feet of a salt marsh. The project is not located within 100 feet of prime wetlands.

DRAINAGE

The parcel is located on the south side of the Quality Way cul-de-sac. The proposed development will consist of approximately 3.49 acres surrounded by other commercial properties within a previously established industrial park. The site is undeveloped, and the groundcover primarily consists of wooded vegetation with grassed areas along the edge of the Quality Way cul-de-sac. The 3.7 acre watershed of the parcel includes the project site as well as a portion of Quality Way. On site soils are a mix of Gloucester, Charlton, Buxton, Elmwood, Udorthents, and Scantic soils. The Gloucester series soils are HSG A, Charlton is HSG B, with the Buxton, Elmwood, and Udorthents series soils classified as HSG C, and the Scantic soil series classified as HSG D.

The project proposes 128,900± sf of disturbance including the construction of a 23,125 sf commercial building, corresponding site improvements including site grading, paved parking and loading areas, as well as stormwater quality and detention drainage improvements. The post development watershed is modeled utilizing the same points of analysis as the predevelopment watershed, allowing direct comparison of the peak runoff between the pre and post developed conditions (see drainage report).

TRAFFIC

A traffic study was completed for the project and is attached as a report to this submittal. Overall, and as expected, there is minimal increase in traffic due to the proposed facility.

UTILITIES

The proposed project will connect to City of Dover water and sewer as well as Unitil for natural gas, and Eversource for electricity. Water, sewer, electric lines and natural gas lines are currently located within Quality Way. Building connections will be made per the City's Community Services Utility Division and Fire Department requirements and standards.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-48

Application Type:	Conditional Use Permit - Wetlands
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Meeting Date:	September 27, 2022

INTENT: The applicant seeks a CUP to permit a 5,075 sf wetland buffer impact to construct a 23,125± sf light manufacturing facility / office building with associated parking. Site plan (P22-47)

AGENDA ITEM #: 4-C

ACREAGE: 3.49± acres

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING USE: Vacant Land

PROPOSED USE: Manufacturing with Office Use

SURROUNDING: Vacant, Office/Industrial uses

ZBA ACTION: None

ATTACHMENTS: Site Plan and application materials

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

PERMITS REQUIRED: NHDES AoT, Site Plan (P22-47)

WAIVERS REQUESTED: None associated with CUP

TRC: July 7 & August 18, 2022

CONSERVATION COM: September 12, 2022

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

Summary of Request and Background:
The proposed site design will impact a total of 5,075 sf of the wetland buffer requiring approval of a Conditional Use Permit (CUP). The impact is primarily for the associated grading (2,957 sf), drainage (1,800 sf), pavement (285 sf), and the building (33 sf).

The CUP is required to obtain site plan approval for a proposed 23,125± sf light manufacturing facility / office building with associated parking on Quality Way. This lot was created through the TDR Ordinance §170.27.2. as an effort by the City to promote intensive development on the developable land possessing the least conservation value and to permanently protect lands possessing significant conservation features that provide unique values in their undisturbed condition.

This application was most recently before the Technical Review Committee on August 18, 2022 (minutes attached).

This CUP permit application was endorsed by the Conservation Commission at their September 12, 2022 meeting (draft minutes attached), with the request that the Planning Board "…receive indication that vernal pools were looked for and that the existing functions and values of the wetlands will not be impaired."

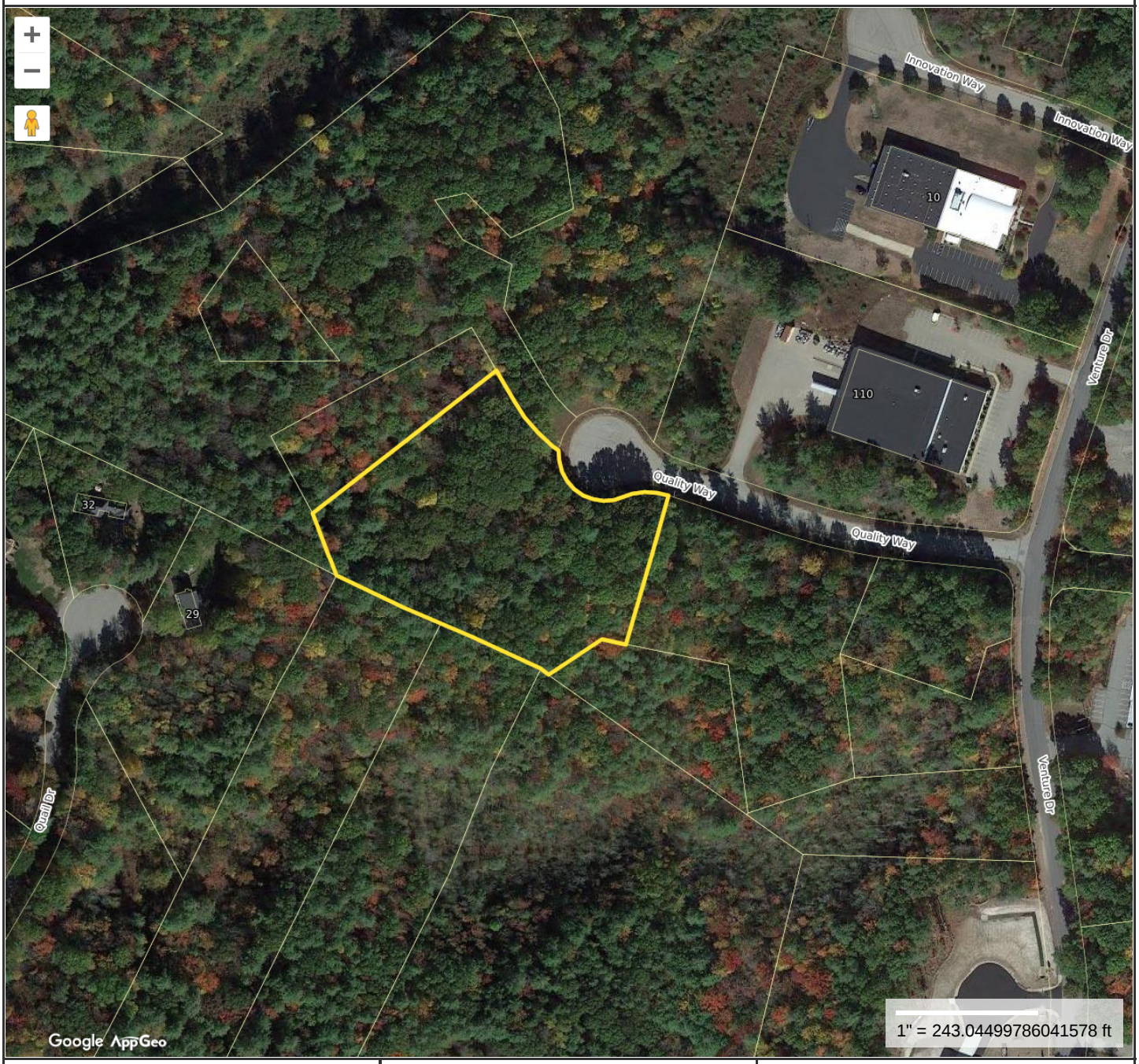
CONSISTENCY WITH LAND USE REGULATIONS:
The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant considered the criteria and attempted to create minimal wetland/wetland buffer disturbance on the site.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:
1. Site Plan (P22-47) be approved;
2. Copies of the NHDES Permit be submitted to the Planning Department and added to the plan set coversheet; and
3. A note be added to the Site Plan (P22-47) stating the Planning Board conditionally approved the Conditional Use Permit (P22-48) on September 27, 2022.

P22-48/COND-2022-0022 & P22-47/SITE-2022-0003 Quality Way



Property Information

Property ID	D0011-007000
Location	QUALITY WY
Owner	DOVER BUSINESS & IND DEV AUTHORITY
Land Use	903
Zoning Code	IT

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 5/3/2021
Data updated Daily

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

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: Weave Filtration LLC Telephone # 603-637-1629

Address of Applicant: 100 Tri-City Road, Unit 117 Somersworth, NH 03878

E-Mail Address: emichaud@weavefiltration.com

Name of Property Owner (if different from applicant): DBIDA Telephone # 603-516-6023

Address of Property Owner: 288 Central Avenue Dover, NH 03820

PROPERTY INFORMATION

Assessor's Map # D Lot(s) # 11-7

Address of Property: Quality Way

Zoning District(s) IT Overlay District(s) NONE

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:

The proposed Site design will impact a total of 5,075 s.f. of the wetland buffer. The impact is primarily for the associated grading (2,957 s.f.) and drainage (1800 s.f.) and also small portions for pavement (285 s.f) and the building (33 s.f.). NO wetlands will be impacted.

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

_____

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

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

Professional License #: Stephen J. Haight, 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: _____

x Signature of Applicant (if different from owner): _____ Date: 6/16/2022

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: _____

P22-47	SITE-2022-0003	WEAVE FILTRATION	QUALITY WAY			
Property ID	**Owner 1**	**Owner 2**	**Owner Address 1**	**City**	**State**	**Zip**
A0049-012000	MOREAU SCOTT &	CURTIS MARCY	32 QUAIL DR	DOVER	NH	03820
A0049-013000	PORTER DOUGLAS W &	PORTER YUKARI	29 QUAIL DRIVE	DOVER	NH	03820
D0011-001000	DOVER BUSINESS & IND DEV AUTHORITY		288 CENTRAL AVE	DOVER	NH	03820
D0011-004000	QUALITY WAY LLC		55 MAIN ST UNIT 407	NEWMARI	NH	03857
D0011-008SN1	DOVER BUSINESS & IND DEV AUTHORITY	F/K/A DOVER IND DEV AUTHORITY	288 CENTRAL AV	DOVER	NH	03820
D0012-001000	TSB PROPERTIES LLC		385 SIXTH ST	DOVER	NH	03820
D0013-003000	SARNIA PROPERTIES INC		1 HAVEN COURT	PORTSMC	NH	03801
	WEAVE FILTRATION LLC		100 TRI-CITY ROAD UNIT 11	SOMERSW	NH	03878
	MCENEANEY SURVEY ASSOCIATES		24 CHESTNUT STREET	DOVER	NH	03820
	CIVILWORKS NEW ENGLAND		PO BOX 1166	DOVER	NH	03821
	JOHN TUTTLE ARCHITECT	TW DESIGNS LLC	254 DRAKE ROAD	STRAFFO	NH	03884
	JEFFREY HYLAND	IRONWOOD DESIGN LLC	PO BOX 873	EXETER	NH	03833
	JOHN HAYES, III, CS		7 LIMESTONE WAY	NORTH H/	NH	03862

J. Aube expressed his desire for more information regarding the current state of the wetland resources on site especially considering the fully wooded nature of the lot.

K. Murphy moved to endorse the application citing the use of alternative materials to plastics, the inclusion of a silt sock, addition of retaining walls where possible, and treatment of an area that is not currently treated but asked that the applicant provide details noting if any vernal pools were discovered onsite and highlighting the functions and values of the wetlands before the application is heard by the Planning Board. J. Aube seconded. Vote: 4 yes.

B. City of Dover Conditional Use Permit for Weave Filtration, LLC, (Owner: DBIDA), (Agent: Civilworks New England), Assessor's Map D, Lot 11-7, zoned IT, located off Quality Way. Proposal is for the construction of a 23,125 square foot building creating 5,075 square feet of wetland buffer impact mostly associated with the grading and drainage.

Joe Griffin with Civilworks New England was present to explain the application.

K. Murphy: For a large site with a small amount of porous pavement, is the applicant committed to maintaining it?

J. Griffin: They are committed to maintaining it and signs will be posted on the site regarding the maintenance. Conservations about this were conducted with the City Engineer during the Technical Review Committee meetings. A vacuum assisted brush will be used a couple times a year to clear built up debris.

J. Aube: Could you speak to when the delineation was conducted and the corresponding functions and values of the wetland area?

J. Griffin: Functions and values was not performed but the wetland was delineated within the past six months.

K. Murphy: Is there curbing around the site and could you talk about how the stormwater would flow through the property?

J. Griffin: Curbing directs the water into the conveyance swale that brings it to a sediment forebay prior to it entering the wet pond. Roof drain also brings the water to the sediment forebay. Is expanding treatment out to quality way where there currently was not treatment.

K. Murphy moved to endorse the application given the considerations for treatment of stormwater that is not currently treated, avoidance of deep sump catch basins where possible, pervious pavement and the maintenance plan provided the recommendation that the Planning Board receive indication that vernal pools were looked for and that the existing functions and values of the wetlands will not be impaired. B. Batchelder seconded. Vote: 4 yes.

DRAFT

Weave Filtration LLC
100 Tri-City Road, Unit 117
Somersworth, NH 03878

June 16, 2022

City of Dover
Planning Board
288 Central Ave
Dover, NH 03820

Ref: Weave Filtration Site
Quality Way, Tax Map D, Lot 11-7
Dover, NH 03820

Re: Letter of Authorization

Erick Michaud of Weave Filtration authorizes, Civilworks New England to represent the applicant to the State of New Hampshire, the City of Dover Planning Board and any other Dover Board or Committee relative to the pursuit of permits for the development of the subject parcel.

Sincerely,

Erick Michaud – Weave Filtration

Joseph Griffin

From: Parker, Christopher G. <C.Parker@dover.nh.gov>
Sent: Thursday, June 16, 2022 10:40 AM
To: Steve Haight; David Choate (david.choate@colliers.com)
Cc: Joseph Griffin
Subject: Weave Site plan application

Steve,

This is confirmation that DBIDA has approved a purchase and sales agreement for Weave Filtration for an approximately for a 3.5 acre lot on Quality Way in Enterprise Park.

As part of the PnS DBIDA acknowledged the expectation that Weave Filtration will seek site plan approval from the City of Dover Planning Board.

The applicant should sign the application as the applicant and the City Manager will sign as the owner.

Chris

Christopher G. Parker, AICP
Deputy City Manager: Development and Strategic Initiatives
City of Dover, NH
288 Central Avenue
Dover, NH 03820-4169
e: c.parker@dover.nh.gov
p: 603.516.6024 f: 603.516.6049

Dover: First in New Hampshire, First with you!
www.dover.nh.gov

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CHRISTOPHER G. PARKER, AICP
Deputy City Manager
c.parker@dover.nh.gov

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City of Dover, New Hampshire

OFFICE OF THE CITY MANAGER

September 13, 2022

Gina Cruikshank, Chair
City of Dover, Planning Board
288 Central Avenue
Dover, NH 03820

Dear Chair Cruickshank,

On behalf of myself and the Dover Business and Industrial Development Authority, I am writing to you in support of the site plan application for Weave Filtration, which the Planning Board is reviewing.

The Business and Industrial Development Authority (the Authority) met on September 6th and voted that the architectural design of the building was in keeping with the protective covenants for Enterprise Park and encourage the Planning Board to vote in favor of the site plan as presented. This application is the result of the applicant, their professional agent, Civilworks, NE, and staff addressing concerns about drainage, access and layout, as per the site plan regulations.

The Authority and the City Council entered into a purchase and sales agreement on this lot in early 2022, and the Authority and its members are excited to see this project receive its final approval with the Conditions of Approval laid out by staff. The project allows a local business to expand their footprint in the seacoast and brings innovative manufacturing to Dover with the jobs and tax base that accompany that manufacturing.

I am happy to speak further to this letter, if helpful.

Sincerely,

Christopher G. Parker, AICP
Deputy City Manager

CC: Donna Benton, Director of Planning and Community Development

IT DISTRICT NARRATIVE

for

WEAVE FILTRATION LLC

Site Plan

Quality Way

Tax Map D, Lot 11-7

SEPTEMBER 2022

SITE DESIGN AND DEVELOPMENT CRITERIA NARRATIVE - § 153-15

The project parcel is shown on Tax Map D as Lot 11-7, is located within the IT District and consists of +/- 3.49 acres, currently undeveloped. The project is located at the cul-de-sac end of Quality Way which is located in Dover's Enterprise Park. The project applicant is proposing a +/- 23,125 s.f. light manufacturing and office building with associated parking. The parcel is currently owned by the Dover Business & Industrial Development Authority (DBIDA). The Applicant has met with DBIDA and received an endorsement to proceed.

The following responses (**Responses in Bold**) provide narrative in support of meeting the requirements identified in § 153-15 Design Standards for Innovative Technology (IT) District of the Dover Site Design and Development Criteria.

A. Purpose. These design standards are adopted to regulate development within the Innovative Technology (IT) District, which provides an area for large-scale high technology, research, professional office and clean manufacturing uses needing large sites and high aesthetic standards. The design standards are intended to:

   (1) Establish and maintain high aesthetic standards in the IT District. **The project proposes an aesthetically pleasing building and will incorporate landscaping to maintain the aesthetics of the industrial neighborhood.**
   (2) Preserve the district's natural resources and visual character by assuring that improvements are properly related to their sites and to neighboring developments. **The proposed building incorporates the sites natural grading to minimize building height as seen from the road. The site layout shields the shipping and receiving portion of the site behind the building, thus maintaining the visual character of the neighborhood. The project includes a landscape plan to further enhance the site as seen from Quality Way. The project does not propose wetlands disturbances and has minimized disturbances within the wetland setback.**
   (3) Encourage good design and innovation in site planning and development, including architecture, landscaping, and graphic design. **The project proposes an aesthetically pleasing building and will incorporate landscaping to maintain the aesthetics of the industrial neighborhood.**
   (4) Encourage the compatible and complementary development of each site in the district. **The project proposed is compatible and complimentary of the developed industrial/manufacturing parcels within the area.**
   (5) Minimize conflicts between residential and nonresidential uses. **The project is located in an industrial park (Enterprise Park).**

B. Building siting and design. The general character of the IT District is intended to be a campus or parklike setting, with emphasis on the natural characteristics of the site. The site design should

create a sense of entry into the site and into the businesses within the site through landscaping, facade treatment, and signage. The architectural character of each building shall be of contemporary design and style. The design should integrate the building's form, textures and colors with the particular landscape and topographical character of each site. Specific requirements are as follows:

(1) All exterior building walls and structures shall be constructed with attractive, durable materials such as textured concrete, masonry, stone, brick, clapboard, finishing wood, stucco or glass. **The building's exterior is consistent with other buildings in the Dover Industrial Park as accepted by DBIDA.**
(2) Buildings with exterior walls made of metal or corrugated steel shall not be permitted. **The building's exterior is consistent with other buildings in the Dover Industrial Park as accepted by DBIDA.**
(3) Building roofs shall be uncluttered, and when flat roofs are visible from public roads, pitched roofs or parapets are required. **The project does not propose flat roofs or rooftop equipment.**
(4) Rooftop and ground-mounted mechanical units and ventilating fans are to be either integrated into the design of the building or screened from view. **The project does not propose rooftop mounted mechanical units. Mechanical units visible from Quality Way include vegetative screening.**
(5) All exterior service, loading, storage and utility areas shall be located at the side or rear of the building and screened or sheltered so as not to be visible from the public road or adjacent parcels. **The shipping and receiving area is located at the back of the site and is not visible from Quality Way.**

C. Parking areas and pedestrian circulation.

(1) Parking areas shall be screened from public streets and existing residential uses so as to minimize the visibility of such areas. **The parking areas are screened with vegetation.**

(2) A majority of the parking spaces shall be located to the side or rear of the buildings. **The parking area locations have utilized as much of the back and sides of the building as possible based on site characteristics and wetland setbacks. The parking areas are screened with vegetation.**

(3) All sites shall be designed so as to promote safe pedestrian access, not only within the development but to adjacent properties and public streets. **The project proposes a manufacturing facility to be located at the end of a cul-de-sac in the Dover Industrial Park. A sidewalk along Quality Way is accessible from the site.**

D. Landscaping.

(1) A landscaping plan shall be submitted as part of the development application. The landscaping plan shall depict a scheme that creates a parklike setting. Maintenance of existing vegetation should be incorporated in the landscaping plan when appropriate. **The landscape plan is submitted as part of the application process and includes an inspection and maintenance manual.**

(2) Existing trees of significant size or special character should be preserved wherever possible. **Tree removal that is necessary for site development has been minimized to maintain as much existing woodland and buffer as possible.**

(3) All trees should be planted in a permeable area of no less than a three-foot-wide radius from the base of the tree. **Tree locations are situated so as to ensure the maximum likelihood of survival and at a minimum 3' from edge of pavement.**

(4) Planting islands should be used to define vehicular and pedestrian circulation patterns and to break up large expanses of pavement. A combination of end cap islands and linear islands running parallel to parking rows is preferred. Islands should be planted with either grass or evergreen shrubs and include trees. **The project does not propose planting islands as the parking area is relatively small. The large expanse of pavement to the back of the proposed building is necessary to support shipping and receiving for the facility while allowing truck access.**

(5) Landscaping should be maintained to present a healthy appearance, and dead materials should be replaced. **The landscape plan is submitted as part of the application process and includes an inspection and maintenance manual.**

E. Exterior lighting. Exterior lighting shall be low profile. High-intensity directional lighting shall be prohibited. Lighting shall be designed and oriented so as to avoid glare onto adjacent property or streets. **Lighting is proposed to be cut-off type fixtures that provide onsite lighting.**

WAIVER REQUEST

ACCOMPANYING

SITE REVIEW APPLICATION

for
Weave Filtration
Quality Way
Tax Map D, Lot 11-7

Dover Site Review Regulations: Section 153-14. H. (1)

To reduce the number of conflict points for vehicles, reduce traffic congestion, and improve traffic safety along nonresidential corridors, the following minimum standards are set forth for driveway location and spacing in the C, CM, and IT Districts:

Number of Driveways per Lot: 1 driveway per 125 feet of roadway frontage
Minimum Spacing Between Driveways (35 mph): 155 feet

Waiver request: To allow two driveways for access to the site and allow them to be approximately 90 feet apart.

The parcel has approximately 225 feet of frontage along the cul-de-sac at the end of Quality Way. The project proposes 2 driveways for the site. The first driveway primarily provides truck access to the shipping/receiving area at the rear of the site as well as access to one-third of the on-site parking. The second driveway provides automobile access to the remaining parking spots that provide employee and visitor parking for primary access to the offices.

The project proposes 90 feet (lineal) of distance between the proposed driveways. The minimum spacing requirements are based on speed limits, along a local road, of 35 mph. The speed limit, at the cul-de-sac end of the local road, will not approach anywhere near 35 mph due to the "dead end" nature of the road.

Granting this waiver will not create an unsafe condition as the road is not a through road and the locations are at the end of the road, where speed limits are significantly reduced.

Granting this waiver is in general conformance with the intent of the Site Review Regulations, specifically **Section 153-14. H. (3)**.

WAIVER REQUEST

ACCOMPANYING

SITE REVIEW APPLICATION

for
Weave Filtration
Quality Way
Tax Map D, Lot 11-7

Dover Site Review Regulations: Section 153-15. C. (2)

A majority of the parking spaces shall be located to the side or rear of the buildings.

Waiver request: To allow parking in the front of the building.

The parcel is located on the cul-de-sac at the end of Quality Way. The primary use of the facility will be light manufacturing and office area. The facility requires loading docks and shipping and receiving areas. These facilities, and the associated truck turning and loading areas have been situated to the back of the building, thus improving the visual character of the site. Parking in the rear of the building is limited due to the necessary shipping and receiving activity located at the rear. The existing site grading, site and building characteristics, and office location limit the availability of parking on the sides of the building. Locating the parking in front of the office area will not negatively affect the visual characteristics to the surrounding parcels or to Quality Way.

Granting this waiver is in general conformance with the intent of the Site Review Regulations.

WAIVER REQUEST

ACCOMPANYING

SITE REVIEW APPLICATION

for
Weave Filtration
Quality Way
Tax Map D, Lot 11-7

Section 09 Nonresidential – IT: Dimensional Regulations

Parking areas shall be setback at least twenty-five (25) feet from property lines.

Waiver request: To allow parking to within 17.5 feet of the property line at one location through TDR.

Allowing parking within the 25-foot property line setback results in 98 sf of parking within the setback. By maintaining the parking closer to the property line, the design was able to minimize impacts to the 50-foot wetland buffer. Pushing the parking to the required 25 feet from the property line would result in an additional 3,165 sf of wetland buffer impact and an additional 1,050 sf of pavement.

Granting this waiver is in general conformance with preserving the IT district's natural resources, good design in site development, and it will not negatively impact the aesthetic standards of the district.

EVERSOURCE ENERGY

1700 Lafayette Road
Portsmouth, NH 03801

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

June 6, 2022

Joseph Griffin
Civilworks NE
181 Watson Road
Dover, NH 03820

Dear Erick Michaud:

I am responding to your request to confirm the availability of electric service for the proposed Quality Way Tax Map D, Lot 7 project being constructed for/by Weave Filtration.

The proposed project consists of a 1-story building with 0 residential units approximately 23,125 s/f of factory/office space at the ground level. The proposed development will be constructed along Quality Way.

The developer will be responsible for the installation of all underground facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan 8. The proposed building service will be fed from ..... to be determined by Eversource Engineering as depicted on utility plan 8. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed overhead/underground facilities listed above.

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

The attached drawing titled "Utility Plan" dated 6/16/2022, 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" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

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

Respectfully.

Trevor Emmons
Eastern Regional Engineer, Eversource

cc: Michael J. Busby, PE, Eastern Regional Engineering and Design Manager, Eversource
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

Unitil
Northern Utilities, Inc.

June 6th, 2022

Michael Menary
Staff Engineer
Civilworks New England, PLLC.

Natural Gas to Weave Filtration on Quality in Dover, NH

Hi Michael,

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for natural gas service:

Unitil hereby confirms that natural gas is available for the proposed building at Weave Filtration on Quality in Dover, NH

If you have any questions, please contact me at 603-534-2379.

Sincerely,



Dave MacLean
Senior Business Development Rep
Unitil
T 603.294.5261
M 603.534.2379
F 603.294.5264
Email macleand@unitil.com

Michael Menary

From: Michael Menary
Sent: Friday, June 3, 2022 1:44 PM
To: k.mavrogeorge@dover.nh.gov
Cc: Joseph Griffin
Subject: CNE 21094 - Weave Filtration-Quality Way, Dover, NH 03820 Tax Map D, Lot 7

Hello Kenneth,

Weave Filtration is proposing to construct a commercial building on Quality Way; Tax Map D, Lot 7.

The project will consist of a 23,125 sf building, with 2,500 sf of office space. This will result in approximate water & sewer usage of approximately 275 gpd. [1] The client has specified that their manufacturing processes do not generate waste water.

[1] Volume is based on NHDES Env-Wq 1008.03 Table 1008-1 Design Flow figures: for Unspecificed office space (2,500 sf) and factory employees (15 employees).

Please advise on the availability of sewer and water to the site.

Thank you for your time

Michael Menary
Staff Engineer
Civilworks New England, PLLC.
181 Watson Road
P.O. Box 1166
Dover, New Hampshire 03821
O: (603) 749-0443
C: (973) 907-0370

CIVILWORKS NEW ENGLAND

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

TRAFFIC ASSESMENT MEMORANDUM

INTRODUCTION

Civilworks New England has prepared this traffic-assessment memorandum (TAM). This TAM regards Weave Filtration which is to be located on Map D, Lot 11-7 off of Quality Way in the City of Dover, New Hampshire.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit
- sight distances at the proposed driveways
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that:

- relevant sight distances at the Quality Way/proposed driveway intersections 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 south westerly side of the cul-de-sac located on Quality Way
- has an area of about 3.49 acres
- is presently wooded, vacant land

PROPOSED PROJECT DESCRIPTION

The project will provide:

- one building with a total floor area of about 23,000 square feet (sf)
- floor area will consist of 20,625 sf of light industrial and 2,500 sf of office space
- two unsignalized driveways intersecting the south side of Quality Way

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ROAD DESCRIPTION

Quality Way:

- is under the jurisdiction of the City
- is a local industrial cul-de-sac street
- Quality Way is oriented about east-west
- at the east end, intersects with Venture Drive, a local street serving Enterprise Park
- includes a relatively straight horizontal alignment
- has minor vertical grades
- has bituminous concrete pavement in overall good condition
- has one travel lane per direction, with 28ft. wide pavement
- has unmarked pavement
- has no posted speed limit
- includes existing utility services

PUBLIC TRANSIT

Collaborative Alliance for Seacoast Transportation (COAST) Route 33 provides on-call bus service stopping anywhere along Venture Drive. Service is on non-holiday weekdays. Route 33 connects with:

- central Dover, to the southeast
- the Dover Transportation Center, to the southeast
- the New Hampshire Department of Transportation Park and Ride facility near Indian Brook Drive and Spaulding Turnpike interchange 9, to the east
- the Strafford County Complex, to the west

SIGHT DISTANCES

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for sight distances at intersections with no signal in terms of:

- stopping sight distance (SSD)

Quality Way services traffic from the abutters' (Quality Way, LLC) loading dock access area across the street and approximately 130' east from the cul-de-sac. This proposed development will access from the southerly side of Quality Way. Due to Quality Way not being a through road, the project

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location is at the very end of Quality Way, very low traffic volume, and the short length (750ft.) of Quality Way, sight distance is not an applicable analysis.

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 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 industrial portion of the proposed development while Table 2 shows the calculations for the general office building portion of the proposed development as:

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	20.6	100	50	50
AM - Peak Hour of Adjacent Street Traffic	0.74	20.6	15	13	2
PM - Peak Hour of Adjacent Street Traffic	0.65	20.6	13	2	11

* ITE, *Trip Generation Manual,* 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	22	11	11
AM - Peak Hour of Adjacent Street Traffic	1.52	2	3	3	0
PM - Peak Hour of Adjacent Street Traffic	1.44	2	3	1	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 46.

[3] ITE, *Trip Generation Manual,* Volume 4, General Urban/Suburban and Rural (Land Uses 400-799), pages 707 to 726.

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- weekday daily, 122 (total of 61 in and 61 out)
- weekday AM-street-peak hour, 18 (16 in and 2 out)
- weekday PM-street-peak hour, 16 (3 in and 13 out)

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations are not sensitive to trip distribution/assignment. Vehicle-trips to and from the east may predominate largely due to connections with central Dover and the Spaulding Turnpike. All trips access the site from Sixth Street via Venture Drive.

POTENTIAL TRAFFIC IMPACTS

The calculations show less than 100 peak-hour primary vehicle-trips, due to the proposed project. More specifically, tabulated peak-hour trip generation is:

- 16 to 18 vehicle-trips
- split entering versus exiting the site

Therefore, the proposed project is not anticipated to add significant new traffic to Sixth Street or Venture Drive.

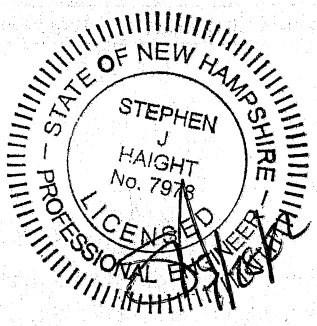
CONCLUSION

In conclusion:

- sight distances at the Quality Way/proposed driveway intersections 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. Weave Filtration

Stormwater Management System Inspection & Maintenance Plan

Prepared for:

WEAVE FILTRATION
Map D, Lot 11-7

Quality Way
Dover, New Hampshire
Strafford County

JUNE 2022
Revised: July 28, 2022
Revised: September 1, 2022

Owner of Record:

WEAVE FILTRATION, LLC
100 Tri-City Road, Unit 117
Somersworth, New Hampshire 03878

Prepared By:

CIVILWORKS NEW ENGLAND
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for **Weave Filtration, 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 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 while at the same time ensuring the recharge of groundwater resources through continued infiltration.

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 NH DES 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

Weave Filtration, LLC
100 Tri-City Road, Unit 117
Somersworth, NH 03878

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

Weave Filtration, LLC
100 Tri-City Road, Unit 117
Somersworth, NH 03878

Erick Michaud
Phone: (603) 637-1629
Email: emichaud@weavefiltration.com

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NH DES in writing.

Management Company

Weave Filtration, LLC
100 Tri-City Road, Unit 117
Somersworth, NH 03878

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 New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NH DES. See the Inspection and Maintenance Plan for frequency requirements. A copy of the completed Stormwater Management System's Inspection & Maintenance Log 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 NH DES upon request.

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 and to recharge the underlying groundwater resources. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Energy Dissipation Structures (Rip Rap)
- Catch Basins
- Wet Pond
- Grassed Lined Conveyance Swale
- Porous Pavement
- Pavement
- Litter / Trash Removal

Structure callouts correlate to 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 and to effectively recharge the underlying groundwater resources.

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 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.

CATCH BASIN(S):

- Inspect once per year.
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately and sediment accumulations ≥ 1 foot.
- 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.

WET POND:

- Inspect at least once per year.
- Periodic mowing to control vegetation growth.
- Remove any woody vegetation.
- Remove any debris from pond and outlet structure.
- Remove accumulated sediment.

GRASS LINED CONVEYANCE 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.

POROUS PAVEMENT:

- Prohibit sanding.
- Minimize application of salt for ice control.
- Monitor periodically, at least twice annually, within 30 minutes of a precipitation event, to ensure that the pavement surface drains effectively after storms.
- See attached checklist for inspection requirements.
- Inspect for salt accumulation, sediment, organic debris, etc. and periodically clean (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

- Inspect adjacent non-permeable pavement sections (1-2 times per year) and ensure they are free of debris/sediment to prevent tracking.
- Inspect adjacent vegetated areas (1-2 times per year) to ensure there are no signs of erosion and sediment/organic debris run-on to the porous pavement areas.
- Inspect areas (as needed) to ensure stock piling of snow, sand/salt, mulch, soil, yard waste, etc. is not occurring.
- Inspect pavement for damaged areas (as needed) and repair as they are identified.

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.
- See attached "Winter Maintenance Guidelines for Porous Pavements" for de-icing agent recommendations.

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.
- See attached "Winter Maintenance Guidelines for Porous Pavements" for sanding and salting recommendations.

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	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Energy Dissipation (ED) Structures (Rip Rap)	Annually	• Check for damage/deterioration • Check for displaced stones • Check for woody vegetation	Repair immediately Replace immediately Remove annually
Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 1 ft. sediment depth Remove all floatables Remove immediately
Wet Pond	Biannually Annually (at least)	• Check for sediment accumulation • Check for woody vegetation growth • Check for debris	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly
Grass Lined Conveyance 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
Porous Pavement (PP) • Sanding • Salt Applications • Accumulated Salt • Sediment/Organic debris • Adj. Vegetated Areas • Underdrain Outlet • Trash/Debris • Pavement Condition • Stockpiles • Standing Water in Pavement • Winter Maintenance	Prohibit use As Req. Winter/Spring 1-2 x's / yr 1-2 x's / yr Annually Periodically Annually Regularly 1-2 x's / yr Rain Event	Prohibit use to prevent clogging issues RECORD APPLICATION RATES Inspect surface for salt accumulation Inspect surface for sediment/organics Inspect for erosion and prevent run-on to PP Inspect outlet for blockages Inspect for trash/debris Inspect for deteriorated pavement sections Inspect for stockpiled materials Inspect for standing water within 30 min of rain event See attached Winter Maintenance Fact Sheet	Vacuum to prevent issues Minimize as Req. Vacuum immediately Vacuum immediately Stabilize areas Remove blockage Remove when noticed Repair as identified Remove stockpiles Power wash or compressed air blower at 30 degrees or less
Pavement • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As Req. 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 Req. 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. The attached "Checklist for Inspection of Permeable Pavement" shall be used for logging the inspections of the porous pavement section.

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

CHECKLIST FOR INSPECTION OF PERMEABLE PAVEMENT

Location:
Inspector:
Date:
Time:
Site Conditions:
Date Since Last Rain Event:

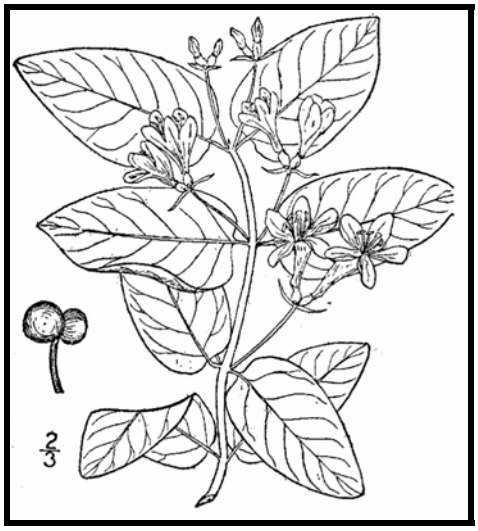
Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
1. Salt / Deicing (Winter/Spring)		
Use salt only for ice management	**S U**	
Accumulated salt removed in spring	**S U**	
2. Debris Cleanup (1-2 times per year minimum, Spring/Fall)		
Remove sediment and organic debris using vacuum street sweeper	**S U**	
Clean catch basins (if available)	**S U**	
3. Controlling Run-On		
Adjacent vegetated areas show no signs of erosion and run-on to permeable pavement	**S U**	
4. Outlet / Catch Basin Inspection (if available) (1-2 times per year, after large storm events)		
No evidence of blockage	**S U**	
Good condition, no need for cleaning/repair	**S U**	
5. Poorly Drained Pavement		
Recently cleaned and vacuumed	**S U**	
6. Pavement Condition		
No evidence of deterioration	**S U**	
7. Signage / Stockpiling (As Needed)		
No evidence of damage	**S U**	
Proper signage posted indicating usage for traffic load	**S U**	
No stockpiling of materials and other unauthorized uses	**S U**	

Corrective Action Needed	Due Date
1.	
2.	
3.	
Inspector's Signature	Date

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

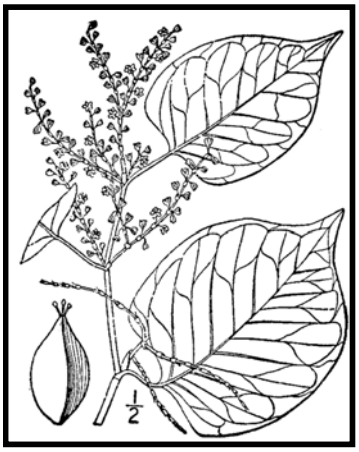
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

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Winter Maintenance Guidelines for Porous Pavements







Maintenance Guidelines

- Road surfaces, porous and non-porous, are commonly not treated and plowed until 2 or more inches of snow accumulation.
- Plow after every storm. If possible plow with a slightly raised blade, while not necessary, this will help prevent pavement scarring.
- Up to ~75% salt reduction for porous asphalt can be achieved. Salt reduction amounts are site specific and are affected by degree of shading.

  USE SALT REDUCTION NUMBERS WITH CAUTION!!!
- Pervious concrete salt reduction will vary and is heavily dependent upon shading. For shaded areas, pervious concrete may not achieve salt reduction.
- Apply anti-icing treatments prior to storms. Anti-icing has the potential to provide the benefit of increased traffic safety at the lowest cost and with less environmental impact.
- Deicing is NOT required for black ice development. Meltwater readily drains through porous surfaces thereby preventing black ice.
- Apply deicing treatments during, and after storms as necessary to control compact snow and ice not removed by plowing.
- Sand application should be limited since its use will increase the need for vacuuming
- Vacuum porous areas a minimum of 2-4 times per year, especially after winter and fall seasons when debris accumulation and deposition is greatest.
- If ponding water is observed during precipitation cleaning is recommended.

Winter Maintenance Challenges

- Mixed precipitation and compact snow or ice is problematic for all paved surfaces, but is particularly problematic for porous surfaces. This is corrected by application of excess deicing chemicals.
- De-icing chemicals work by lowering the freezing point of water. Generally, the longer a de-icing chemical has to react, the greater the amount of melting. Meltwater readily drains through porous surfaces thereby reducing chemical contact time. This is corrected by excess salt application.
- Excess salt application in these instances is offset by the overall reduced salt during routine winter maintenance and salt reduction.

Additional Resources

- The UNH Stormwater Center: http://www.unh.edu/erg/cstev/
- Pennsylvania Asphalt Pavement Association (PAPA) Porous Asphalt Pavements Guide: http://www.pahotmix.org/PDF/porous1.pdf
- National Asphalt Pavement Association (NAPA) Porous Asphalt Pavements for Stormwater Management Revised 11/2008, Information Series 131

Landscape Best Management Practices
Operations and Maintenance Plan

Weave Filtration, LLC

Quality Way
Dover, New Hampshire 03820

Prepared for
Joseph Griffin
Civilworks New England/Haight Engineering, PLLC
181 Watson Road
PO Box 1166
Dover, New Hampshire 03821

Prepared by
Ironwood Design Group, LLC
PO Box 873
Exeter, New Hampshire 03833



Ironwood
Landscape Architecture • Planning

Landscape Maintenance

Introduction

The landscape enhancements proposed for the Weave Filtration, LLC building 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 basin 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		

CIVILWORKS NEW ENGLAND

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

September 2, 2022

City of Dover
288 Central Ave
Dover, NH 03820

Attn: Donna Benton, Director of Planning

Re: Response to TRC Comments

Ref: Weave Filtration
Quality Way (Accessor's Map D, Lot 11-7)
Dover Planning file: P22-47

Civilworks New England Reference No. 21094

Dear Ms. Benton:

On behalf of the applicant Weave Filtration LLC, we are pleased to resubmit the revised Site Plan based on the Technical Review Committee Minutes dated August 18, 2022. The response to each of the comments are as follows (**Responses in Bold)**:

Planning:

1. *W / S investment fees*
   Owner acknowledges W / S fees are required.
2. *Impact fees*
   Owner acknowledges impact fees are required.
3. *§153-14.D.(3)(a)[2] & [3] – EV readiness requirement (waiver lists station where only conduit is required)*
   The project proposes 2 – 2" Schedule 40 PVC conduits in support of EV readiness, the EV readiness waiver has been withdrawn.
4. *Revised Streetscape and Architectural plans will need to be approved by DBIDA*
   The Streetscape and Architectural plans were submitted to DBIDA for the September 6th meeting.
5. *How does the design of the development meet the intent of §153-15 Design Standards for the IT district? Provide narrative.*
   A narrative has been provided.
6. *Reminder: Any deed related items will be reviewed by the City Attorney*
   Owner acknowledges that deed related items will be reviewed by the City Attorney.
7. *Interconnection between parcels - §153-14.J.(2) requires easements for future connection unless PB finds per J.(3)*
   Interconnection between the site and abutting parcels is not feasible due to site characteristics including wetlands and slopes. The industrial nature of this site will not result in a large customer base that visits the facility nor is it anticipated that the industrial products manufactured on this site would attract employees from abutting parcels.

8. *Revise plan set to include the following:*
    a. *Consecutively number plan sheets throughout, including architectural and landscape plans*
    The plan sheets are consecutively numbered as identified on the Cover Sheet. The Architectural and Landscape plan sheet numbers are identified on the Cover sheet.
    b. *Owner's signature on final submission*
    The Owner's signature will be included on the final plan.
    c. *Indicate 10% open land area per Industrial TDR and conservation area protected in future by conservation easement*
    This industrial subdivision was created by the City of Dover over 20 years ago. Conservation areas were identified into the subdivision as sending areas.
    d. *Indicate where 33% of site shall be open space (footnote 4 on IT Table)*
    General Note 4 on Sheet 4 – "Note Sheet" has been updated to include "Minimum Open Space" which indicates that 33 percent is required and that the project provided 55.3 percent.
    e. *Add two trees to rear back corner of site (by curve of driveway)*
    The two trees have been added to the Landscape Plan.
    f. *Intent to cut needed?*
    Not applicable for site development.

Engineering:

1. *Drainage Analysis: Identify the factor of safety applied to the porous asphalt infiltration rate.*
The factor of safety is discussed in section 2.5.2 of the drainage report with supporting documentation located in Appendix B-2. The factor of safety applied to the field determined infiltration rate is 4.5.
2. *Sheet 8: Recommend adding stand-by power pump system.*
The project proponent has determined that an emergency generator is not warranted for their operations.
3. *Stormwater Management System Inspection & Maintenance Plan: Per NHDES Stormwater Manual Volume 2 Section 4-3.4e, no winter sanding of permeable pavements is permitted.*
Sanding has been identified as prohibited on the proposed sign and in the I & M Plan.
4. *Sheet 17: Per DUC Rules and Regulations, Applicant to submit Emergency contacts for pump system after construction on an annual basis.*
A note has been added to the detail sheet.

Police:

1. *No new comments all previous were addressed*

Fire/Inspection Services: (Minutes indicate "None" outstanding comments are presented below.)

1. *Correlate FDC between sheet 8 utility plan and A1.1.*
Sheet 8 has been updated to provide access to the FDC on the access road side of the building and Sheet 6 identifies that FDC signage is required. Sheet A1.1 has been updated to correspond with the updated location identified on Sheet 8.
2. *Sheet A3.1: Provide applicable handrails and guardrails at all stairways and correlate to elevation drawings.*

The sheet has been updated to include both hand and guard rails.

3. *Sheet R1: show proposed HVAC equipment at front HVAC 8'x8' concrete pad.*
   All HVAC equipment visible in the streetscape view has been included in the updated rendering.

Business Development:

1. *Is signage proposed off Quality Way? A co-located directional sign for all Quality Way businesses at Sixth St. may improve business visibility. To be discussed with DBIDA.*
   The Applicant will work with Economic Development to locate a sign as applicable.

Planning Board:

1. *Would like to see the stones from the historic stone wall repurposed onsite and not used as fill.*
   A note has been added to the Demolition Notes on Sheet 4 and to the Demolition Plan indicating that the stones shall be stored and repurposed on site and that they shall not be used as fill.

Next Steps: Appear before the DBIDA for architectural review and revised plan set and application materials to reflect the TRC and DBIDA comments and submit for Planning Board review.

Sincerely,

CIVILWORKS NEW ENGLAND



Stephen J Haight PE

Asciola, Michael

From: Mavrogeorge, Kenneth
Sent: Friday, September 23, 2022 9:29 AM
To: Benton, Donna; Asciola, Michael
Subject: Weave Filtration Review for 2022.09.27 PB

Mike,

I have reviewed the TRC comments and the PB submission and it appears that the applicant has addressed Engineering's comments.

I have reviewed the grading and resource area plan with regards to the connection to adjacent properties and the regulations regarding . I agree with the applicant that a connection to the to the north would require significant impacts to wetland buffers and wetlands and therefore would not be recommended.

A connection to the property to the south appears to be possible but would require additional grading and potentially a retaining structure depending on how the adjacent site is developed. Given that the adjacent lot is vacant, the applicant is not required to build the connection but simply provide an easement for a future access. Therefore, I would recommend that a note be provided on the plans stating that an easement can be provided for a possible future connection to the adjacent lot if deemed necessary for emergency vehicle access to the adjacent lot. The location of the easement would need to be coordinated with the designer and applicant of the adjacent lot when that comes to TRC.

If you have any questions, please let me know.

Thanks,

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 | c: 603.534.8865
f: 603.516.6463

Dover: First in New Hampshire, First with you!
http://www.dover.nh.gov

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CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – P22-47

Application Type:	Site Plan Review
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Date:	August 18, 2022

INTENT: The applicant proposes a 23,125± s.f. light manufacturing facility / office building with associated parking. Affiliated CUP for wetland buffer impacts also to PB.

UNITS PROPOSED: N/A

AGENDA ITEM #: 1

ACREAGE: 3.49± acres

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Manufacturing with Office Use

SURROUNDING LAND USE: Vacant, Office/Industrial uses

ZBA ACTION: None

PERMITS REQUIRED: AoT, CUP for wetland buffer, Industrial TDR

WAIVERS REQUESTED:
§153-14.H.(1) - Two (2) driveways;
§153-15. C. (2) Parking location (IT);
§153-14. D.(3)(a)[2] & [3] - EV readiness;
* IT Zone Parking Setback – Ind. TDR

ATTENDANCE:
Members:
Donna Benton, Planning
Natasha Kypfer, Zoning
Amy Reid, Business Development
Jim Maxfield, Fire/Inspection Services
Ken Mavrogeorge, Engineering
Marn Speidel, Police
Frank Torr, Planning Board

Others:
Michael Asciola, Planning
Jase Gregoire, Civilworks

Approval of the August 11, 2022 Minutes:
F. Torr moved to approve the August 11, 2022 minutes. Seconded by K. Mavrogeorge. Vote: U/A

PLAN REVIEW:
Planning:
- W/S investment fees
- Impact fees
- §153-14. D.(3)(a)[2] & [3] - EV readiness requirement (waiver lists station where only conduit is required)
- Revised Streetscape and Architectural plans and will need to be approved by DBIDA
- How does the design of the development meet the intent of §153-15 Design Standards for the IT District? Provide narrative.
- Reminder: Any deed related items will be reviewed by the City Attorney
- Interconnection between parcels - §153-14.J.(2) requires easements for future connection unless PB finds per J.(3)
- Revise Plan Set to include the following:
  - Consecutively number plan sheets throughout, including architectural and landscape plans
  - Owner's signature on final submission
  - Indicate 10% open land area per Industrial TDR and conservation area protected in future by conservation easement
  - Indicate where 33% of site shall be open space (footnote 4 on IT table)
  - Add two trees to rear back corner of site (by curve of driveway) to help mitigate amount of tree clearing on property
  - Intent to cut needed?

Engineering:
- Drainage Analysis: Identify the factor of safety applied to the porous asphalt infiltration rate.
- Sheet 8: Recommend adding stand-by power pump system.
- Stormwater Management System Inspection & Maintenance Plan: Per NHDES Stormwater Manual Volume 2 Section 4-3.4e, no winter sanding of permeable pavements is permitted.
- Sheet 17: Per DUC Rules and Regulations, Applicant to submit Emergency contacts for pump system after construction on an annual basis.

Police:
- No new comments all previous were addressed

Fire/Inspection Services: None

Business Development:

- Is signage proposed off Quality Way? A co-located directional sign for all Quality Way businesses at Sixth St. may improve business visibility. To be discussed with DBIDA.

Planning Board:

- Would like to see the stones from the historic stone wall repurposed onsite and not used as fill.

Next Steps: Appear before the DBIDA for architectural review and revised plan set and application materials to reflect the TRC and DBIDA comments and submit for Planning Board review.

TRC Paused at: 10:44 AM

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – P22-47

Application Type:	Site Plan Review
Applicant(s):	Weave Filtration, LLC
Owner(s):	DBIDA
Location:	Quality Way (Assessor's Map D, Lot 11-7)
Date:	July 7, 2022

INTENT: The applicant proposes a 23,125± s.f. light manufacturing facility / office building with associated parking. Affiliated CUP for wetland buffer impacts also to PB.

UNITS PROPOSED: N/A

AGENDA ITEM #: 2

ACREAGE: 3.49± acres

ZONING DISTRICT: IT, Wetlands Protection District

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Office Building

SURROUNDING LAND USE: Vacant, Office Buildings

ZBA ACTION: None

PERMITS REQUIRED: AoT, CUP for wetland buffer, Industrial TDR

WAIVERS REQUESTED: Parking location (IT), Two (2) driveways

ATTENDANCE:
Members:
Donna Benton, Planning
Natasha Kypfer, Zoning
Reid Amy, Business Development
Tom Abbott, Fire/Inspection Services
Ken Mavrogeorge, Engineering

Others:
Michael Asciola, Planning
David Choate
Joe Griffin, Civilworks
Jase Greoine, Civilworks

PLAN REVIEW:
Planning:

- Pay application fees
- W/S investment fees
- Impact fees
- Waiver needed for two (2) driveways
- Snow storage locations? (Site Note 5 on Sheet 4 states to be shown on plan, but not seen)
- Provide parking location waiver
- Provide porous pavement maintenance plan
- Traffic study missing in submittal
- Streetscape must match landscape plan or add note about trees not shown
- Any deed related items would be reviewed by the City Attorney
- Revise Plan Set to include the following:
  - Add Planning Board file #P22-47
  - Consecutively number plan sheets throughout, including: floor plans, streetscape, & landscaping
  - Zoning: Add provided column to note
  - Sheet 4 contacts: correct surname of City Engineer
  - Owner's signature on final submission
  - Update Note 12 on Sheet 4 to include dates (Common Note 34)
  - Update Note 13 on Sheet 4 to reference TDR File #.
  - Indicate sidewalk material
  - EV readiness
  - Indicate location of bike rack
  - Indicate 10% open land area per Industrial TDR and conservation area protected in future by conservation easement

Engineering:

- General: City Engineering Department will provide updated copies of the City of Dover Standard Details
- General: Label existing SMH in accordance with City of Dover numbering; SMH #3=4351 and SMH #4 = 4352.
- General: Remove details not applicable to project.
- General: Landscape Maintenance Document mentions 7 West Commercial Development. Check all documents for errant notes and applicability.
- Sheet 4: Please correct the spelling of the City Engineer's name and email address. Both are incorrect.
- Sheet 5: Proposed tree clearing is extremely close to property line. Review grading to see if some buffer to abutting property can be provided.
- Sheet 6: Show granite curb within limits of right-of-way.

- Sheet 6: Provide a sign identifying porous asphalt is present and that there are restrictions on deicing materials on porous surfaces as noted in the inspection and maintenance plan that is provided.
- General: Provide a commitment to maintain stormwater and specifically the porous pavement that can be recorded at the registry of deeds.
- Sheet 6: Per City of Dover Code Section 153-14.H(1), there shall be 1 driveway per 125' of road frontage and a minimum of 155' spacing between driveways. There does not appear to be 250' of road frontage and the two driveways are closer than 155'. A waiver from this requirement would need to be requested.
- Sheet 6: Recommend adding at least one light pole to loading area.
- Sheet 6: Provide details for the tip-down and ramp in front of the accessible parking spaces.
- Sheet 13: The Sidewalk Apron detail is not applicable. Remove or revise for the tip down and ramp section in front of the accessible parking spaces.
- Sheet 6: Show the locations of the proposed signage.
- Sheet 6: Identify limits of heavy duty pavement and standard duty pavement with hatching.
- Sheet 6: Recommend adding signage to restrict access to rear loading area to delivery vehicles only.
- Sheet 7: Label parts of Wet Pond on Plan view (i.e., permanent pool, sediment forebay).
- Sheet 7: Provide additional spot grades to ensure stormwater makes it to the sediment forebay.
- Sheet 7: Show roof drain along office area in accordance with the drainage analysis.
- Sheet 7: Add catch basins in the porous pavement area at the low points to allow water to drain in the event the porous pavement becomes clogged, or an intense rainfall occurs
- Sheet 7: Note for pipe connecting PDMHA to PFES1 is cut-off.
- Sheet 7: Proposed grading appears close to wetland but no flags are provided. Applicant to provide updated wetland flagging and clarify if a NHDES Standard Dredge and Fill Permit is required.
- Sheet 8: Clarify how the water main size will be increased from the existing 4-inch to 6-inch.
- Sheet 8: Call out valves on water lines
- Sheet 8: Cleanouts outside of building are not permitted. Provide SMH where proposed cleanout is shown and where multiple services join together. Wastewater connection permit will be required.
- Sheet 8: Proposed sewer from office area is shown as having a curve which is not acceptable.
- Sheet 8: Relocate proposed (sewer) curb stop check valve closer/adjacent to pump station.
- Sheet 8: Coordination is required with WWTP Industrial Pretreat Coordinator if force main is intended for industrial discharge.
- Sheet 8: Confirm if stand-by power will be provided to building/pump system.
- Sheet 10: Detail sheets include information on rare turtles. Please clarify if rare species have been identified on site.
- Sheet 13: Please show locations of bollards and signage on plans.
- Sheet 13: Is a bike rack proposed? If so, please show on the site plan or remove detail.
- Stormwater Management System Inspection & Maintenance Plan: Per NHDES Stormwater Manual Volume 2 Section 4-3.4e, no winter sanding of permeable pavements is permitted.
- Sheet 14: Provide rip rap apron sizing for PFES1 and 2.
- Sheet 17: Provide pump calculations, flow (gal/min) and pump curve for pump system.
- Sheet 17: Revise Typical Lateral Installation detail for actual proposed conditions (SMH instead of 10" clay pipe).
- Sheet 17: Emergency contacts shall be provided for pump system after construction is complete.
- Sheet 20: Provide delivery truck turning movement for the situation where a truck is parked at each bay and a truck enters and tries to exit the facility.
- Drainage Analysis: Identify the factor of safety applied to the porous asphalt infiltration rate.

Police:

- No signage is shown on the site plan

Fire/Inspection Services:

- Provide turnaround for front access road when length is 150' or greater
- Correlate FDC between sheet 8 utility plan and A1.1
- Confirm there is no standby generator for the proposed structure (proposed sewer ejector station)
- Indicate the type of manufacturing in section 1 and 2 on A1.1. Will manufactured products be warehoused on site.
- Provide a brief description of the raw materials for the manufacturing process.
- Sheet A3.1 – provide applicable handrails and guardrails at all stairways and correlate to elevation drawings

Sheet R1 – show proposed HVAC equipment at front HVAC 8'x8' concrete pad.

Business Development:
Is signage proposed off Quality Way? A co-located directional sign for all Quality Way businesses at Sixth St. may improve business visibility.

Planning Board: None

Next Steps: Pay application fees. Resubmit revised plans and application materials for second TRC, followed by Conservation Commission and finally Planning Board

TRC Paused at: 11:05 AM

DRAINAGE ANALYSIS

WEAVE FILTRATION
TAX MAP D, LOT 11-7

Quality Way
Dover, New Hampshire
Strafford County

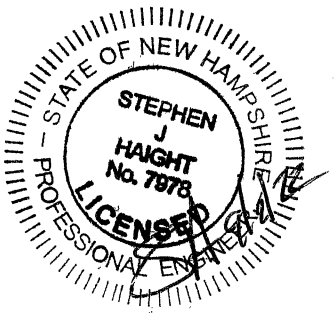
June 2022
Rev: July 2022
Rev: September 2022

Prepared For:

WEAVE FILTRATION
100 Tri City Road, Unit 117
Somersworth, NH 03878

Prepared By:

Civilworks NE
PO Box 1166
181 Watson Road
Dover, NH 03820



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- A-2 Developed Watersheds
  - Drainage Diagram / Area and Soil Listings
  - Node Listing – 2-yr
  - Node Listing – 10-yr
  - 10-yr Storm Summary Hydrographs
  - Node Listing – 25-yr
  - Node Listing – 50-yr

4.0 APPENDIX B – DESIGN
- B-1 Stormwater Best Management Practices
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- B-3 Outlet Protection

5.0 APPENDIX C – WATERSHED PLANS
- C-1 Pre-Development Conditions
- C-2 Post-Development Conditions

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel located on Quality Way in Dover, NH. The 3.49± acre lot is identified as Tax Map D, Lot 11-7. The site is undeveloped, and the groundcover primarily consists of wooded vegetation with grassed areas along the edge of the Quality Way cul-de-sac. The parcel is bifurcated by a knoll that runs south, from Quality Way, and continues down the approximate middle of the site. The parcel slopes mildly to the south along the knoll and slopes more steeply, away from the knoll, to the east and west. The site drains overland with discharge occurring to the east, west, and south. All drainage from the site discharges to a large inter-connected wetlands that eventually drain to Reyners Brook, which is located approximately 750' to the west of the site. The site is bound by Quality Way to the northeast and commercial/industrial lots to the south, east, and west.

The project proposes 122,500± sf of disturbance including the construction of a 23,125 sf commercial building, corresponding site improvements including site grading, paved parking and loading areas, as well as stormwater quality and detention drainage improvements.

To effectively analyze the pre development conditions, the 3.7± acre watershed has been subdivided into four (4) watersheds and incorporates offsite areas that drain directly onsite and that will be incorporated into the proposed onsite drainage improvements. These points of discharge are identified as Watershed A, B, C, & D.

The post development analysis has been divided into ten (10) sub-catchments that discharge to the same points of analysis developed for the pre-development model. Sub-catchments model the areas of the site that are directed through proposed drainage structures, conveyances, and water quality practices. Stormwater conveyance consists of overland flow, a swale, a pipe, a closed drainage system, and roof drains. The project proposes a wet extended detention pond and porous pavement to meet water quality criteria and stone outlet aprons for channel protection. The analysis shows that with the mitigation measures proposed the development of this site will have negligible impact on the watersheds.

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 watersheds and sub-catchment areas were delineated using wetland data provided by Damon E. Burt, Wetland Scientist (CWS) #163 on June 6, 2022, and 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 which references the Strafford County, New Hampshire Soil Survey Area, Version 22, August 31, 2021, and a site specific soils map prepared by John P. Hayes III (CSS) #087 on May 17, 2022. The site specific soil survey also provides a high intensity soil survey conversion as well. The soil drainage classifications used for this analysis are Class A, B, C, and D.

Hydrologic Drainage Class A:

SSSS	Slopes	Map Name
111	A, B, C, D	Gloucester very stony

Hydrologic Drainage Class B:

SSSS	Slopes	Map Name
63	B, C	Charlton Very Stony

Hydrologic Drainage Class C:

SSSS	Slopes	Map Name
32	B	Buxton
338	A, B, C	Elmwood very stony
500	B	Udorthents loamy

Hydrologic Drainage Class D:

SSSS	Slopes	Map Name
233	A, B	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", 5.42", 6.85", and 8.18" rainfall depths respectively. The rain fall data has been peaked by 15% in accordance with NH DES Alteration of Terrain requirements as the site is located within the Coastal Region.

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 CONDTIONS

For purposes of this analysis the subject parcel was analyzed with four points of discharge.

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)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.017	0.1	0.3	0.4	0.5
B	0.058	0.4	0.8	1.2	1.5
C	0.018	0.1	0.3	0.4	0.6
D	0.127	0.8	1.5	2.1	2.7

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed utilizing the same summing points as the pre development analysis.

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)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.017	0.1	0.3	0.4	0.5
B	0.484	0.4	0.7	1.1	1.4
C	0.004	0.0	0.1	0.2	0.2
D	0.049	0.4	0.7	0.9	1.2

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)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.017/**0.017**	0.1/**0.1**	0.3/**0.3**	0.4/**0.4**	0.5/**0.5**
B	0.058/**0.484**	0.4/**0.4**	0.8/**0.7**	1.2/**1.1**	1.5/**1.4**
C	0.018/**0.004**	0.1/**0.0**	0.3/**0.1**	0.4/**0.2**	0.6/**0.2**
D	0.127/**0.049**	0.8/**0.4**	1.5/**0.7**	2.1/**0.9**	2.7/**1.2**

2.5 STORMWATER DESIGN

The project incorporates best management practices to mitigate runoff as well as treat and infiltrate stormwater.

2.5.1 Stormwater Best Management Practices

The project incorporates an extended detention wet pond and porous pavement to mitigate flow and water quality from the proposed development. Pre-treatment for the wet pond includes a grassed swale and sediment forebays.

2.5.2 Groundwater Recharge

The project utilizes porous pavement to treat and infiltrate stormwater from the parking lot. Infiltration rates were determined in accordance with NH DES Env-Wq 1504.14. A test pit (TPA) was provided to determine depth to seasonal high water table. Two borehole infiltration tests (BH1 and BH2) were performed to field determine infiltration at the proposed practice. Infiltration at the 2 test locations were 22.5 in/hr and 34.29 in/hr respectively. The design infiltration rate used in the model, after applying a > 4 factor of safety, is 5 in/hr. The project provides 1,742 cf of infiltration during a 2-year storm event.

2.5.3 Pollutant Removal

The site stormwater design captures 100% of the proposed onsite impervious area (68,300± sf) as well as 3,000± sf of stormwater runoff from Quality Way and directs it to best management practices that provide pollutant removal. The project incorporates the following practices and associated pollutant removal efficacies as identified in the New Hampshire Stormwater Management Manual Volume 1, Appendix E:

	TSS	TN	TP
Wet Extended Detention Pond:	80%	55%	68%
Permeable Pavement (>75' from water):	90%	60%	65%

The pollutant removal meets or exceeds The City of Dover's, Site Review Regulations.

2.5.4 Outlet Protection

BMP's, conveyance structures, and outlet protection have been sized to convey the 50-year, 24 hour storm event. All proposed rip-rap applications shall consist of min. d50 = 6" stone with a stone layer thickness of 12" (min) on a filter fabric layer over a 6" thick (min) gravel base. See the plan set for rip-rap locations and the drainage details for additional information.

APPENDIX A

HYDROLOGIC CALCULATIONS

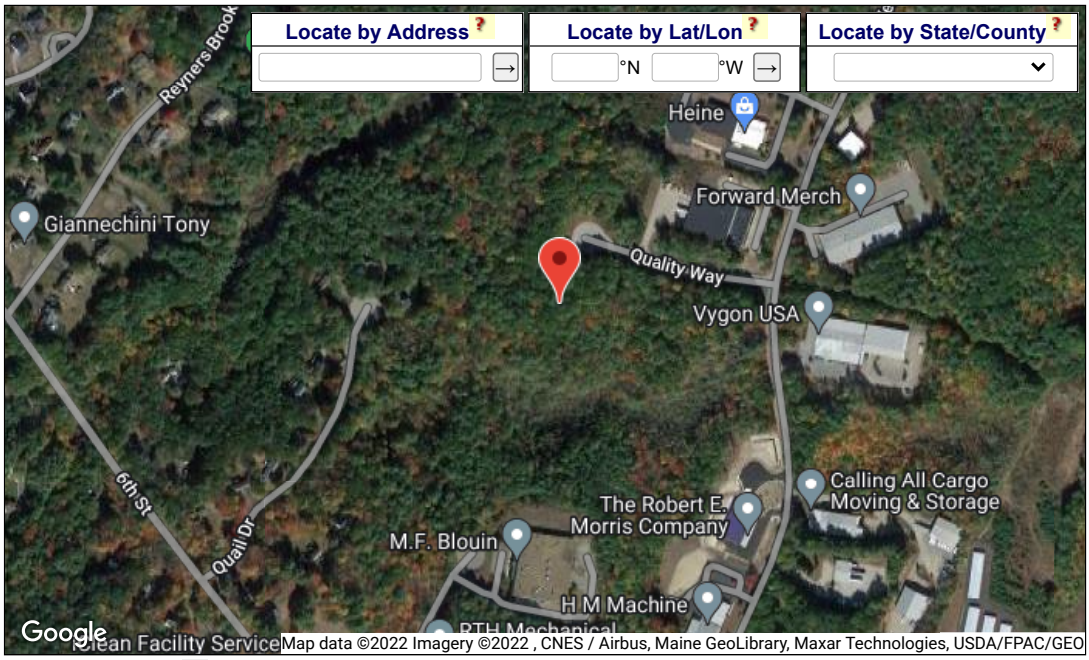
About this Project **Data & Products** **Daily Monitoring** **Documentation**

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 the map to place a marker, or enter address or latitude/longitude.*

Locate by Address | Locate by Lat/Lon (°N °W) | Locate by State/County



Select Options

Smoothing	Delivery
Yes	Popup

Submit

Version 1.12 Copyright 2010-2022.
This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) Cornell University

Natural Resources Conservation Service (NRCS) USDA 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.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.913 degrees West
Latitude	43.223 degrees North
Elevation	0 feet
Date/Time	Fri, 13 May 2022 11:51:56 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day		+15%
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	1.99	~~2.59~~	2.86	**1yr**	2.29	2.75	3.15	3.88	4.44	**1yr**	2.98
2yr	0.32	0.49	0.61	0.80	1.01	1.28	**2yr**	0.87	1.17	1.50	1.91	2.44	~~3.13~~	3.49	**2yr**	2.77	3.36	3.85	4.59	5.22	**2yr**	3.60
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.06	3.95	4.47	**5yr**	3.50	4.30	4.92	5.78	6.54	**5yr**	
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.22	1.69	2.18	2.82	3.64	~~4.71~~	5.39	**10yr**	4.17	5.18	5.93	6.90	7.75	**10yr**	5.42
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.69	3.52	4.58	~~5.96~~	6.91	**25yr**	5.27	6.64	7.58	8.71	9.72	**25yr**	6.85
50yr	0.52	0.83	1.06	1.48	2.00	2.66	**50yr**	1.73	2.45	3.18	4.17	5.46	~~7.11~~	8.34	**50yr**	6.29	8.02	9.14	10.40	11.54	**50yr**	8.18
100yr	0.58	0.94	1.21	1.71	2.32	3.12	**100yr**	2.01	2.88	3.74	4.94	6.49	~~8.49~~	10.07	**100yr**	7.52	9.68	11.02	12.42	13.71	**100yr**	9.76
200yr	0.64	1.05	1.36	1.96	2.71	3.67	**200yr**	2.33	3.39	4.42	5.87	7.74	10.15	12.16	**200yr**	8.98	11.70	13.29	14.83	16.29	**200yr**	
500yr	0.76	1.25	1.63	2.36	3.31	4.54	**500yr**	2.86	4.21	5.50	7.35	9.74	12.85	15.62	**500yr**	11.37	15.02	17.03	18.78	20.48	**500yr**	

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.92	1.25	1.54	2.05	2.46	**1yr**	1.82	2.36	2.94	3.42	4.10	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.15	1.36	1.82	2.35	3.05	3.39	**2yr**	2.70	3.26	3.74	4.46	5.08	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.14	2.77	3.69	4.11	**5yr**	3.26	3.95	4.59	5.39	6.09	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.81	2.44	3.12	4.24	4.77	**10yr**	3.75	4.58	5.30	6.21	6.97	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.84	3.64	5.08	5.76	**25yr**	4.50	5.54	6.47	7.50	8.35	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.19	**50yr**	1.52	2.14	2.36	3.20	4.08	5.83	6.64	**50yr**	5.16	6.39	7.51	8.63	9.55	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.51	**100yr**	1.74	2.45	2.65	3.58	4.55	6.69	7.65	**100yr**	5.92	7.35	8.72	9.94	10.90	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.87	**200yr**	1.98	2.81	2.96	4.02	5.07	7.66	8.80	**200yr**	6.78	8.46	10.12	11.45	12.46	**200yr**
500yr	0.70	1.04	1.33	1.94	2.75	3.46	**500yr**	2.38	3.39	3.44	4.67	5.87	9.13	10.59	**500yr**	8.08	10.18	12.32	13.81	14.81	**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	1.73	2.20	2.82	3.07	**1yr**	2.49	2.95	3.37	4.17	4.74	**1yr**
2yr	0.33	0.51	0.62	0.84	1.04	1.24	**2yr**	0.90	1.22	1.47	1.95	2.51	3.24	3.61	**2yr**	2.86	3.47	3.98	4.73	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	4.21	4.83	**5yr**	3.73	4.64	5.27	6.20	6.96	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.91	**10yr**	1.35	1.87	2.22	3.03	3.84	5.18	6.02	**10yr**	4.58	5.79	6.63	7.60	8.47	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.46	**25yr**	1.70	2.41	2.87	3.94	4.94	6.81	8.08	**25yr**	6.03	7.77	8.86	10.01	11.03	**25yr**
50yr	0.64	0.97	1.21	1.75	2.35	2.97	**50yr**	2.03	2.90	3.48	4.80	5.99	8.37	10.12	**50yr**	7.41	9.73	11.07	12.30	13.48	**50yr**
100yr	0.75	1.13	1.41	2.04	2.80	3.58	**100yr**	2.42	3.50	4.22	5.87	7.28	10.30	12.68	**100yr**	9.12	12.19	13.81	15.14	16.48	**100yr**
200yr	0.87	1.30	1.65	2.39	3.33	4.34	**200yr**	2.88	4.24	5.13	7.18	8.84	12.71	15.90	**200yr**	11.25	15.29	17.25	18.63	20.18	**200yr**
500yr	1.06	1.58	2.03	2.95	4.19	5.56	**500yr**	3.62	5.44	6.62	9.38	11.45	16.80	21.45	**500yr**	14.87	20.62	23.17	24.55	26.40	**500yr**

Powered by ACIS Northeast Regional Climate Center

A-1

EXISTING WATERSHEDS



A B C D

Subcat Reach Pond Link

Routing Diagram for 21094 - Pre
Prepared by Civilworks New England, Printed 8/24/2022
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.089	39	>75% Grass cover, Good, HSG A (A, D)
0.134	74	>75% Grass cover, Good, HSG C (A, D)
0.141	98	Paved roads w/curbs & sewers, HSG A (A, D)
1.327	30	Woods, Good, HSG A (A, B, C, D)
0.262	55	Woods, Good, HSG B (C, D)
1.699	70	Woods, Good, HSG C (A, B, C, D)
0.045	77	Woods, Good, HSG D (A, B)
3.696	**55**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.556	HSG A	A, B, C, D
0.262	HSG B	C, D
1.833	HSG C	A, B, C, D
0.045	HSG D	A, B
0.000	Other	
3.696		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.089	0.000	0.134	0.000	0.000	0.223	>75% Grass cover, Good	A, D
0.141	0.000	0.000	0.000	0.000	0.141	Paved roads w/curbs & sewers	A, D
1.327	0.262	1.699	0.045	0.000	3.332	Woods, Good	A, B, C, D
1.556	**0.262**	**1.833**	**0.045**	**0.000**	**3.696**	**TOTAL AREA**	

A – 1

NODE LISTING – 2-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=9,177 sf 4.28% Impervious Runoff Depth=1.00"
Flow Length=166' Tc=12.6 min CN=WQ Runoff=0.1 cfs 0.017 af

Subcatchment B: B Runoff Area=46,225 sf 0.00% Impervious Runoff Depth=0.65"
Flow Length=232' Tc=17.0 min CN=WQ Runoff=0.4 cfs 0.058 af

Subcatchment C: C Runoff Area=29,169 sf 0.00% Impervious Runoff Depth=0.31"
Flow Length=235' Tc=19.3 min CN=WQ Runoff=0.1 cfs 0.018 af

Subcatchment D: D Runoff Area=76,422 sf 7.50% Impervious Runoff Depth=0.87"
Flow Length=374' Tc=20.7 min CN=WQ Runoff=0.8 cfs 0.127 af

Total Runoff Area = 3.696 ac Runoff Volume = 0.220 af Average Runoff Depth = 0.71"
96.19% Pervious = 3.555 ac 3.81% Impervious = 0.141 ac

A – 1

NODE LISTING – 10-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=9,177 sf 4.28% Impervious Runoff Depth=2.07"
Flow Length=166' Tc=12.6 min CN=WQ Runoff=0.3 cfs 0.036 af

Subcatchment B: B Runoff Area=46,225 sf 0.00% Impervious Runoff Depth=1.43"
Flow Length=232' Tc=17.0 min CN=WQ Runoff=0.8 cfs 0.127 af

Subcatchment C: C Runoff Area=29,169 sf 0.00% Impervious Runoff Depth=0.83"
Flow Length=235' Tc=19.3 min CN=WQ Runoff=0.3 cfs 0.047 af

Subcatchment D: D Runoff Area=76,422 sf 7.50% Impervious Runoff Depth=1.75"
Flow Length=374' Tc=20.7 min CN=WQ Runoff=1.5 cfs 0.256 af

Total Runoff Area = 3.696 ac Runoff Volume = 0.466 af Average Runoff Depth = 1.51"
96.19% Pervious = 3.555 ac 3.81% Impervious = 0.141 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

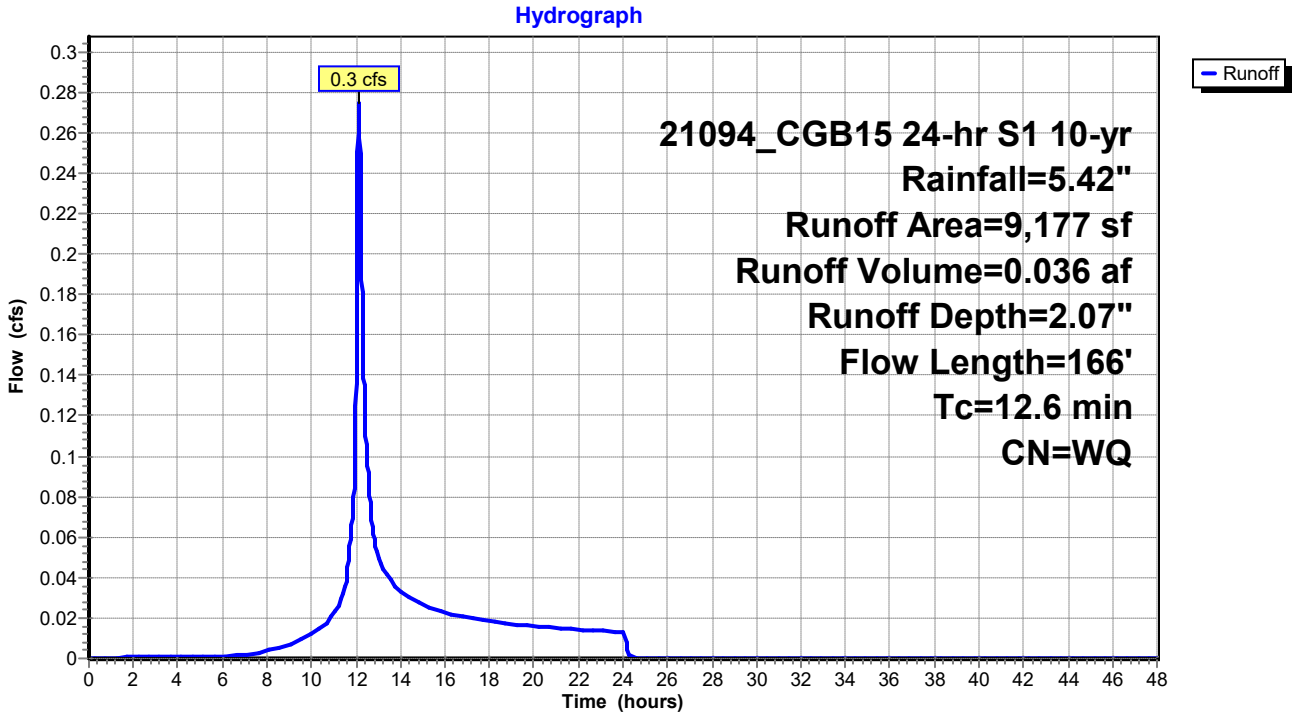
Runoff = 0.3 cfs @ 12.13 hrs, Volume= 0.036 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
1,747	30	Woods, Good, HSG A
206	39	>75% Grass cover, Good, HSG A
393	98	Paved roads w/curbs & sewers, HSG A
4,742	70	Woods, Good, HSG C
2,051	74	>75% Grass cover, Good, HSG C
38	77	Woods, Good, HSG D
9,177		Weighted Average
8,784		95.72% Pervious Area
393		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	58	0.0430	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
5.4	42	0.0950	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
0.8	66	0.0760	1.38		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.6	166	Total			

Subcatchment A: A



Summary for Subcatchment B: B

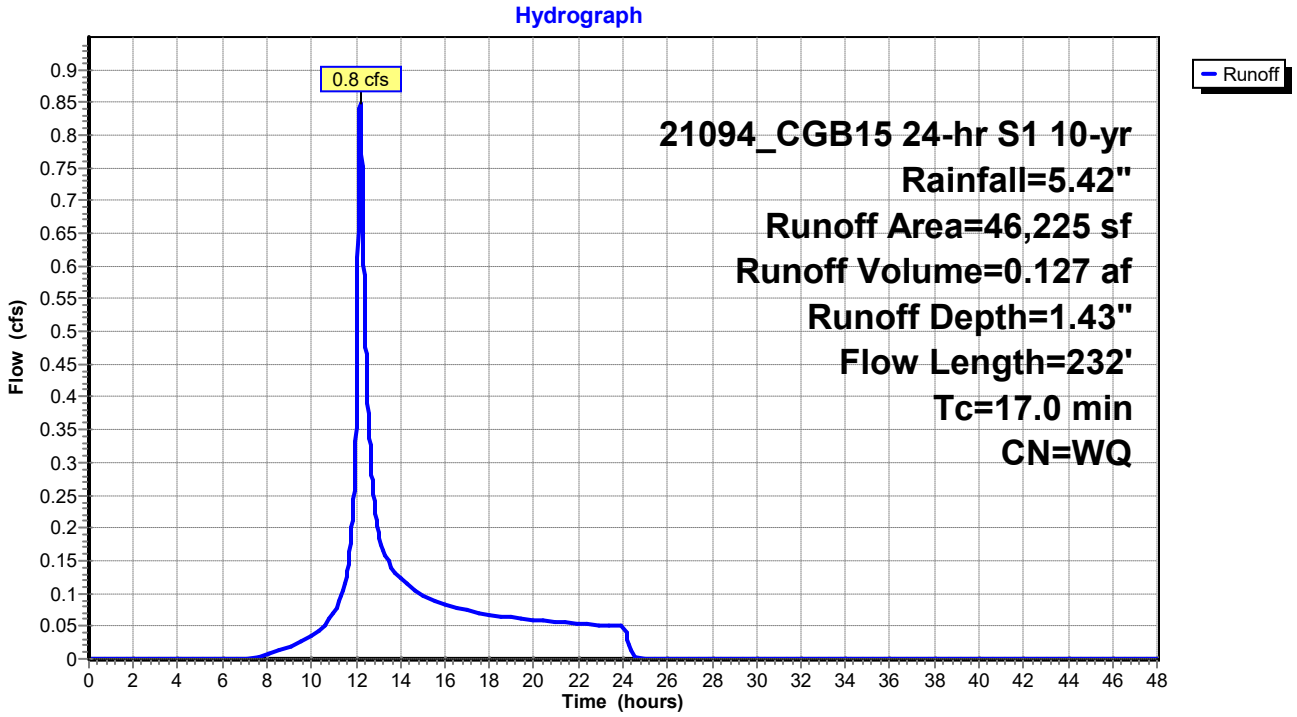
Runoff = 0.8 cfs @ 12.19 hrs, Volume= 0.127 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
18,753	30	Woods, Good, HSG A
25,547	70	Woods, Good, HSG C
1,925	77	Woods, Good, HSG D
46,225		Weighted Average
46,225		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0400	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.7	132	0.0640	1.26		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.0	232	Total			

Subcatchment B: B



Summary for Subcatchment C: C

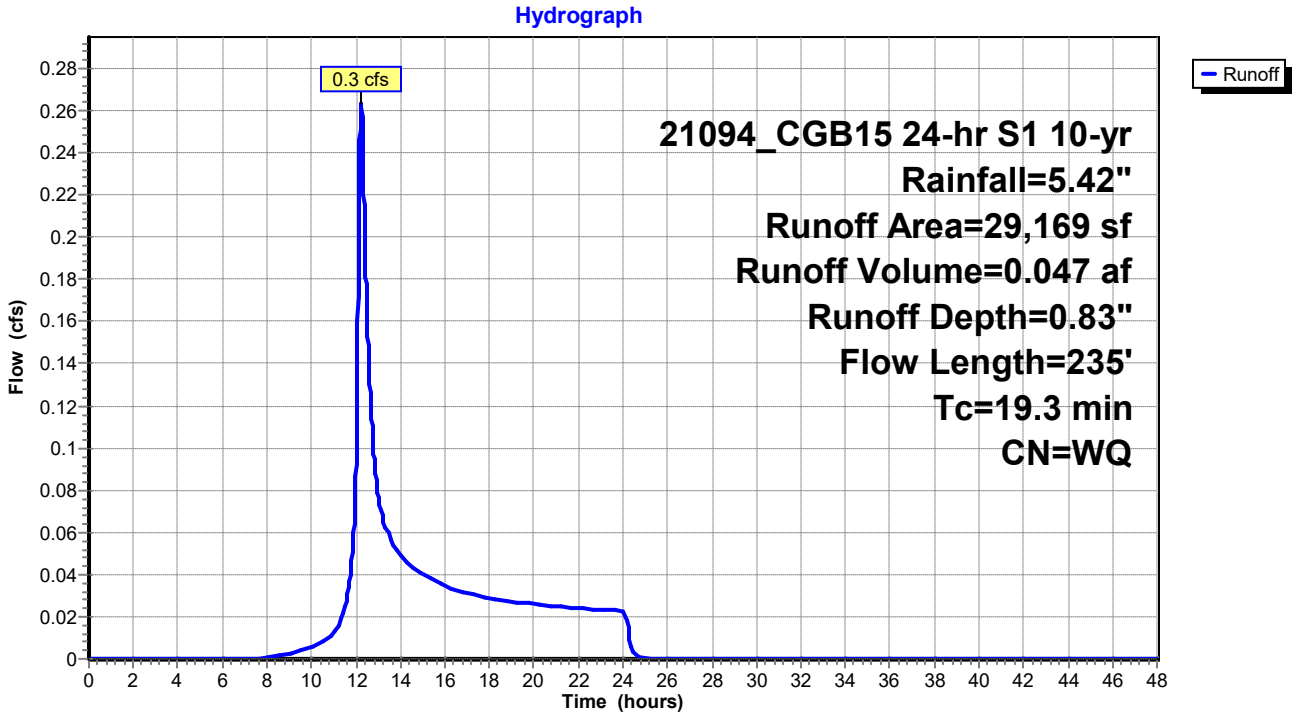
Runoff = 0.3 cfs @ 12.24 hrs, Volume= 0.047 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
13,699	30	Woods, Good, HSG A
10,696	55	Woods, Good, HSG B
4,774	70	Woods, Good, HSG C
29,169		Weighted Average
29,169		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0300	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
2.1	135	0.0460	1.07		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	235	Total			

Subcatchment C: C



Summary for Subcatchment D: D

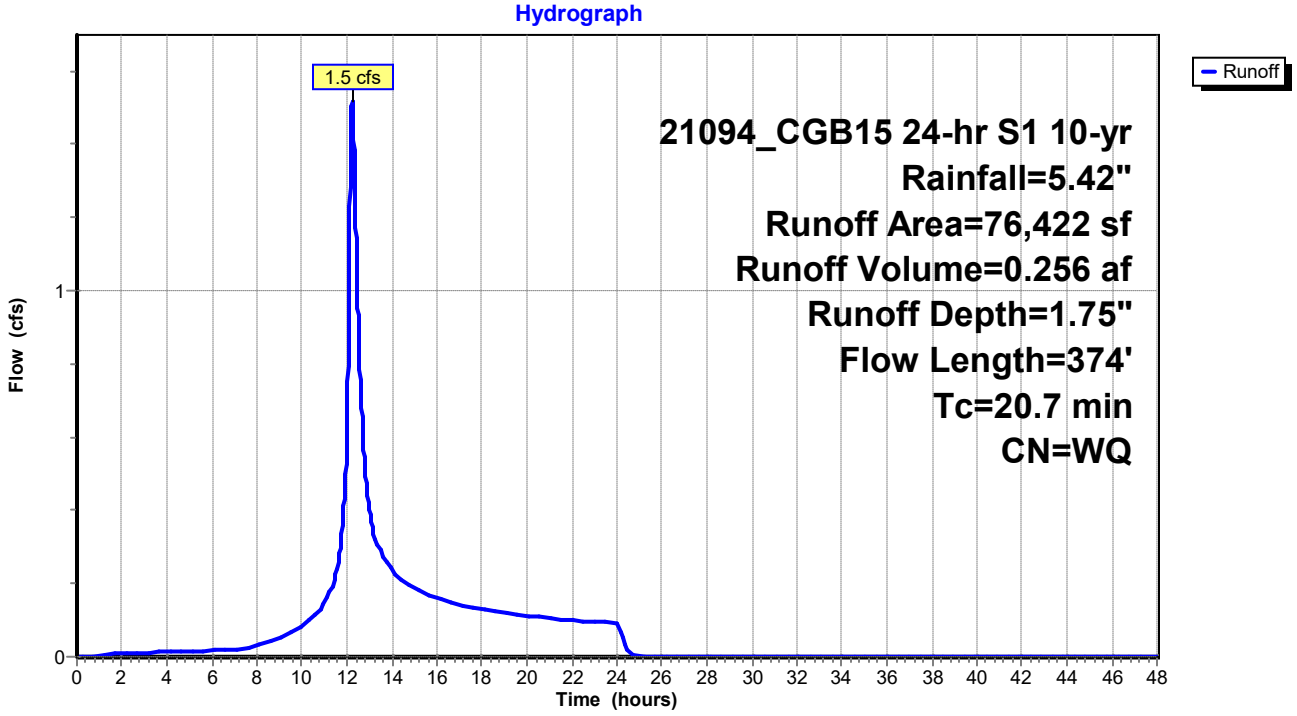
Runoff = 1.5 cfs @ 12.24 hrs, Volume= 0.256 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
23,586	30	Woods, Good, HSG A
3,676	39	>75% Grass cover, Good, HSG A
5,735	98	Paved roads w/curbs & sewers, HSG A
702	55	Woods, Good, HSG B
38,935	70	Woods, Good, HSG C
3,788	74	>75% Grass cover, Good, HSG C
76,422		Weighted Average
70,687		92.50% Pervious Area
5,735		7.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0400	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
5.4	274	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	374	Total			

Subcatchment D: D



A – 1

NODE LISTING – 25-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=9,177 sf 4.28% Impervious Runoff Depth=3.03"
Flow Length=166' Tc=12.6 min CN=WQ Runoff=0.4 cfs 0.053 af

Subcatchment B: B Runoff Area=46,225 sf 0.00% Impervious Runoff Depth=2.18"
Flow Length=232' Tc=17.0 min CN=WQ Runoff=1.2 cfs 0.193 af

Subcatchment C: C Runoff Area=29,169 sf 0.00% Impervious Runoff Depth=1.40"
Flow Length=235' Tc=19.3 min CN=WQ Runoff=0.4 cfs 0.078 af

Subcatchment D: D Runoff Area=76,422 sf 7.50% Impervious Runoff Depth=2.58"
Flow Length=374' Tc=20.7 min CN=WQ Runoff=2.1 cfs 0.377 af

Total Runoff Area = 3.696 ac Runoff Volume = 0.702 af Average Runoff Depth = 2.28"
96.19% Pervious = 3.555 ac 3.81% Impervious = 0.141 ac

A – 1

NODE LISTING – 50-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=9,177 sf 4.28% Impervious Runoff Depth=4.00"
Flow Length=166' Tc=12.6 min CN=WQ Runoff=0.5 cfs 0.070 af

Subcatchment B: B Runoff Area=46,225 sf 0.00% Impervious Runoff Depth=2.97"
Flow Length=232' Tc=17.0 min CN=WQ Runoff=1.5 cfs 0.262 af

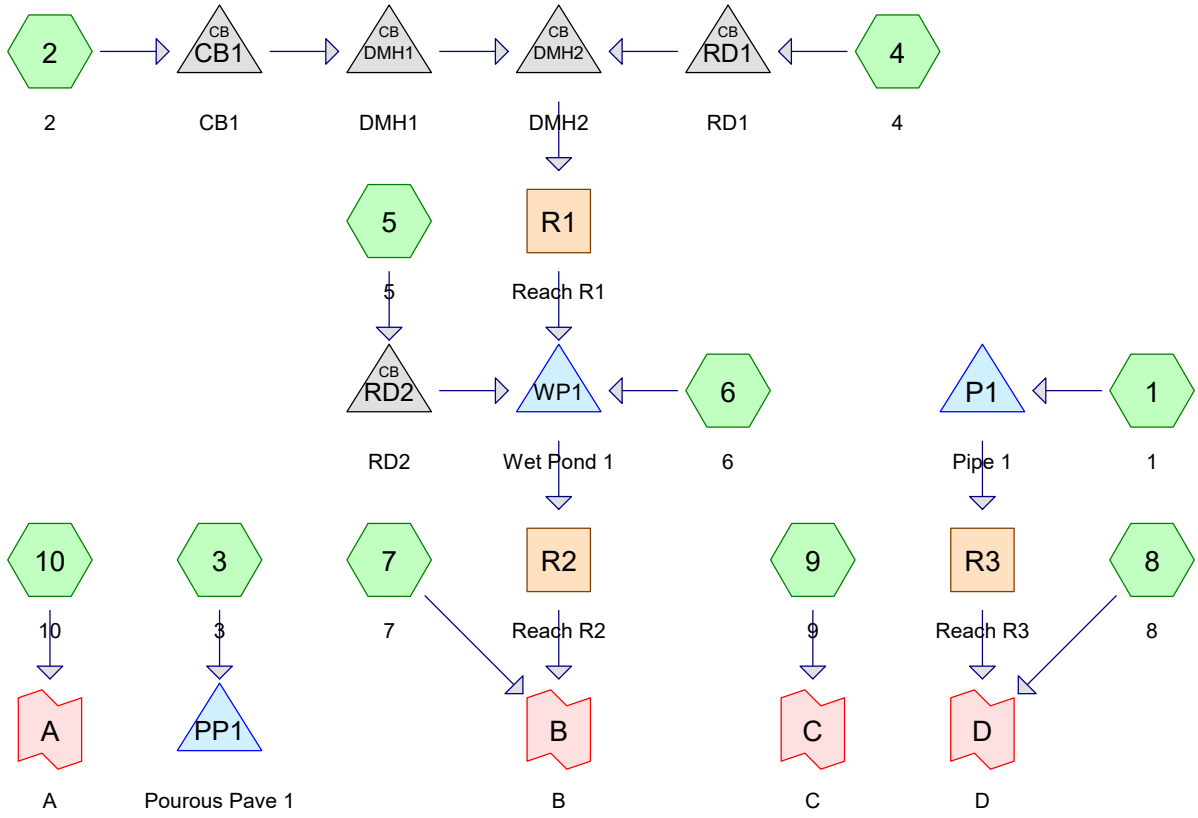
Subcatchment C: C Runoff Area=29,169 sf 0.00% Impervious Runoff Depth=2.04"
Flow Length=235' Tc=19.3 min CN=WQ Runoff=0.6 cfs 0.114 af

Subcatchment D: D Runoff Area=76,422 sf 7.50% Impervious Runoff Depth=3.43"
Flow Length=374' Tc=20.7 min CN=WQ Runoff=2.7 cfs 0.501 af

Total Runoff Area = 3.696 ac Runoff Volume = 0.948 af Average Runoff Depth = 3.08"
96.19% Pervious = 3.555 ac 3.81% Impervious = 0.141 ac

A-2

DEVELOPED WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 21094 - Post

Prepared by Civilworks New England, Printed 8/24/2022

HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.407	39	>75% Grass cover, Good, HSG A (1, 3, 6, 7, 8, 10)
0.087	61	>75% Grass cover, Good, HSG B (6, 9)
0.810	74	>75% Grass cover, Good, HSG C (1, 6, 7, 8, 9, 10)
0.660	98	Paved roads w/curbs & sewers, HSG A (1, 2, 3, 6, 10)
0.119	98	Paved roads w/curbs & sewers, HSG B (6)
0.400	98	Paved roads w/curbs & sewers, HSG C (2, 3, 6)
0.376	98	Roofs, HSG A (4, 5)
0.154	98	Roofs, HSG C (5)
0.113	30	Woods, Good, HSG A (7, 8, 10)
0.056	55	Woods, Good, HSG B (8, 9)
0.468	70	Woods, Good, HSG C (7, 8, 9, 10)
0.045	77	Woods, Good, HSG D (7, 10)
3.696	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.556	HSG A	1, 2, 3, 4, 5, 6, 7, 8, 10
0.262	HSG B	6, 8, 9
1.833	HSG C	1, 2, 3, 5, 6, 7, 8, 9, 10
0.045	HSG D	7, 10
0.000	Other	
3.696		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.407	0.087	0.810	0.000	0.000	1.303	>75% Grass cover, Good	1, 3, 6, 7, 8, 9, 10
0.660	0.119	0.400	0.000	0.000	1.179	Paved roads w/curbs & sewers	1, 2, 3, 6, 10
0.376	0.000	0.154	0.000	0.000	0.531	Roofs	4, 5
0.113	0.056	0.468	0.045	0.000	0.682	Woods, Good	7, 8, 9, 10
1.556	**0.262**	**1.833**	**0.045**	**0.000**	**3.696**	**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-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=12,127 sf 21.56% Impervious Runoff Depth=1.05"
Flow Length=129' Tc=11.3 min CN=WQ Runoff=0.2 cfs 0.024 af

Subcatchment 2: 2 Runoff Area=4,042 sf 100.00% Impervious Runoff Depth=3.37"
Flow Length=186' Slope=0.0420 '/' Tc=1.2 min CN=WQ Runoff=0.3 cfs 0.026 af

Subcatchment 3: 3 Runoff Area=6,681 sf 93.98% Impervious Runoff Depth=3.16"
Flow Length=65' Tc=1.9 min CN=WQ Runoff=0.5 cfs 0.040 af

Subcatchment 4: 4 Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=3.37"
Flow Length=25' Tc=2.0 min CN=98 Runoff=0.2 cfs 0.016 af

Subcatchment 5: 5 Runoff Area=20,625 sf 100.00% Impervious Runoff Depth=3.37"
Flow Length=75' Tc=2.0 min CN=WQ Runoff=1.6 cfs 0.133 af

Subcatchment 6: 6 Runoff Area=67,439 sf 56.23% Impervious Runoff Depth=2.34"
Flow Length=420' Tc=13.3 min CN=WQ Runoff=2.4 cfs 0.302 af

Subcatchment 7: 7 Runoff Area=20,130 sf 0.00% Impervious Runoff Depth=0.90"
Flow Length=70' Tc=11.8 min CN=WQ Runoff=0.3 cfs 0.035 af

Subcatchment 8: 8 Runoff Area=14,946 sf 0.00% Impervious Runoff Depth=0.86"
Flow Length=189' Tc=13.9 min CN=WQ Runoff=0.2 cfs 0.025 af

Subcatchment 9: 9 Runoff Area=3,420 sf 0.00% Impervious Runoff Depth=0.62"
Flow Length=21' Tc=3.1 min CN=WQ Runoff=0.0 cfs 0.004 af

Subcatchment 10: 10 Runoff Area=9,084 sf 5.68% Impervious Runoff Depth=1.00"
Flow Length=208' Tc=12.0 min CN=WQ Runoff=0.1 cfs 0.017 af

Reach R1: Reach R1 Avg. Flow Depth=0.15' Max Vel=0.47 fps Inflow=0.5 cfs 0.042 af
n=0.069 L=10.0' S=0.0100 '/' Capacity=6.9 cfs Outflow=0.5 cfs 0.042 af

Reach R2: Reach R2 Avg. Flow Depth=0.11' Max Vel=0.25 fps Inflow=0.2 cfs 0.450 af
n=0.069 L=11.0' S=0.0045 '/' Capacity=4.6 cfs Outflow=0.2 cfs 0.450 af

Reach R3: Reach R3 Avg. Flow Depth=0.11' Max Vel=0.71 fps Inflow=0.2 cfs 0.024 af
n=0.080 L=133.0' S=0.0451 '/' Capacity=19.7 cfs Outflow=0.2 cfs 0.024 af

Pond CB1: CB1 Peak Elev=164.26' Inflow=0.3 cfs 0.026 af
15.0" Round Culvert n=0.012 L=36.0' S=0.0111 '/' Outflow=0.3 cfs 0.026 af

Pond DMH1: DMH1 Peak Elev=163.76' Inflow=0.3 cfs 0.026 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.3 cfs 0.026 af

Pond DMH2: DMH2 Peak Elev=161.34' Inflow=0.5 cfs 0.042 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0500 '/' Outflow=0.5 cfs 0.042 af

Pond P1: Pipe 1 Peak Elev=165.70' Storage=37 cf Inflow=0.2 cfs 0.024 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.2 cfs 0.024 af

Pond PP1: Pourous Pave 1 Peak Elev=164.73' Storage=128 cf Inflow=0.5 cfs 0.040 af
Outflow=0.2 cfs 0.040 af

Pond RD1: RD1 Peak Elev=164.83' Inflow=0.2 cfs 0.016 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0100 '/' Outflow=0.2 cfs 0.016 af

Pond RD2: RD2 Peak Elev=157.37' Inflow=1.6 cfs 0.133 af
12.0" Round Culvert n=0.012 L=300.0' S=0.0033 '/' Outflow=1.6 cfs 0.133 af

Pond WP1: Wet Pond 1 Peak Elev=155.92' Storage=17,339 cf Inflow=3.4 cfs 0.477 af
Outflow=0.2 cfs 0.450 af

Link A: A Inflow=0.1 cfs 0.017 af
Primary=0.1 cfs 0.017 af

Link B: B Inflow=0.4 cfs 0.484 af
Primary=0.4 cfs 0.484 af

Link C: C Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link D: D Inflow=0.4 cfs 0.049 af
Primary=0.4 cfs 0.049 af

Total Runoff Area = 3.696 ac Runoff Volume = 0.622 af Average Runoff Depth = 2.02"
53.73% Pervious = 1.986 ac 46.27% Impervious = 1.710 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-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=12,127 sf 21.56% Impervious Runoff Depth=1.92"
Flow Length=129' Tc=11.3 min CN=WQ Runoff=0.3 cfs 0.045 af

Subcatchment 2: 2 Runoff Area=4,042 sf 100.00% Impervious Runoff Depth=5.18"
Flow Length=186' Slope=0.0420 '/' Tc=1.2 min CN=WQ Runoff=0.4 cfs 0.040 af

Subcatchment 3: 3 Runoff Area=6,681 sf 93.98% Impervious Runoff Depth=4.89"
Flow Length=65' Tc=1.9 min CN=WQ Runoff=0.6 cfs 0.062 af

Subcatchment 4: 4 Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=5.18"
Flow Length=25' Tc=2.0 min CN=98 Runoff=0.3 cfs 0.025 af

Subcatchment 5: 5 Runoff Area=20,625 sf 100.00% Impervious Runoff Depth=5.18"
Flow Length=75' Tc=2.0 min CN=WQ Runoff=2.1 cfs 0.204 af

Subcatchment 6: 6 Runoff Area=67,439 sf 56.23% Impervious Runoff Depth=3.88"
Flow Length=420' Tc=13.3 min CN=WQ Runoff=3.4 cfs 0.500 af

Subcatchment 7: 7 Runoff Area=20,130 sf 0.00% Impervious Runoff Depth=1.94"
Flow Length=70' Tc=11.8 min CN=WQ Runoff=0.6 cfs 0.075 af

Subcatchment 8: 8 Runoff Area=14,946 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=189' Tc=13.9 min CN=WQ Runoff=0.4 cfs 0.054 af

Subcatchment 9: 9 Runoff Area=3,420 sf 0.00% Impervious Runoff Depth=1.59"
Flow Length=21' Tc=3.1 min CN=WQ Runoff=0.1 cfs 0.010 af

Subcatchment 10: 10 Runoff Area=9,084 sf 5.68% Impervious Runoff Depth=2.06"
Flow Length=208' Tc=12.0 min CN=WQ Runoff=0.3 cfs 0.036 af

Reach R1: Reach R1 Avg. Flow Depth=0.17' Max Vel=0.51 fps Inflow=0.7 cfs 0.065 af
n=0.069 L=10.0' S=0.0100 '/' Capacity=6.9 cfs Outflow=0.7 cfs 0.065 af

Reach R2: Reach R2 Avg. Flow Depth=0.15' Max Vel=0.31 fps Inflow=0.3 cfs 0.741 af
n=0.069 L=11.0' S=0.0045 '/' Capacity=4.6 cfs Outflow=0.3 cfs 0.741 af

Reach R3: Reach R3 Avg. Flow Depth=0.14' Max Vel=0.81 fps Inflow=0.3 cfs 0.045 af
n=0.080 L=133.0' S=0.0451 '/' Capacity=19.7 cfs Outflow=0.3 cfs 0.045 af

Pond CB1: CB1 Peak Elev=164.30' Inflow=0.4 cfs 0.040 af
15.0" Round Culvert n=0.012 L=36.0' S=0.0111 '/' Outflow=0.4 cfs 0.040 af

Pond DMH1: DMH1 Peak Elev=163.80' Inflow=0.4 cfs 0.040 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.4 cfs 0.040 af

Pond DMH2: DMH2 Peak Elev=161.38' Inflow=0.7 cfs 0.065 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0500 '/' Outflow=0.7 cfs 0.065 af

Pond P1: Pipe 1 Peak Elev=165.75' Storage=49 cf Inflow=0.3 cfs 0.045 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.3 cfs 0.045 af

Pond PP1: Pourous Pave 1 Peak Elev=164.93' Storage=228 cf Inflow=0.6 cfs 0.062 af
Outflow=0.2 cfs 0.062 af

Pond RD1: RD1 Peak Elev=164.86' Inflow=0.3 cfs 0.025 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0100 '/' Outflow=0.3 cfs 0.025 af

Pond RD2: RD2 Peak Elev=157.56' Inflow=2.1 cfs 0.204 af
12.0" Round Culvert n=0.012 L=300.0' S=0.0033 '/' Outflow=2.1 cfs 0.204 af

Pond WP1: Wet Pond 1 Peak Elev=156.51' Storage=23,867 cf Inflow=4.7 cfs 0.769 af
Outflow=0.3 cfs 0.741 af

Link A: A Inflow=0.3 cfs 0.036 af
Primary=0.3 cfs 0.036 af

Link B: B Inflow=0.7 cfs 0.816 af
Primary=0.7 cfs 0.816 af

Link C: C Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link D: D Inflow=0.7 cfs 0.099 af
Primary=0.7 cfs 0.099 af

Total Runoff Area = 3.696 ac Runoff Volume = 1.052 af Average Runoff Depth = 3.41"
53.73% Pervious = 1.986 ac 46.27% Impervious = 1.710 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment 1: 1

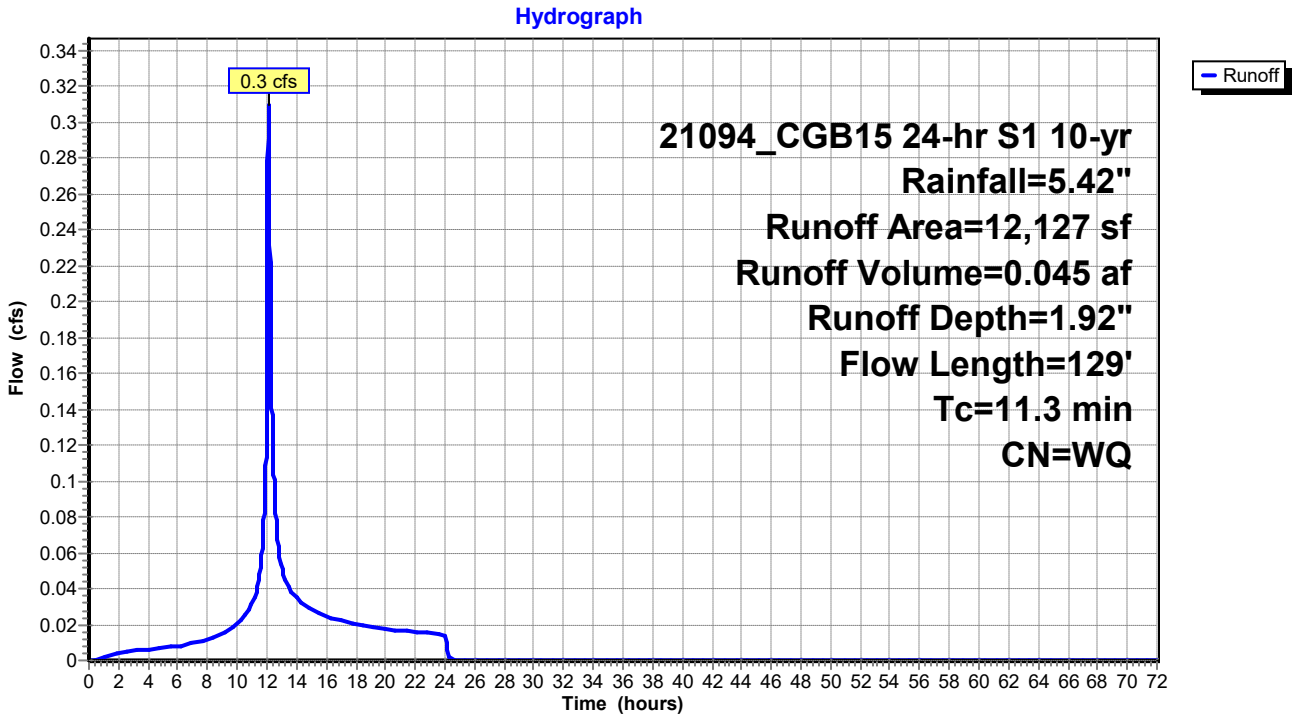
Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.045 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
6,616	39	>75% Grass cover, Good, HSG A
2,614	98	Paved roads w/curbs & sewers, HSG A
2,897	74	>75% Grass cover, Good, HSG C
12,127		Weighted Average
9,513		78.44% Pervious Area
2,614		21.56% Impervious 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"
0.5	29	0.0170	0.91		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	129	Total			

Subcatchment 1: 1



Summary for Subcatchment 2: 2

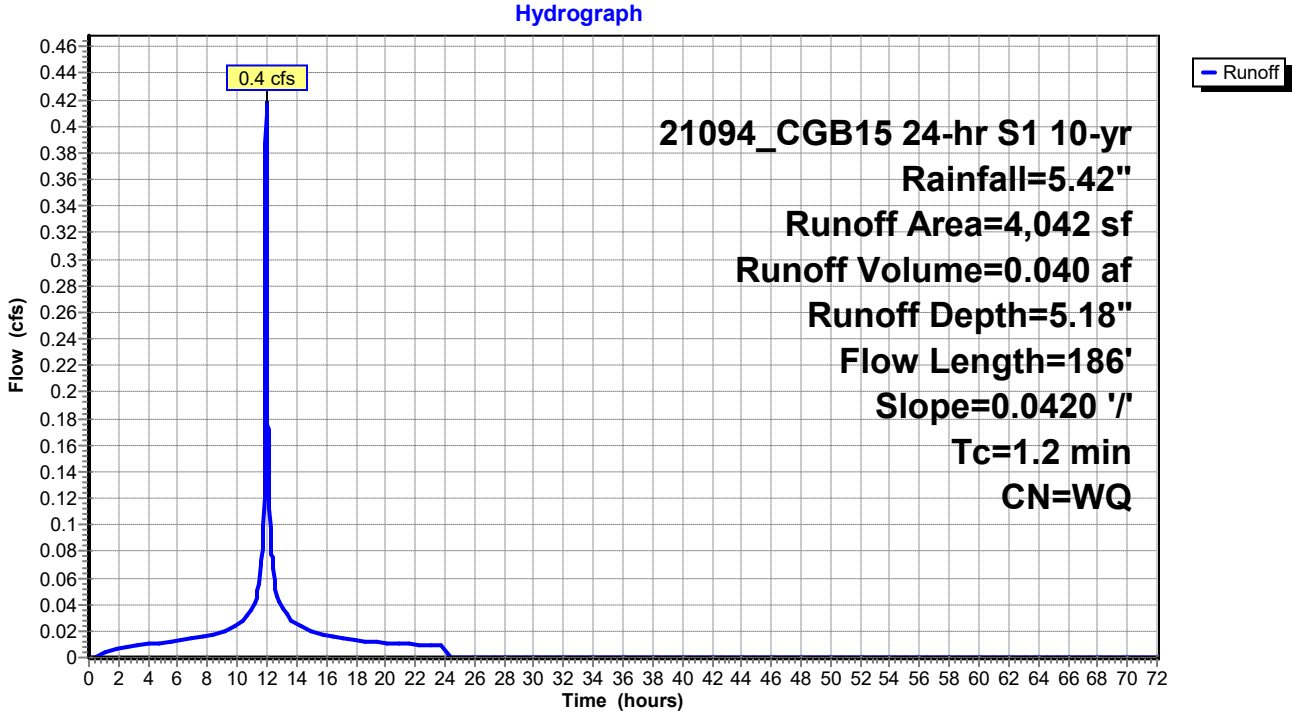
Runoff = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
3,083	98	Paved roads w/curbs & sewers, HSG A
959	98	Paved roads w/curbs & sewers, HSG C
4,042		Weighted Average
4,042		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	186	0.0420	4.16		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	186	Total, Increased to minimum Tc = 1.2 min			

Subcatchment 2: 2



Summary for Subcatchment 3: 3

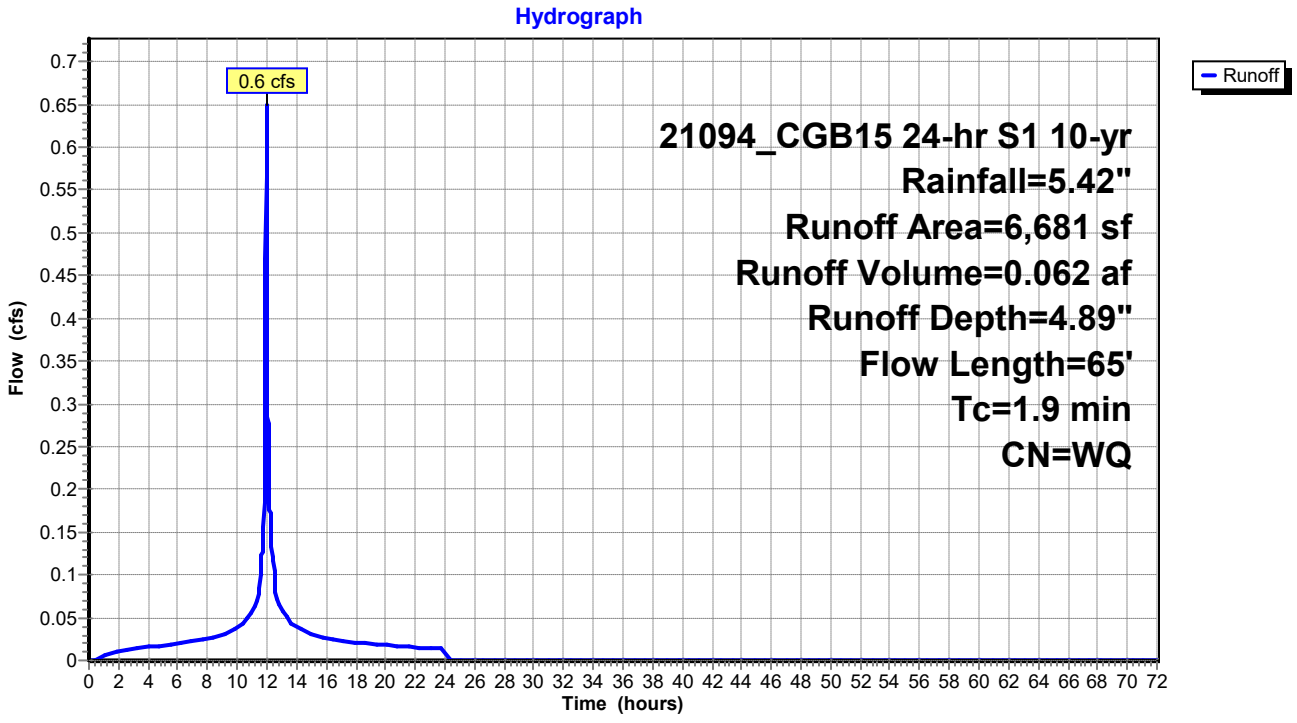
Runoff = 0.6 cfs @ 12.00 hrs, Volume= 0.062 af, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
402	39	>75% Grass cover, Good, HSG A
2,607	98	Paved roads w/curbs & sewers, HSG A
3,672	98	Paved roads w/curbs & sewers, HSG C
6,681		Weighted Average
402		6.02% Pervious Area
6,279		93.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	5	0.0100	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.3	60	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	65	Total			

Subcatchment 3: 3



Summary for Subcatchment 4: 4

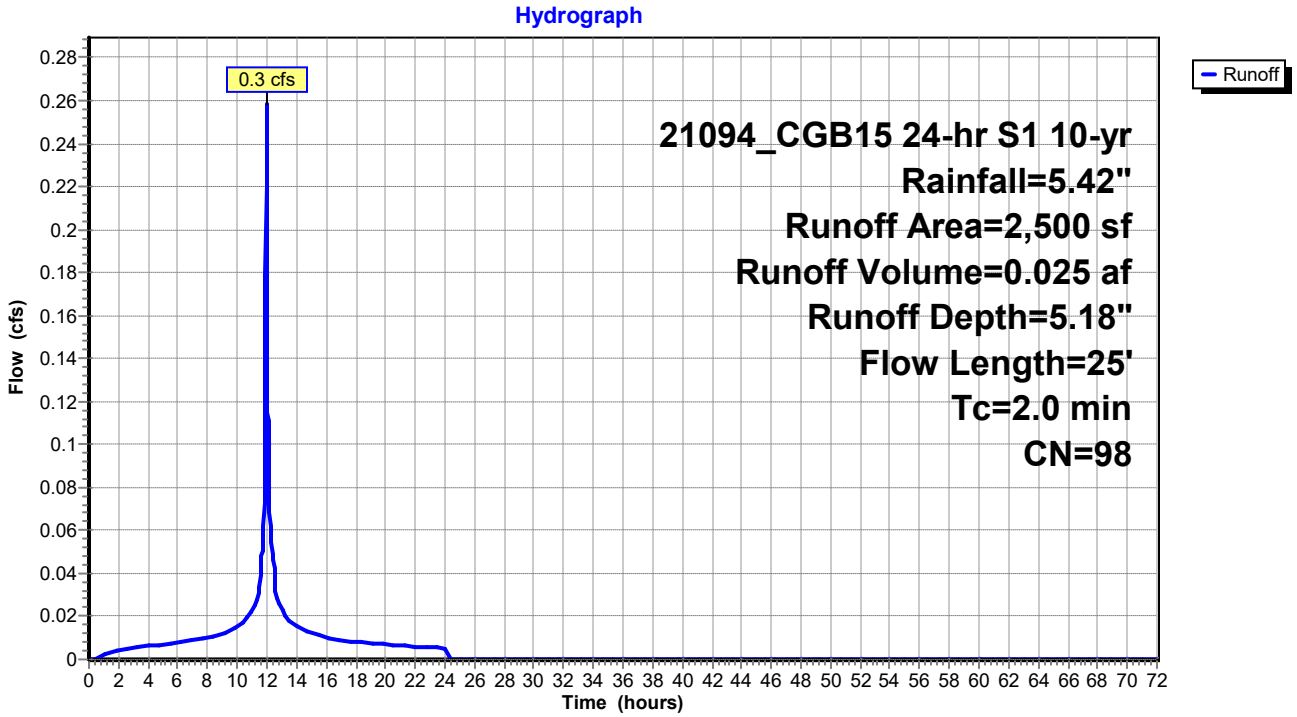
Runoff = 0.3 cfs @ 12.00 hrs, Volume= 0.025 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
2,500	98	Roofs, HSG A
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	25		0.21		**Direct Entry, Roof**

Subcatchment 4: 4



Summary for Subcatchment 5: 5

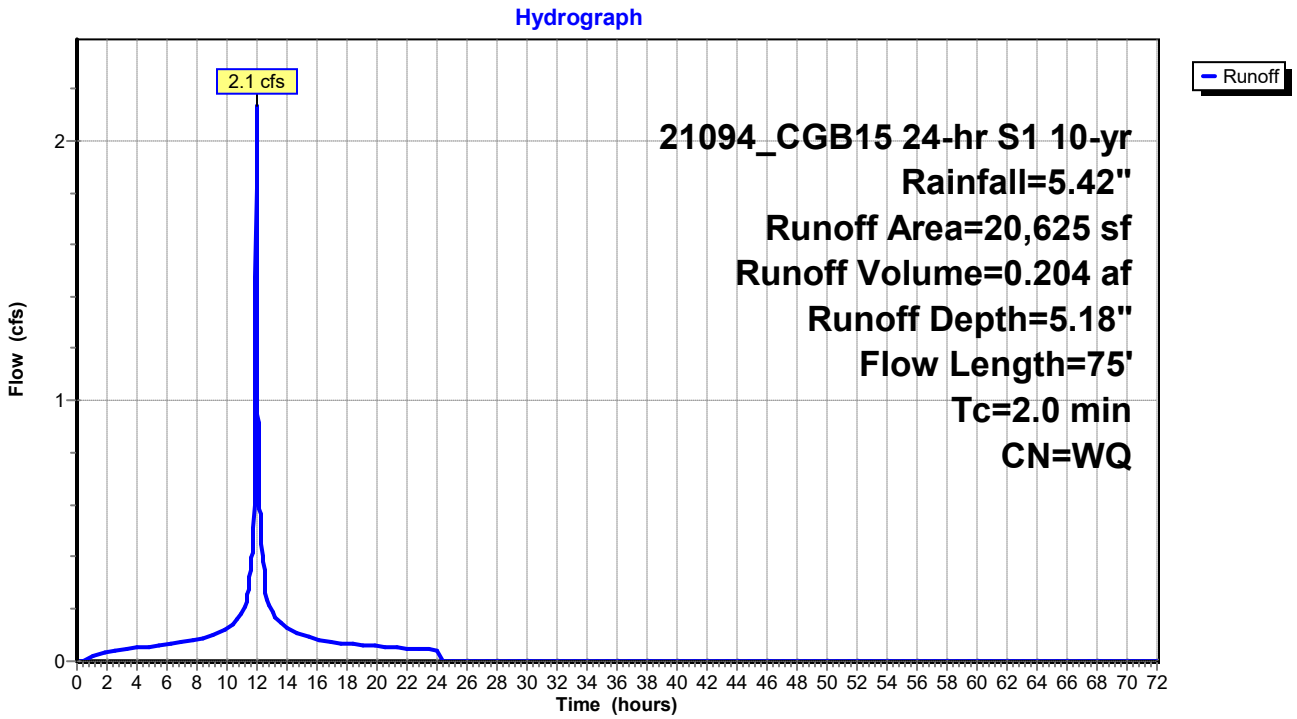
Runoff = 2.1 cfs @ 12.00 hrs, Volume= 0.204 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
13,895	98	Roofs, HSG A
6,730	98	Roofs, HSG C
20,625		Weighted Average
20,625		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	75		0.63		**Direct Entry, Roof**

Subcatchment 5: 5



Summary for Subcatchment 6: 6

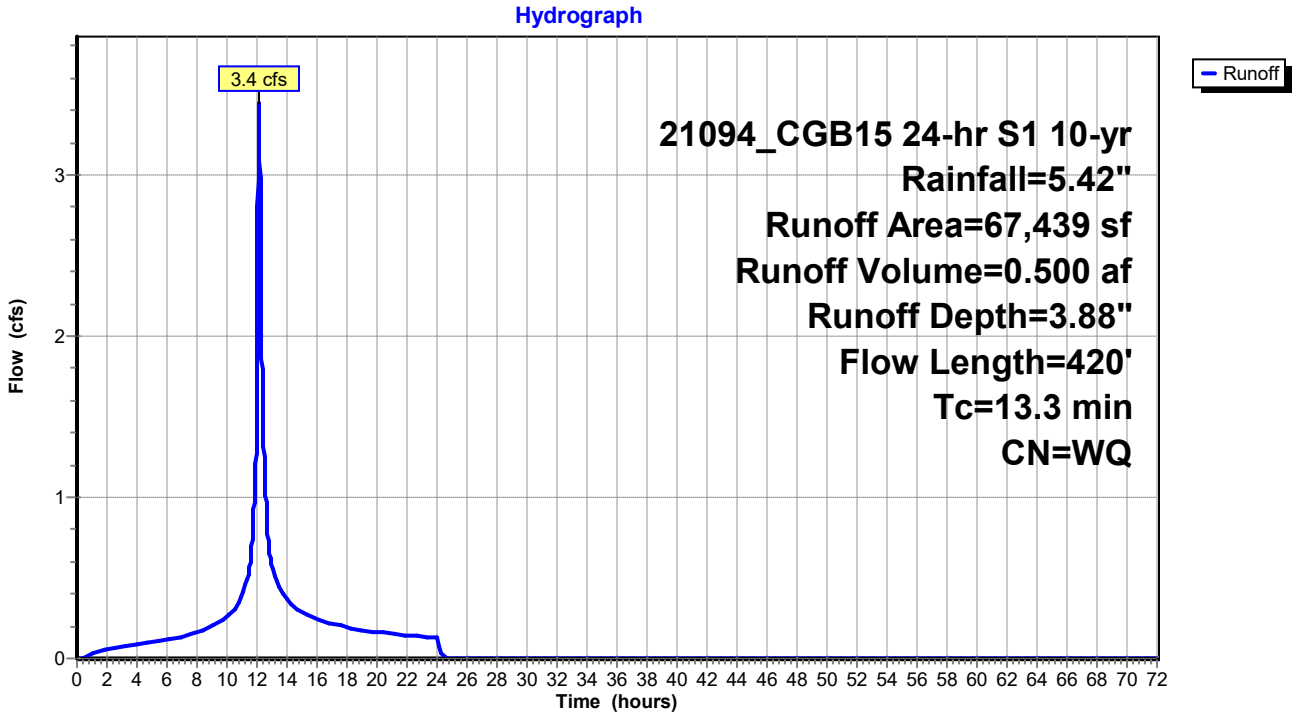
Runoff = 3.4 cfs @ 12.13 hrs, Volume= 0.500 af, Depth= 3.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
4,520	39	>75% Grass cover, Good, HSG A
19,943	98	Paved roads w/curbs & sewers, HSG A
3,737	61	>75% Grass cover, Good, HSG B
5,173	98	Paved roads w/curbs & sewers, HSG B
21,261	74	>75% Grass cover, Good, HSG C
12,805	98	Paved roads w/curbs & sewers, HSG C
67,439		Weighted Average
29,518		43.77% Pervious Area
37,921		56.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	53	0.0120	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.5	70	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.9	297	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
13.3	420	Total			

Subcatchment 6: 6



Summary for Subcatchment 7: 7

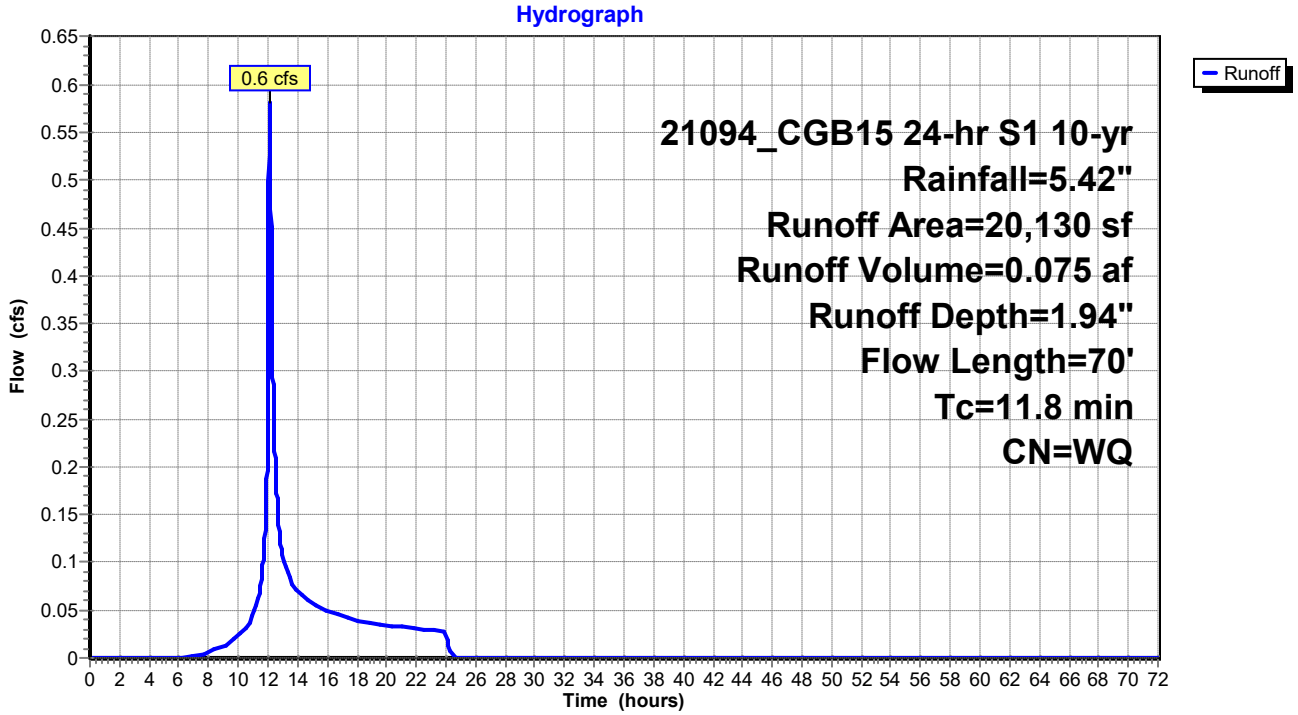
Runoff = 0.6 cfs @ 12.11 hrs, Volume= 0.075 af, Depth= 1.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
2,427	30	Woods, Good, HSG A
2,559	39	>75% Grass cover, Good, HSG A
8,915	70	Woods, Good, HSG C
4,304	74	>75% Grass cover, Good, HSG C
1,925	77	Woods, Good, HSG D
20,130		Weighted Average
20,130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	17	0.2300	0.23		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
10.6	53	0.0280	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
11.8	70	Total			

Subcatchment 7: 7



Summary for Subcatchment 8: 8

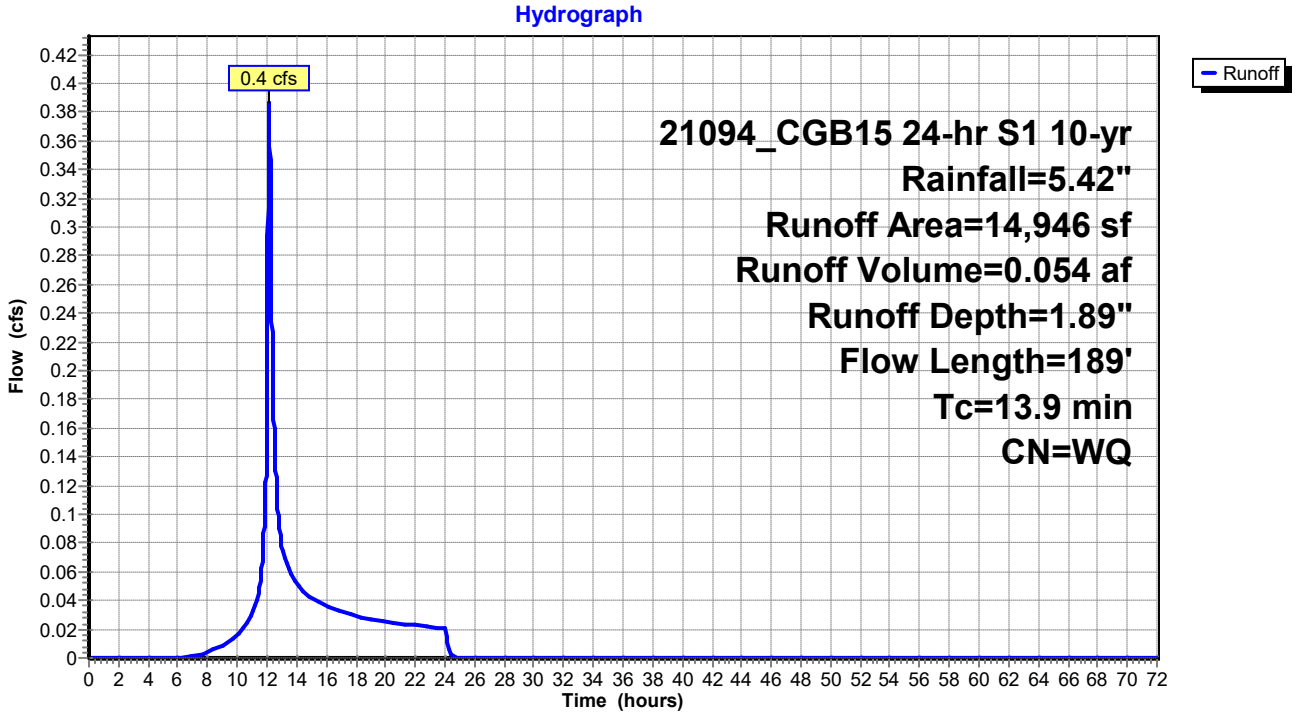
Runoff = 0.4 cfs @ 12.15 hrs, Volume= 0.054 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
1,201	30	Woods, Good, HSG A
2,699	39	>75% Grass cover, Good, HSG A
110	55	Woods, Good, HSG B
6,470	70	Woods, Good, HSG C
4,466	74	>75% Grass cover, Good, HSG C
14,946		Weighted Average
14,946		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0700	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.6	89	0.0340	0.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.9	189	Total			

Subcatchment 8: 8



Summary for Subcatchment 9: 9

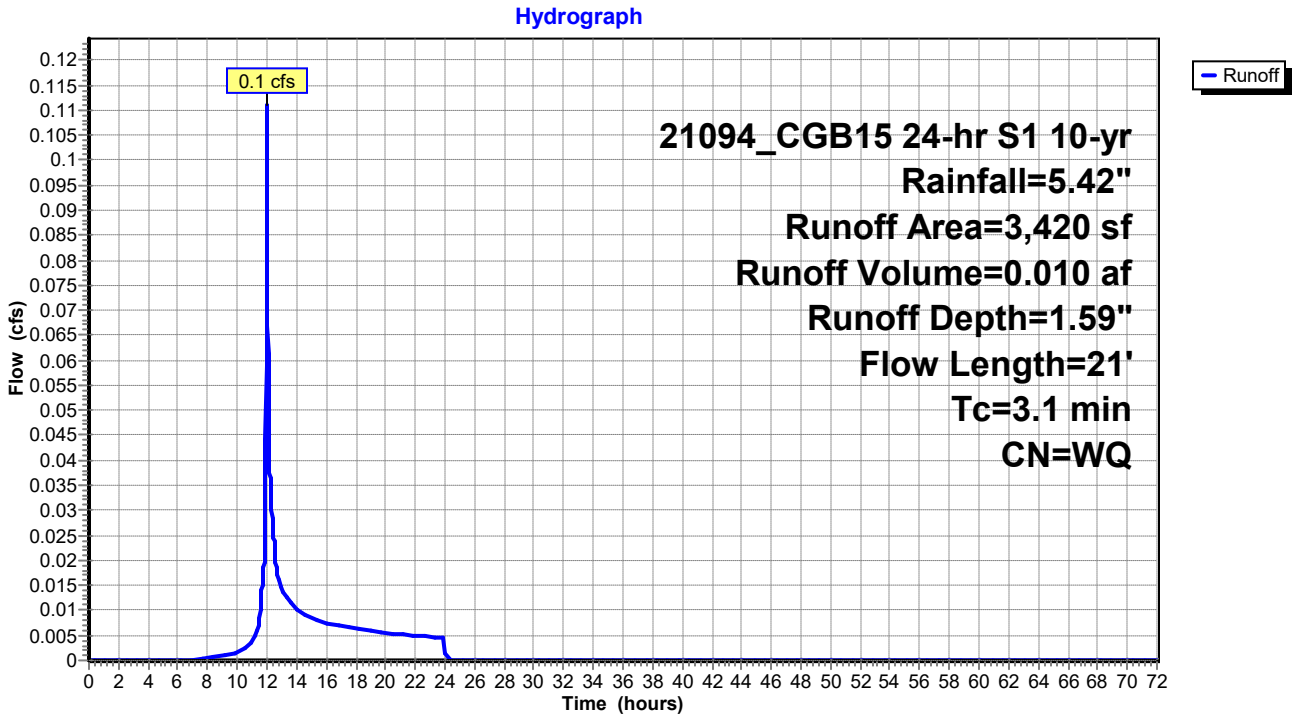
Runoff = 0.1 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
2,342	55	Woods, Good, HSG B
36	61	>75% Grass cover, Good, HSG B
682	70	Woods, Good, HSG C
360	74	>75% Grass cover, Good, HSG C
3,420		Weighted Average
3,420		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	5	0.1090	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
2.5	16	0.0940	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
3.1	21	Total			

Subcatchment 9: 9



Summary for Subcatchment 10: 10

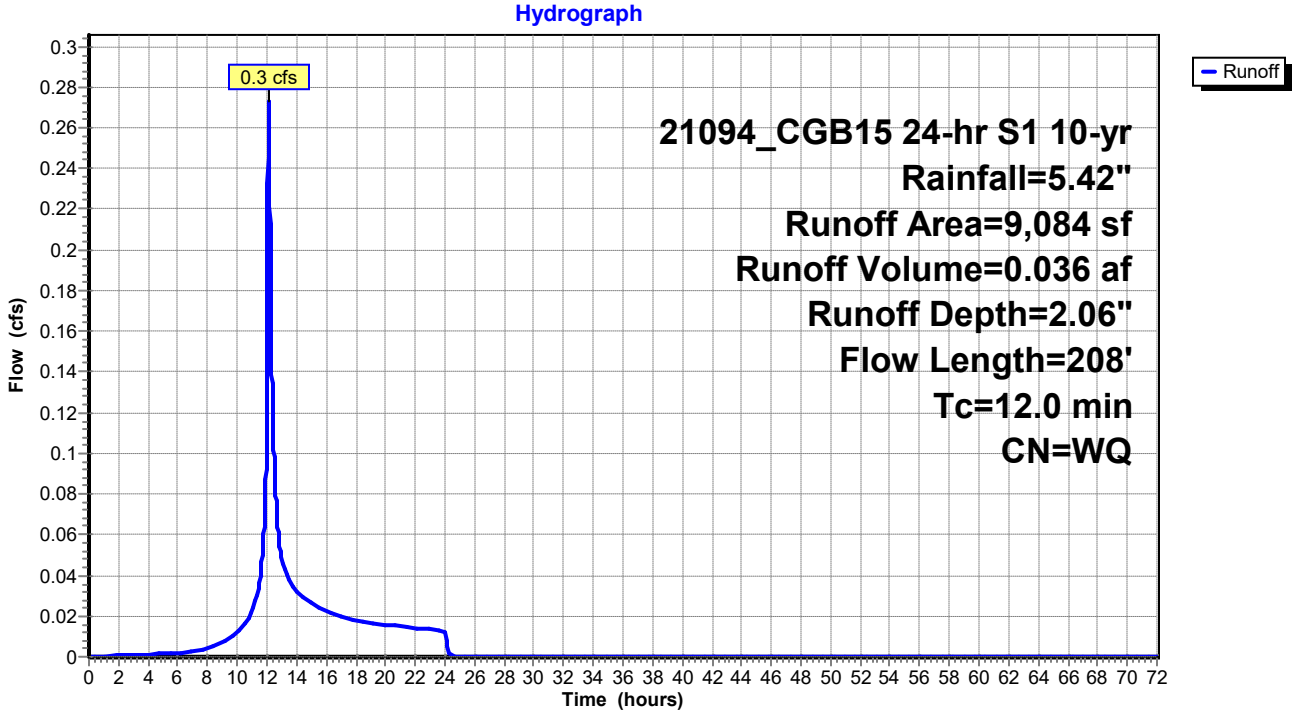
Runoff = 0.3 cfs @ 12.12 hrs, Volume= 0.036 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
21094_CGB15 24-hr S1 10-yr Rainfall=5.42"

Area (sf)	CN	Description
1,275	30	Woods, Good, HSG A
918	39	>75% Grass cover, Good, HSG A
516	98	Paved roads w/curbs & sewers, HSG A
4,340	70	Woods, Good, HSG C
1,997	74	>75% Grass cover, Good, HSG C
38	77	Woods, Good, HSG D
9,084		Weighted Average
8,568		94.32% Pervious Area
516		5.68% Impervious 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"
1.2	108	0.0870	1.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	208	Total			

Subcatchment 10: 10



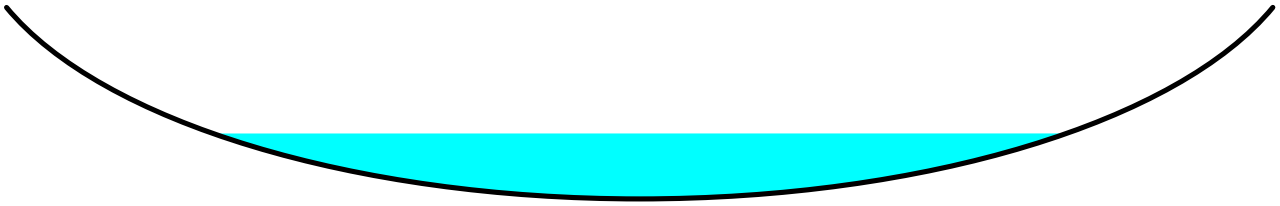
Summary for Reach R1: Reach R1

Inflow Area = 0.150 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 0.7 cfs @ 12.00 hrs, Volume= 0.065 af
Outflow = 0.7 cfs @ 12.00 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.51 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 0.9 min

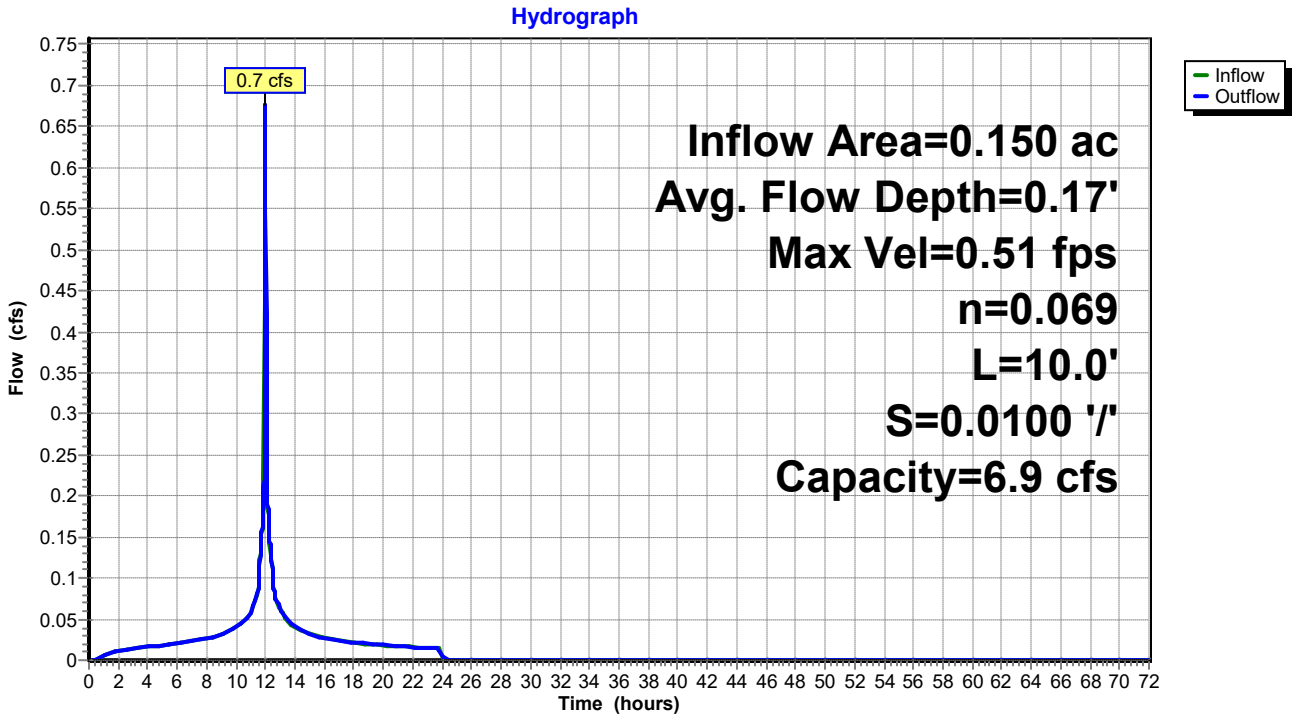
Peak Storage= 13 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 11.70'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 6.9 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.069 Riprap, 6-inch
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 158.00', Outlet Invert= 157.90'



‡

Reach R1: Reach R1



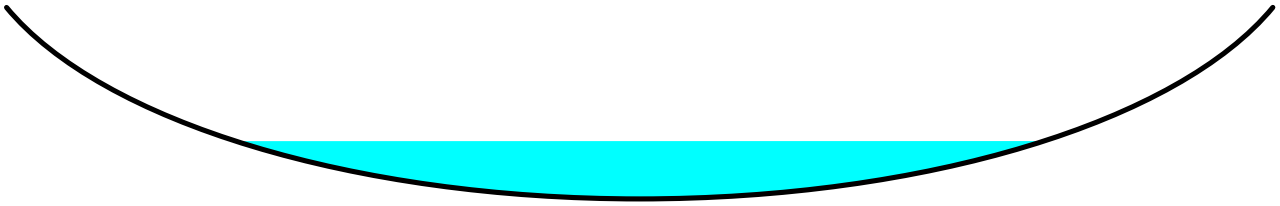
Summary for Reach R2: Reach R2

Inflow Area = 2.172 ac, 68.80% Impervious, Inflow Depth > 4.09" for 10-yr event
Inflow = 0.3 cfs @ 16.15 hrs, Volume= 0.741 af
Outflow = 0.3 cfs @ 16.16 hrs, Volume= 0.741 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.31 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 0.9 min

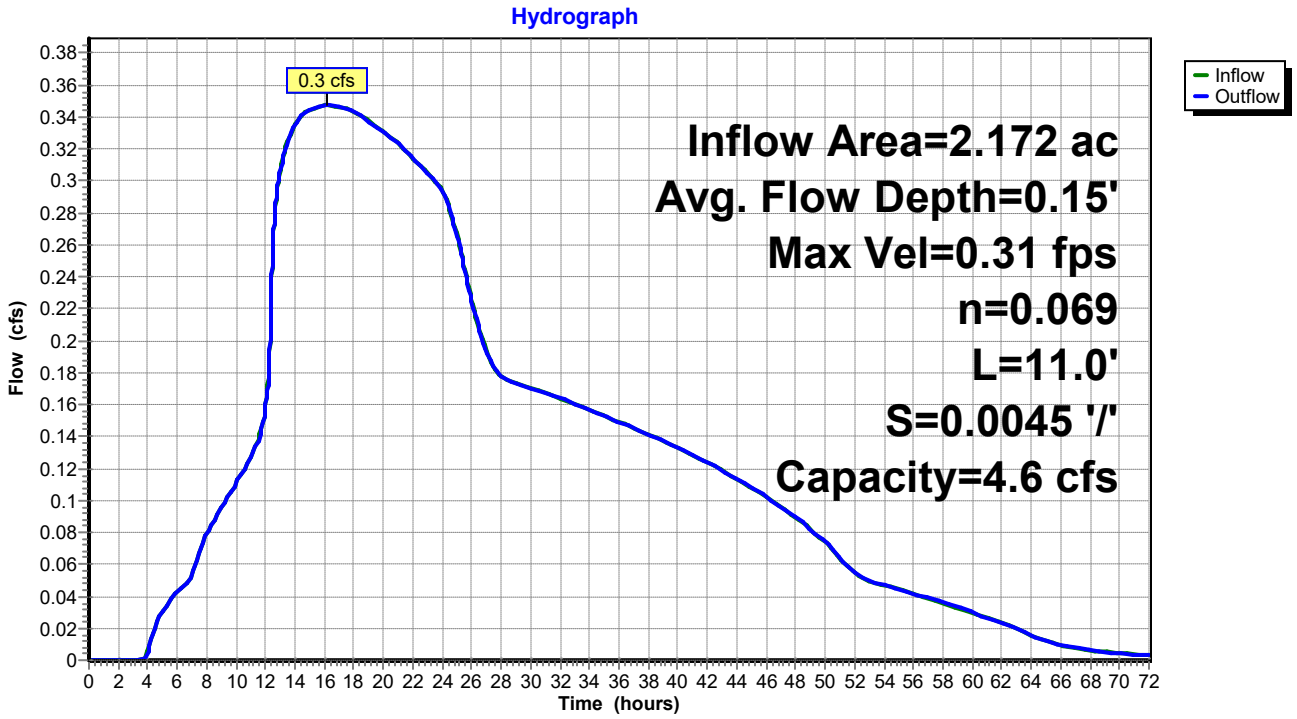
Peak Storage= 12 cf @ 16.16 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 10.99'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 4.6 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.069 Riprap, 6-inch
Length= 11.0' Slope= 0.0045 '/'
Inlet Invert= 153.50', Outlet Invert= 153.45'



‡

Reach R2: Reach R2



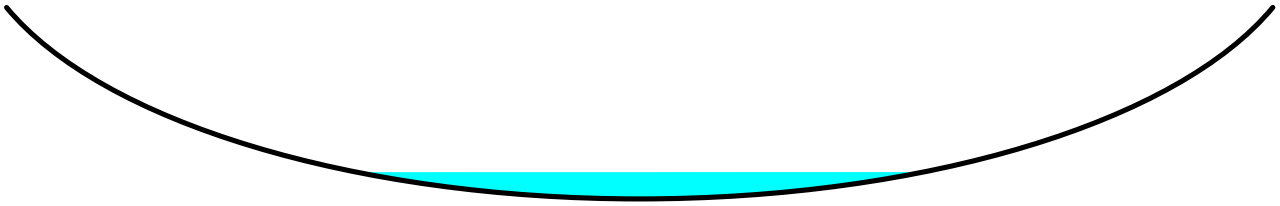
Summary for Reach R3: Reach R3

Inflow Area = 0.278 ac, 21.56% Impervious, Inflow Depth = 1.92" for 10-yr event
Inflow = 0.3 cfs @ 12.13 hrs, Volume= 0.045 af
Outflow = 0.3 cfs @ 12.17 hrs, Volume= 0.045 af, Atten= 4%, Lag= 2.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.81 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.30 fps, Avg. Travel Time= 7.3 min

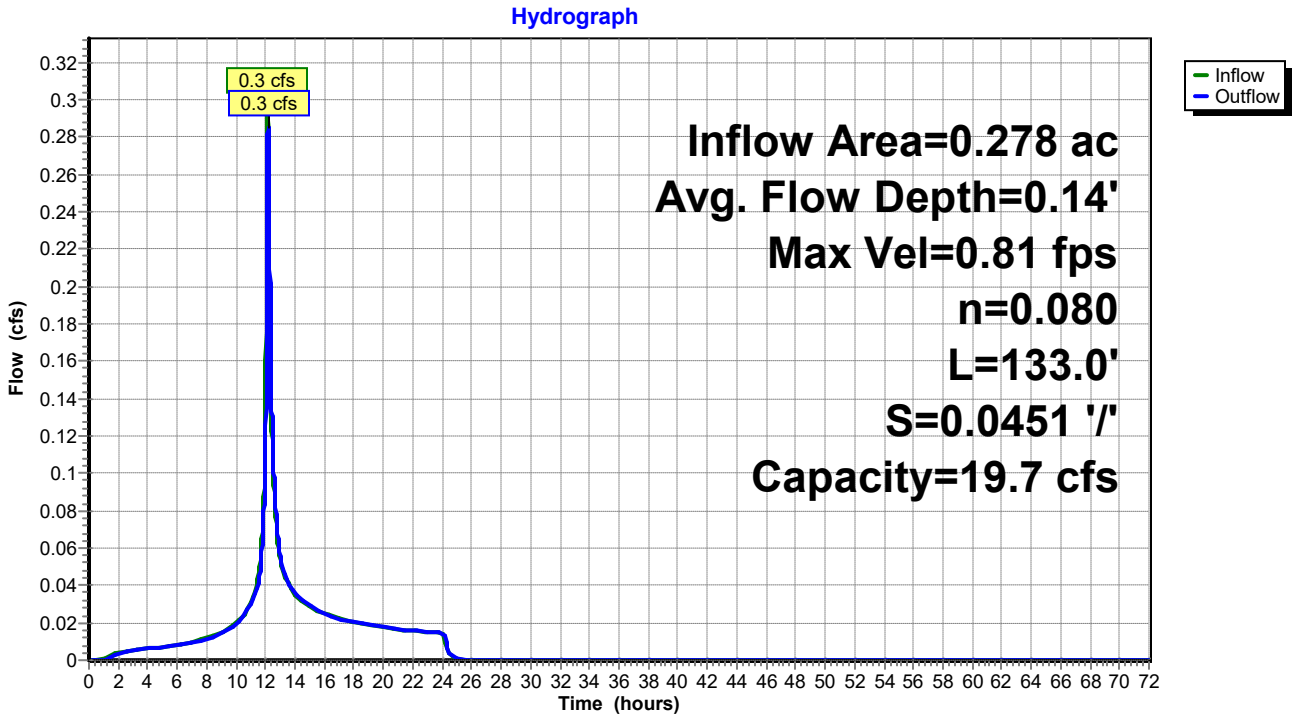
Peak Storage= 47 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 3.75'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 19.7 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 133.0' Slope= 0.0451 '/'
Inlet Invert= 164.50', Outlet Invert= 158.50'



‡

Reach R3: Reach R3



Summary for Pond CB1: CB1

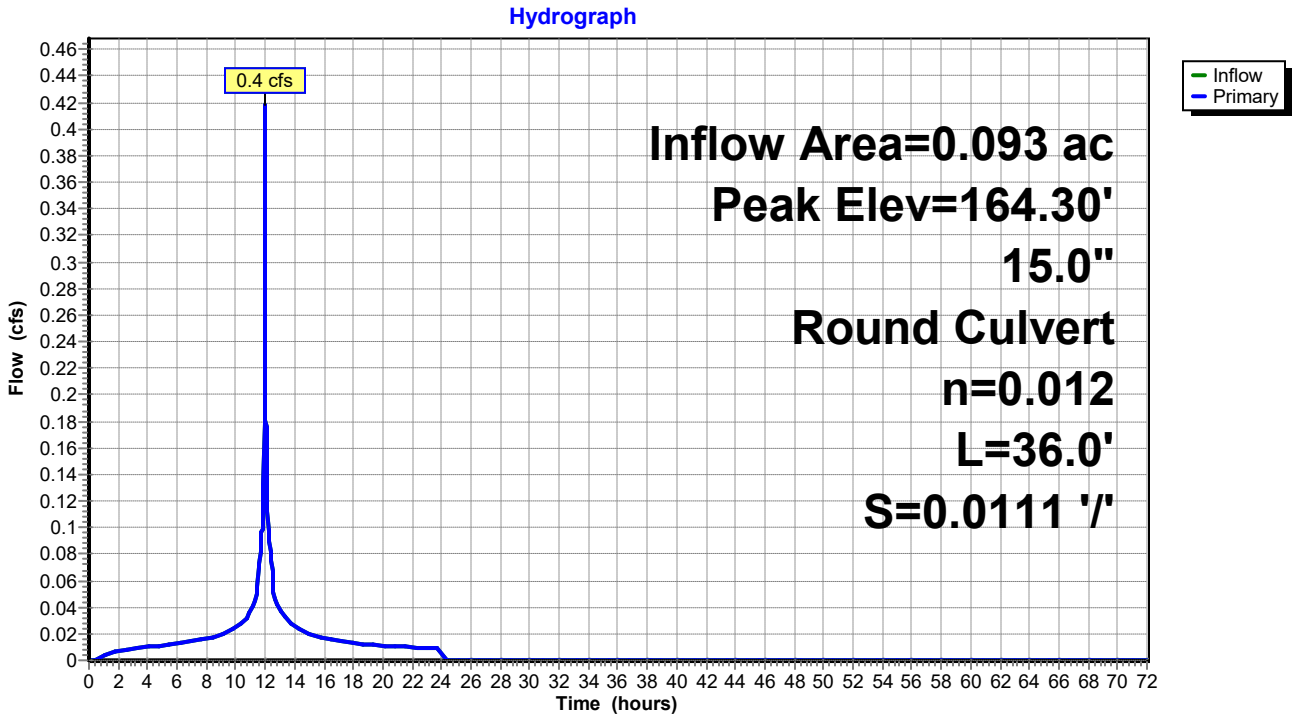
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af
Outflow = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 164.30' @ 11.99 hrs
Flood Elev= 168.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	164.00'	**15.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 164.00' / 163.60' S= 0.0111 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 11.99 hrs HW=164.30' TW=163.80' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.4 cfs @ 1.86 fps)

Pond CB1: CB1



Summary for Pond DMH1: DMH1

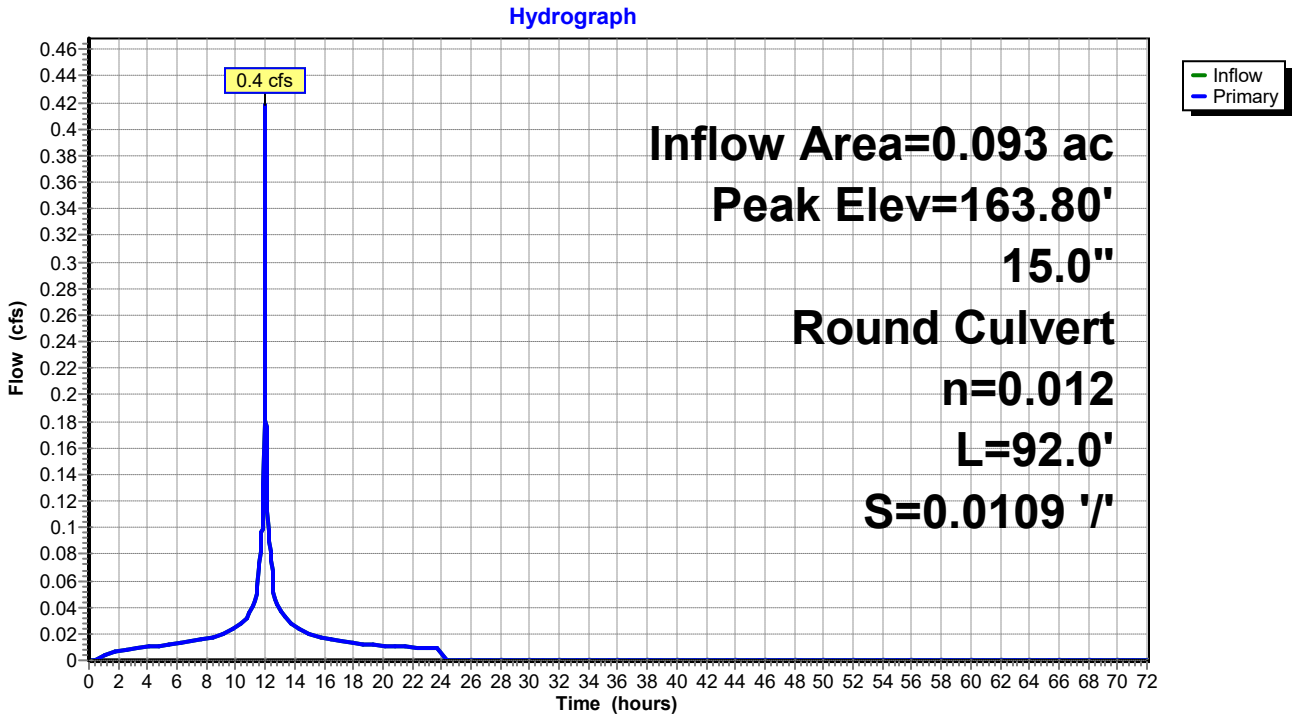
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af
Outflow = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 11.99 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 163.80' @ 11.99 hrs
Flood Elev= 169.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	163.50'	**15.0" Round Culvert** L= 92.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 163.50' / 162.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 11.99 hrs HW=163.80' TW=161.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.4 cfs @ 1.86 fps)

Pond DMH1: DMH1



Summary for Pond DMH2: DMH2

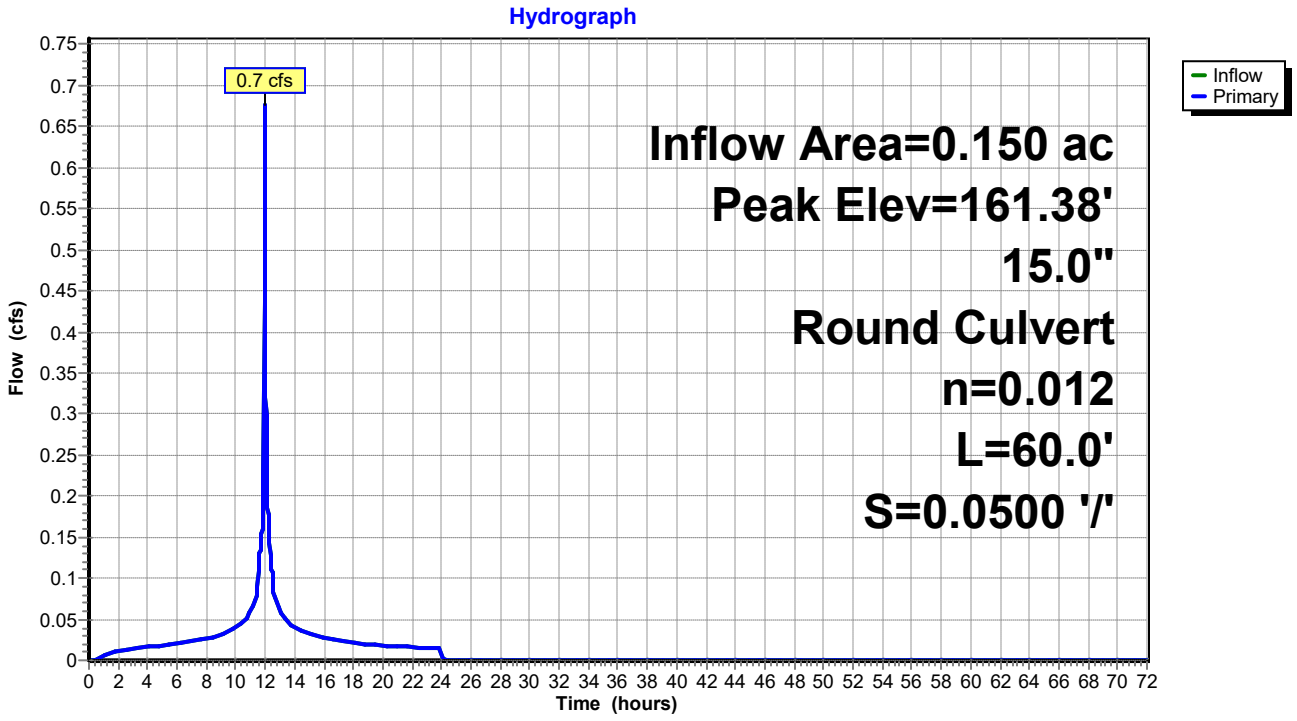
Inflow Area = 0.150 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 0.7 cfs @ 12.00 hrs, Volume= 0.065 af
Outflow = 0.7 cfs @ 12.00 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.00 hrs, Volume= 0.065 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 161.38' @ 12.00 hrs
Flood Elev= 168.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	**15.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 161.00' / 158.00' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.7 cfs @ 12.00 hrs HW=161.38' TW=158.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.7 cfs @ 2.11 fps)

Pond DMH2: DMH2



Summary for Pond P1: Pipe 1

Inflow Area = 0.278 ac, 21.56% Impervious, Inflow Depth = 1.92" for 10-yr event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.045 af
Outflow = 0.3 cfs @ 12.13 hrs, Volume= 0.045 af, Atten= 4%, Lag= 1.8 min
Primary = 0.3 cfs @ 12.13 hrs, Volume= 0.045 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 165.75' @ 12.13 hrs Surf.Area= 237 sf Storage= 49 cf
Flood Elev= 168.00' Surf.Area= 3,506 sf Storage= 4,546 cf

Plug-Flow detention time= 7.6 min calculated for 0.045 af (100% of inflow)
Center-of-Mass det. time= 7.7 min (832.4 - 824.7)

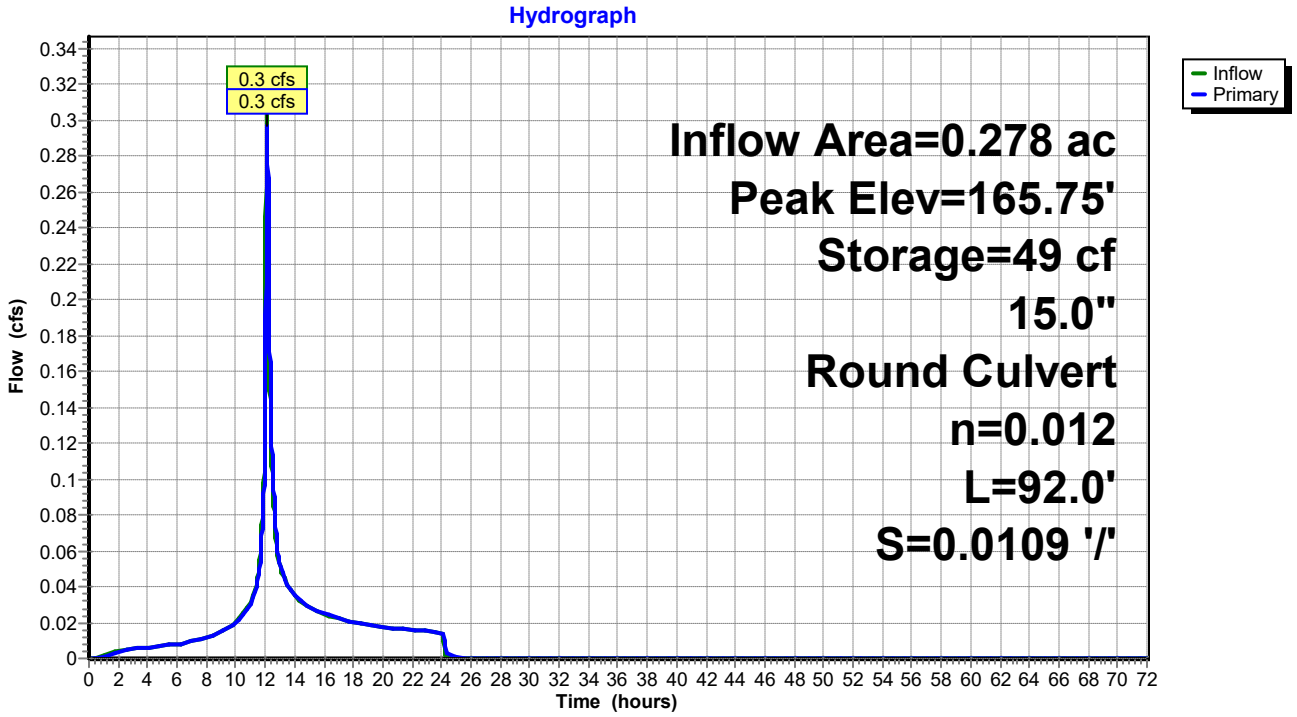
Volume	Invert	Avail.Storage	Storage Description
#1	165.50'	4,546 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
165.50	154	52.2	0	0	154
166.00	339	71.1	120	120	342
167.00	2,700	259.1	1,332	1,452	5,285
168.00	3,506	278.0	3,094	4,546	6,136

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round Culvert** L= 92.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.50' / 164.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.13 hrs HW=165.75' TW=164.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.3 cfs @ 1.70 fps)

Pond P1: Pipe 1



Summary for Pond PP1: Pourous Pave 1

Inflow Area = 0.153 ac, 93.98% Impervious, Inflow Depth = 4.89" for 10-yr event
Inflow = 0.6 cfs @ 12.00 hrs, Volume= 0.062 af
Outflow = 0.2 cfs @ 11.91 hrs, Volume= 0.062 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.2 cfs @ 11.91 hrs, Volume= 0.062 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 164.93' @ 12.22 hrs Surf.Area= 1,458 sf Storage= 228 cf
Flood Elev= 166.73' Surf.Area= 1,458 sf Storage= 547 cf

Plug-Flow detention time= 4.0 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 4.0 min (750.4 - 746.4)

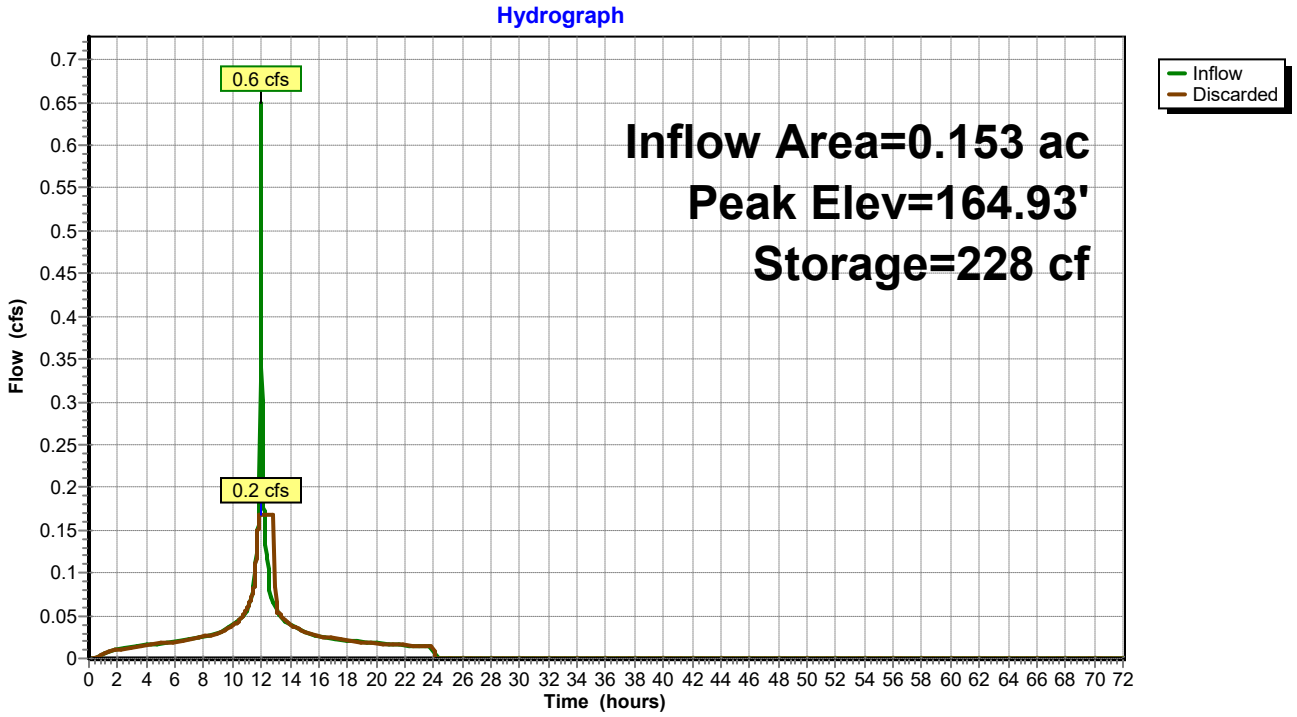
Volume	Invert	Avail.Storage	Storage Description
#1	164.48'	790 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
164.48	1,458	198.0	0.0	0	0	1,458
164.98	1,458	198.0	35.0	255	255	1,557
165.23	1,458	198.0	20.0	73	328	1,607
166.73	1,458	198.0	10.0	219	547	1,904
167.07	1,458	198.0	20.0	99	646	1,971
167.40	1,458	198.0	30.0	144	790	2,036

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.48'	**5.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 11.91 hrs HW=164.51' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.2 cfs)

Pond PP1: Pourous Pave 1



Summary for Pond RD1: RD1

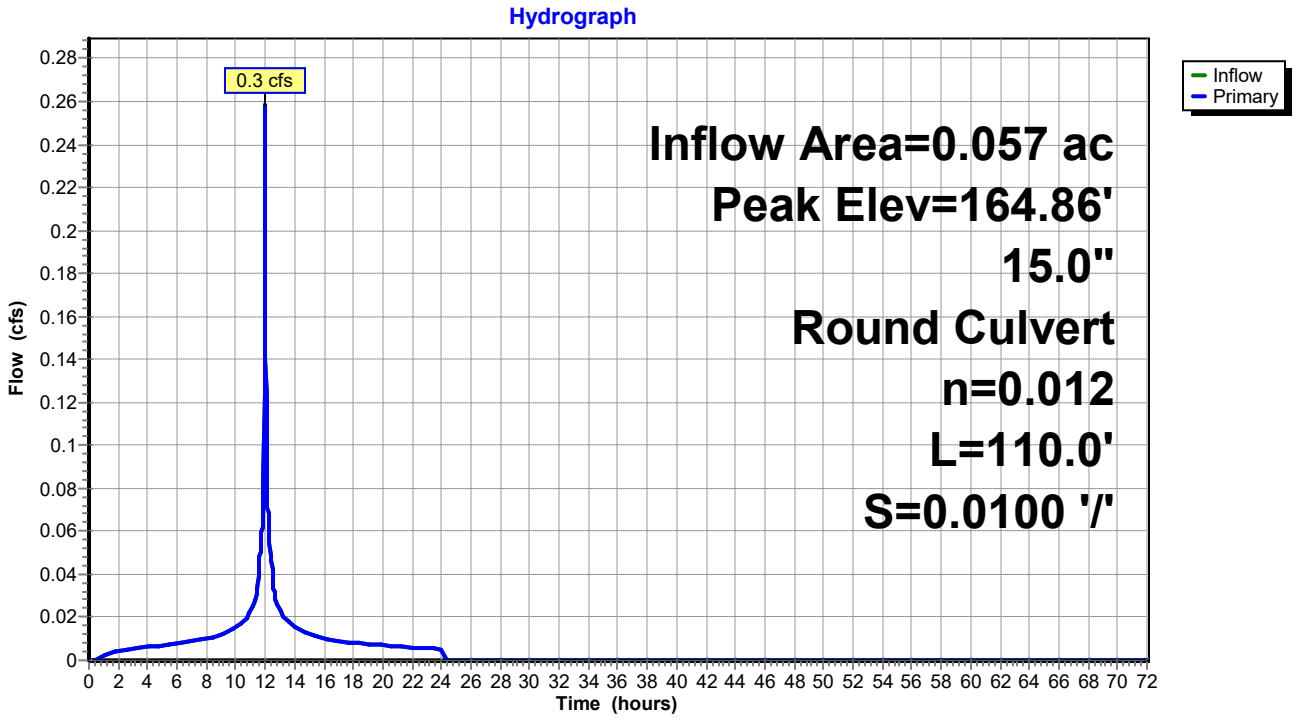
Inflow Area = 0.057 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 0.3 cfs @ 12.00 hrs, Volume= 0.025 af
Outflow = 0.3 cfs @ 12.00 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.00 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 164.86' @ 12.00 hrs
Flood Elev= 169.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	164.60'	**15.0" Round Culvert** L= 110.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 164.60' / 163.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.00 hrs HW=164.86' TW=161.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.3 cfs @ 1.38 fps)

Pond RD1: RD1



Summary for Pond RD2: RD2

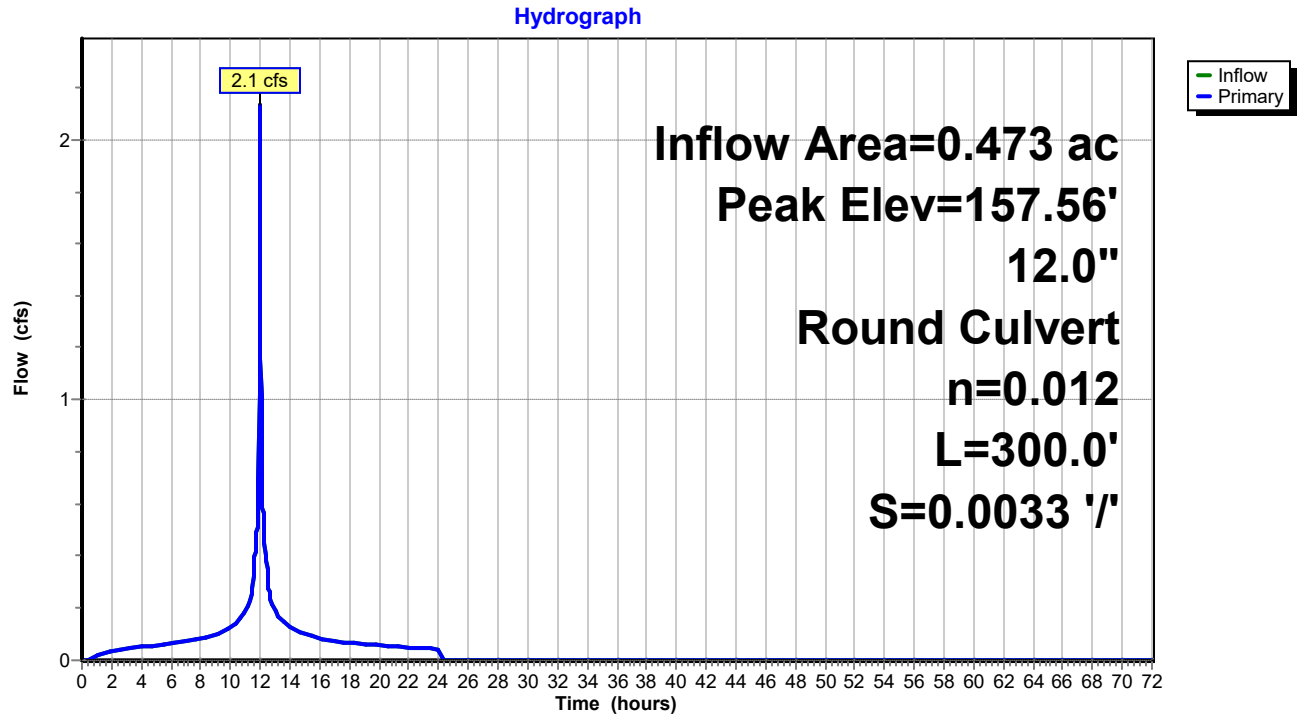
Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 5.18" for 10-yr event
Inflow = 2.1 cfs @ 12.00 hrs, Volume= 0.204 af
Outflow = 2.1 cfs @ 12.00 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.00 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 157.56' @ 12.00 hrs
Flood Elev= 159.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	156.50'	**12.0" Round Culvert** L= 300.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 156.50' / 155.50' S= 0.0033 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.1 cfs @ 12.00 hrs HW=157.56' TW=155.71' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.1 cfs @ 3.18 fps)

Pond RD2: RD2



Summary for Pond WP1: Wet Pond 1

Inflow Area = 2.172 ac, 68.80% Impervious, Inflow Depth = 4.25" for 10-yr event
Inflow = 4.7 cfs @ 12.01 hrs, Volume= 0.769 af
Outflow = 0.3 cfs @ 16.15 hrs, Volume= 0.741 af, Atten= 93%, Lag= 248.5 min
Primary = 0.3 cfs @ 16.15 hrs, Volume= 0.741 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 153.50' Surf.Area= 2,120 sf Storage= 4,391 cf
Peak Elev= 156.51' @ 16.15 hrs Surf.Area= 12,806 sf Storage= 23,867 cf (19,476 cf above start)
Flood Elev= 158.25' Surf.Area= 20,720 sf Storage= 49,294 cf (44,903 cf above start)

Plug-Flow detention time= 1,106.7 min calculated for 0.640 af (83% of inflow)
Center-of-Mass det. time= 862.0 min (1,636.2 - 774.2)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	688 cf	**Forebay Subcat 6 (Irregular)** Listed below (Recalc)
#2	153.50'	488 cf	**Forebay Subcat. 5 (Irregular)** Listed below (Recalc)
#3	156.00'	298 cf	**Forebay DMH2 (Irregular)** Listed below (Recalc)
#4	150.00'	47,821 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		49,294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
154.00	121	48.0	0	0	121
156.00	634	107.3	688	688	870

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.50	99	39.6	0	0	99
155.50	427	74.8	488	488	439

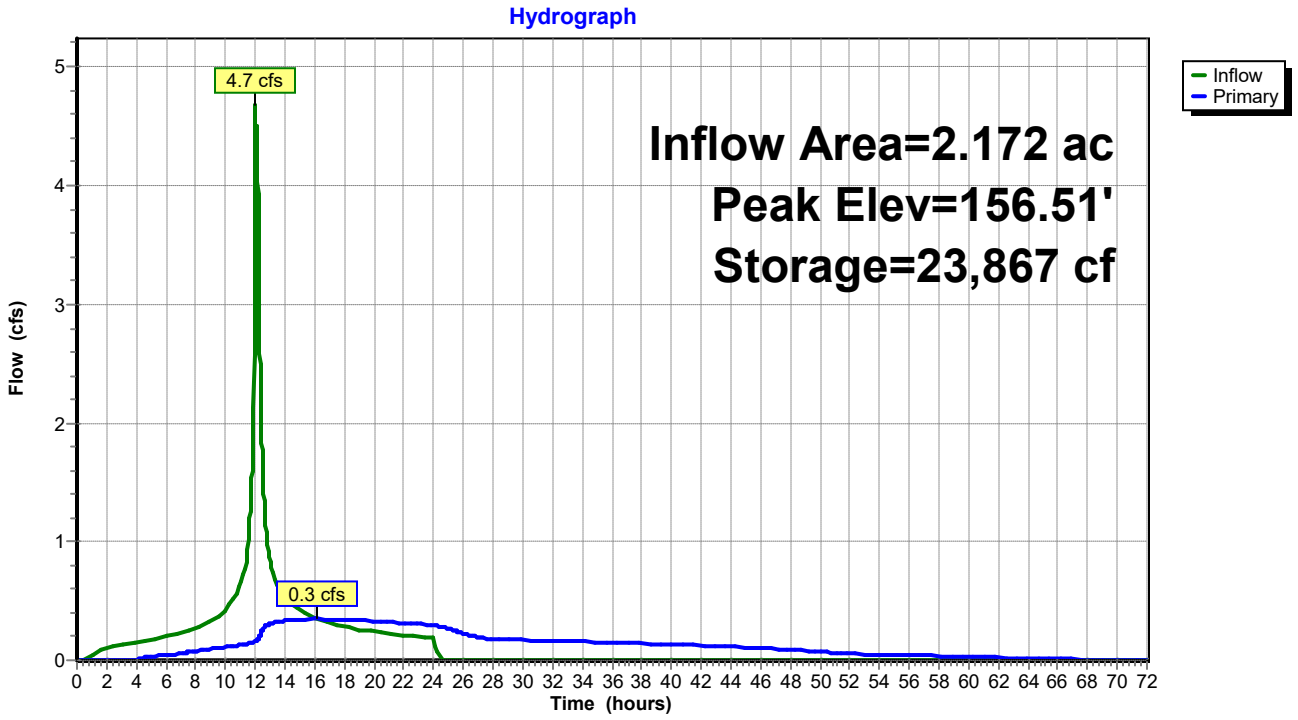
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	29	22.9	0	0	29
158.00	321	58.5	298	298	274

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	609	102.0	0	0	609
152.00	1,332	139.0	1,894	1,894	1,358
154.00	2,282	177.0	3,572	5,466	2,365
156.00	10,250	441.0	11,579	17,045	15,363
158.00	16,309	1,000.0	26,326	43,371	79,480
158.25	19,338	1,019.0	4,451	47,821	82,543

Device	Routing	Invert	Outlet Devices
#1	Primary	153.90'	**15.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 153.90' / 153.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	154.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	154.50'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	156.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	157.15'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.3 cfs @ 16.15 hrs HW=156.51' TW=153.65' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.3 cfs of 8.3 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 7.54 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.1 cfs @ 6.72 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 0.1 cfs @ 3.00 fps)
  └─**5=Orifice/Grate** (Controls 0.0 cfs)

Pond WP1: Wet Pond 1

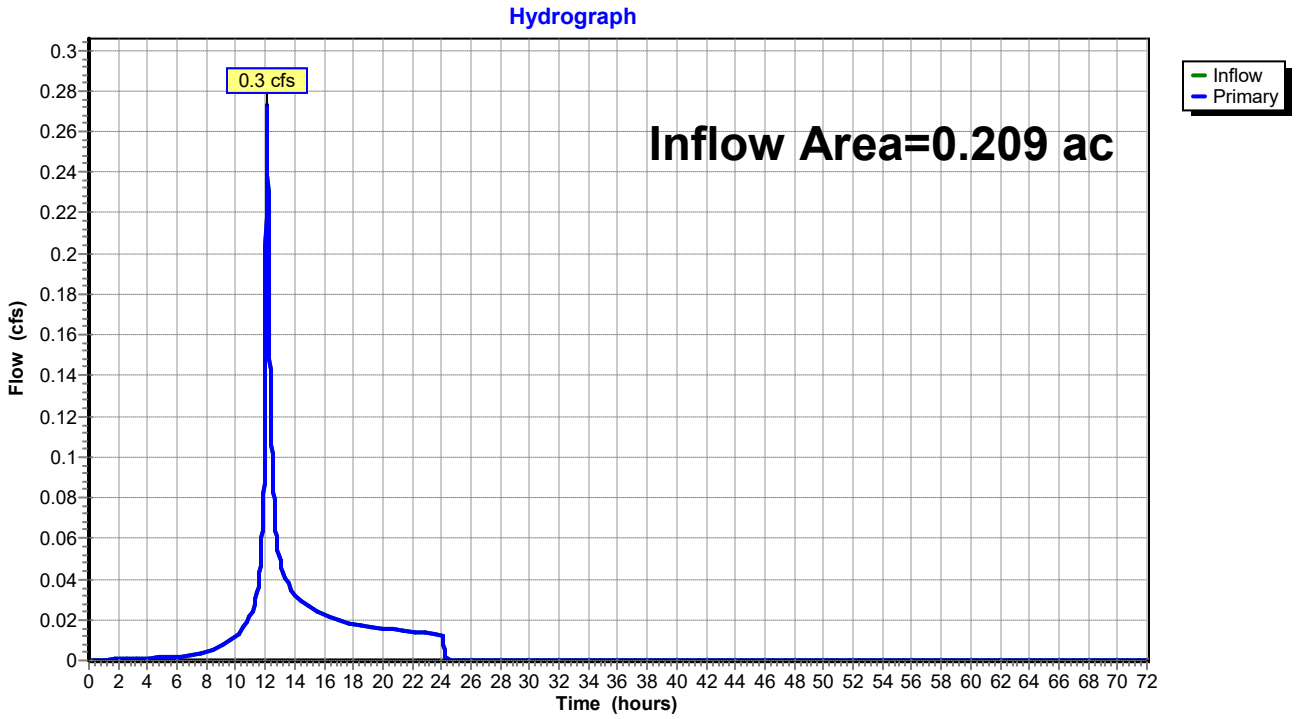


Summary for Link A: A

Inflow Area = 0.209 ac, 5.68% Impervious, Inflow Depth = 2.06" for 10-yr event
Inflow = 0.3 cfs @ 12.12 hrs, Volume= 0.036 af
Primary = 0.3 cfs @ 12.12 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link A: A

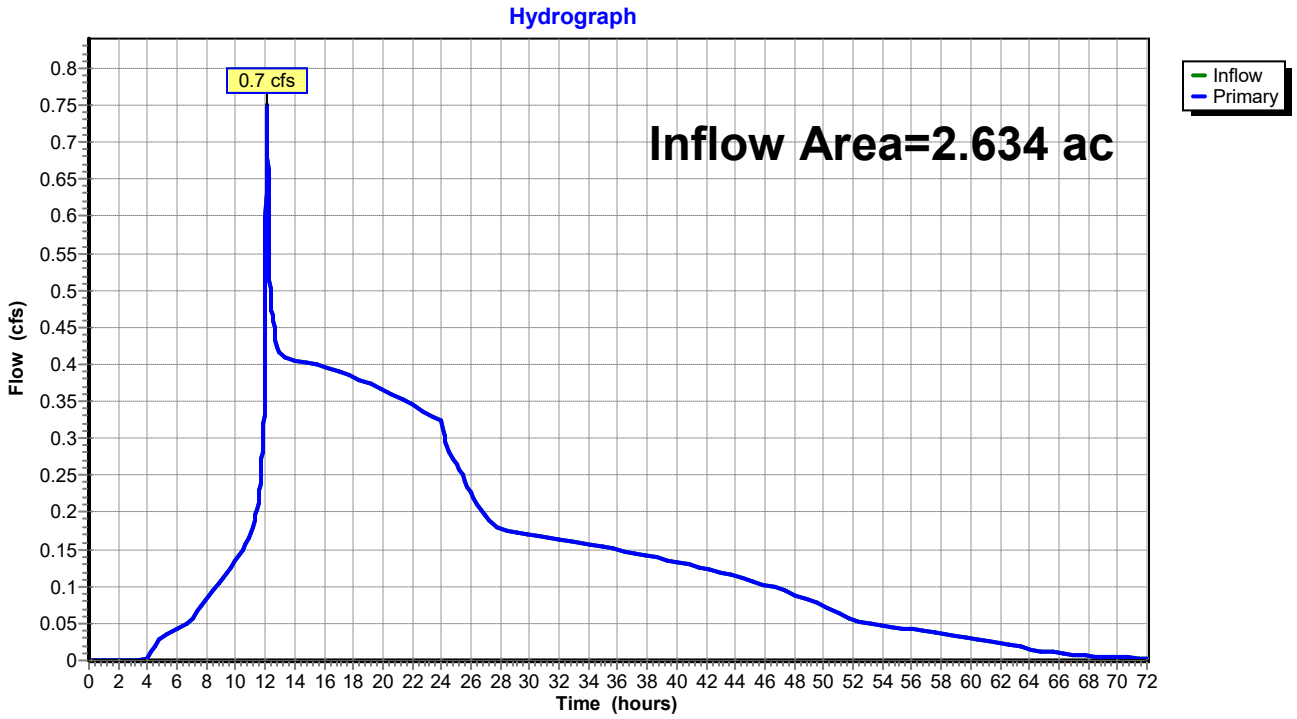


Summary for Link B: B

Inflow Area = 2.634 ac, 56.73% Impervious, Inflow Depth > 3.72" for 10-yr event
Inflow = 0.7 cfs @ 12.12 hrs, Volume= 0.816 af
Primary = 0.7 cfs @ 12.12 hrs, Volume= 0.816 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link B: B

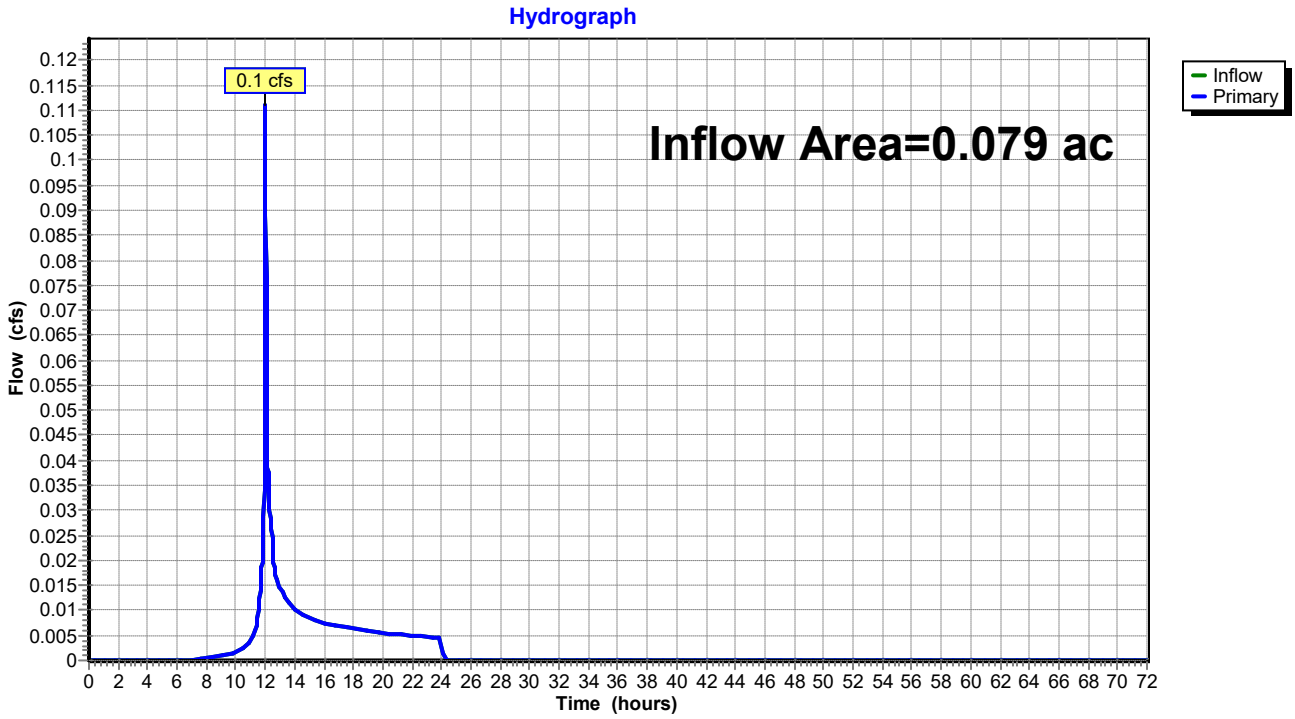


Summary for Link C: C

Inflow Area = 0.079 ac, 0.00% Impervious, Inflow Depth = 1.59" for 10-yr event
Inflow = 0.1 cfs @ 12.01 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.01 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link C: C

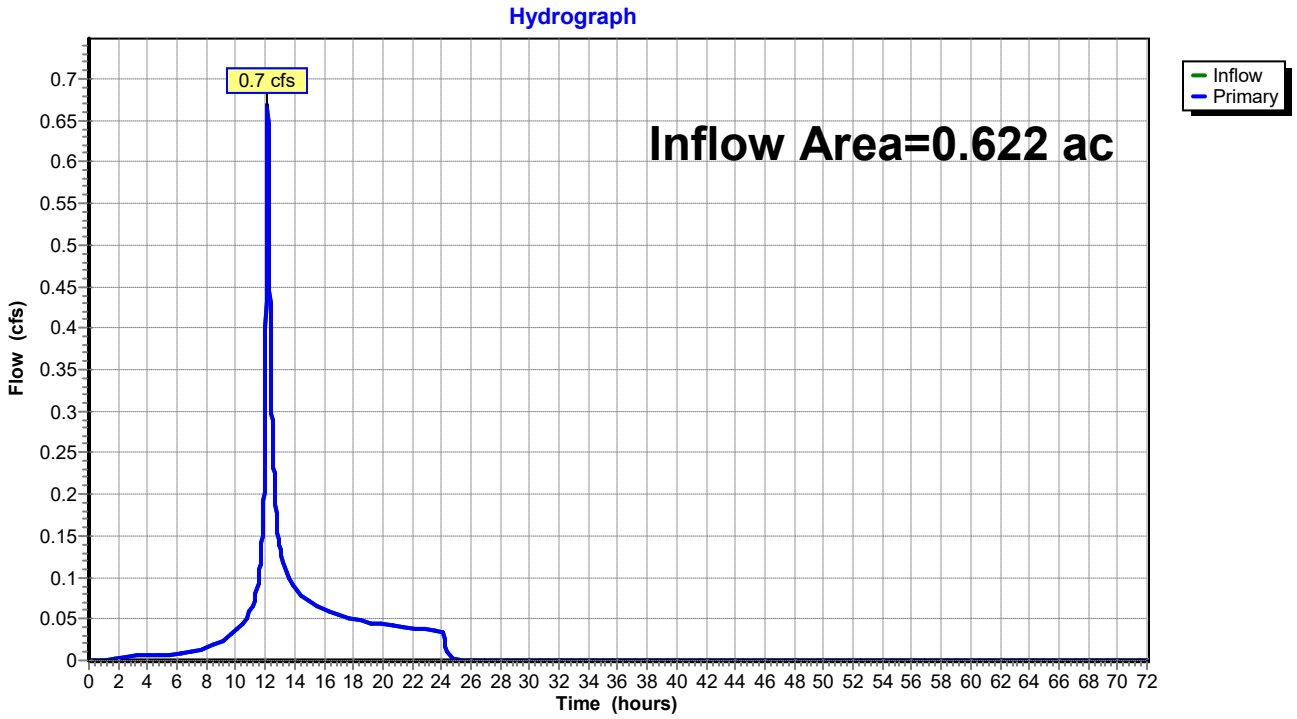


Summary for Link D: D

Inflow Area = 0.622 ac, 9.66% Impervious, Inflow Depth = 1.90" for 10-yr event
Inflow = 0.7 cfs @ 12.16 hrs, Volume= 0.099 af
Primary = 0.7 cfs @ 12.16 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link D: D



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-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=12,127 sf 21.56% Impervious Runoff Depth=2.75"
Flow Length=129' Tc=11.3 min CN=WQ Runoff=0.4 cfs 0.064 af

Subcatchment 2: 2 Runoff Area=4,042 sf 100.00% Impervious Runoff Depth=6.61"
Flow Length=186' Slope=0.0420 '/' Tc=1.2 min CN=WQ Runoff=0.5 cfs 0.051 af

Subcatchment 3: 3 Runoff Area=6,681 sf 93.98% Impervious Runoff Depth=6.26"
Flow Length=65' Tc=1.9 min CN=WQ Runoff=0.8 cfs 0.080 af

Subcatchment 4: 4 Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=6.61"
Flow Length=25' Tc=2.0 min CN=98 Runoff=0.3 cfs 0.032 af

Subcatchment 5: 5 Runoff Area=20,625 sf 100.00% Impervious Runoff Depth=6.61"
Flow Length=75' Tc=2.0 min CN=WQ Runoff=2.5 cfs 0.261 af

Subcatchment 6: 6 Runoff Area=67,439 sf 56.23% Impervious Runoff Depth=5.14"
Flow Length=420' Tc=13.3 min CN=WQ Runoff=4.3 cfs 0.663 af

Subcatchment 7: 7 Runoff Area=20,130 sf 0.00% Impervious Runoff Depth=2.90"
Flow Length=70' Tc=11.8 min CN=WQ Runoff=0.8 cfs 0.112 af

Subcatchment 8: 8 Runoff Area=14,946 sf 0.00% Impervious Runoff Depth=2.84"
Flow Length=189' Tc=13.9 min CN=WQ Runoff=0.5 cfs 0.081 af

Subcatchment 9: 9 Runoff Area=3,420 sf 0.00% Impervious Runoff Depth=2.53"
Flow Length=21' Tc=3.1 min CN=WQ Runoff=0.2 cfs 0.017 af

Subcatchment 10: 10 Runoff Area=9,084 sf 5.68% Impervious Runoff Depth=3.02"
Flow Length=208' Tc=12.0 min CN=WQ Runoff=0.4 cfs 0.053 af

Reach R1: Reach R1 Avg. Flow Depth=0.18' Max Vel=0.53 fps Inflow=0.8 cfs 0.083 af
n=0.069 L=10.0' S=0.0100 '/' Capacity=6.9 cfs Outflow=0.8 cfs 0.083 af

Reach R2: Reach R2 Avg. Flow Depth=0.17' Max Vel=0.34 fps Inflow=0.4 cfs 0.977 af
n=0.069 L=11.0' S=0.0045 '/' Capacity=4.6 cfs Outflow=0.4 cfs 0.977 af

Reach R3: Reach R3 Avg. Flow Depth=0.16' Max Vel=0.89 fps Inflow=0.4 cfs 0.064 af
n=0.080 L=133.0' S=0.0451 '/' Capacity=19.7 cfs Outflow=0.4 cfs 0.064 af

Pond CB1: CB1 Peak Elev=164.32' Inflow=0.5 cfs 0.051 af
15.0" Round Culvert n=0.012 L=36.0' S=0.0111 '/' Outflow=0.5 cfs 0.051 af

Pond DMH1: DMH1 Peak Elev=163.82' Inflow=0.5 cfs 0.051 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.5 cfs 0.051 af

Pond DMH2: DMH2 Peak Elev=161.42' Inflow=0.8 cfs 0.083 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0500 '/' Outflow=0.8 cfs 0.083 af

Pond P1: Pipe 1 Peak Elev=165.79' Storage=58 cf Inflow=0.4 cfs 0.064 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.4 cfs 0.064 af

Pond PP1: Pourous Pave 1 Peak Elev=165.25' Storage=332 cf Inflow=0.8 cfs 0.080 af
Outflow=0.2 cfs 0.080 af

Pond RD1: RD1 Peak Elev=164.89' Inflow=0.3 cfs 0.032 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0100 '/' Outflow=0.3 cfs 0.032 af

Pond RD2: RD2 Peak Elev=158.07' Inflow=2.5 cfs 0.261 af
12.0" Round Culvert n=0.012 L=300.0' S=0.0033 '/' Outflow=2.5 cfs 0.261 af

Pond WP1: Wet Pond 1 Peak Elev=156.99' Storage=29,753 cf Inflow=5.7 cfs 1.007 af
Outflow=0.4 cfs 0.977 af

Link A: A Inflow=0.4 cfs 0.053 af
Primary=0.4 cfs 0.053 af

Link B: B Inflow=1.1 cfs 1.089 af
Primary=1.1 cfs 1.089 af

Link C: C Inflow=0.2 cfs 0.017 af
Primary=0.2 cfs 0.017 af

Link D: D Inflow=0.9 cfs 0.145 af
Primary=0.9 cfs 0.145 af

Total Runoff Area = 3.696 ac Runoff Volume = 1.413 af Average Runoff Depth = 4.59"
53.73% Pervious = 1.986 ac 46.27% Impervious = 1.710 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-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=12,127 sf 21.56% Impervious Runoff Depth=3.60"
Flow Length=129' Tc=11.3 min CN=WQ Runoff=0.5 cfs 0.084 af

Subcatchment 2: 2 Runoff Area=4,042 sf 100.00% Impervious Runoff Depth=7.94"
Flow Length=186' Slope=0.0420 '/' Tc=1.2 min CN=WQ Runoff=0.6 cfs 0.061 af

Subcatchment 3: 3 Runoff Area=6,681 sf 93.98% Impervious Runoff Depth=7.54"
Flow Length=65' Tc=1.9 min CN=WQ Runoff=0.9 cfs 0.096 af

Subcatchment 4: 4 Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=7.94"
Flow Length=25' Tc=2.0 min CN=98 Runoff=0.3 cfs 0.038 af

Subcatchment 5: 5 Runoff Area=20,625 sf 100.00% Impervious Runoff Depth=7.94"
Flow Length=75' Tc=2.0 min CN=WQ Runoff=2.9 cfs 0.313 af

Subcatchment 6: 6 Runoff Area=67,439 sf 56.23% Impervious Runoff Depth=6.35"
Flow Length=420' Tc=13.3 min CN=WQ Runoff=5.1 cfs 0.819 af

Subcatchment 7: 7 Runoff Area=20,130 sf 0.00% Impervious Runoff Depth=3.87"
Flow Length=70' Tc=11.8 min CN=WQ Runoff=1.0 cfs 0.149 af

Subcatchment 8: 8 Runoff Area=14,946 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=189' Tc=13.9 min CN=WQ Runoff=0.7 cfs 0.109 af

Subcatchment 9: 9 Runoff Area=3,420 sf 0.00% Impervious Runoff Depth=3.49"
Flow Length=21' Tc=3.1 min CN=WQ Runoff=0.2 cfs 0.023 af

Subcatchment 10: 10 Runoff Area=9,084 sf 5.68% Impervious Runoff Depth=3.99"
Flow Length=208' Tc=12.0 min CN=WQ Runoff=0.5 cfs 0.069 af

Reach R1: Reach R1 Avg. Flow Depth=0.20' Max Vel=0.56 fps Inflow=0.9 cfs 0.099 af
n=0.069 L=10.0' S=0.0100 '/' Capacity=6.9 cfs Outflow=0.9 cfs 0.099 af

Reach R2: Reach R2 Avg. Flow Depth=0.25' Max Vel=0.44 fps Inflow=1.0 cfs 1.200 af
n=0.069 L=11.0' S=0.0045 '/' Capacity=4.6 cfs Outflow=1.0 cfs 1.200 af

Reach R3: Reach R3 Avg. Flow Depth=0.18' Max Vel=0.96 fps Inflow=0.5 cfs 0.084 af
n=0.080 L=133.0' S=0.0451 '/' Capacity=19.7 cfs Outflow=0.5 cfs 0.084 af

Pond CB1: CB1 Peak Elev=164.35' Inflow=0.6 cfs 0.061 af
15.0" Round Culvert n=0.012 L=36.0' S=0.0111 '/' Outflow=0.6 cfs 0.061 af

Pond DMH1: DMH1 Peak Elev=163.85' Inflow=0.6 cfs 0.061 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.6 cfs 0.061 af

Pond DMH2: DMH2 Peak Elev=161.45' Inflow=0.9 cfs 0.099 af
15.0" Round Culvert n=0.012 L=60.0' S=0.0500 '/' Outflow=0.9 cfs 0.099 af

Pond P1: Pipe 1 Peak Elev=165.83' Storage=70 cf Inflow=0.5 cfs 0.084 af
15.0" Round Culvert n=0.012 L=92.0' S=0.0109 '/' Outflow=0.5 cfs 0.084 af

Pond PP1: Pourous Pave 1 Peak Elev=166.10' Storage=455 cf Inflow=0.9 cfs 0.096 af
Outflow=0.2 cfs 0.096 af

Pond RD1: RD1 Peak Elev=164.91' Inflow=0.3 cfs 0.038 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0100 '/' Outflow=0.3 cfs 0.038 af

Pond RD2: RD2 Peak Elev=158.57' Inflow=2.9 cfs 0.313 af
12.0" Round Culvert n=0.012 L=300.0' S=0.0033 '/' Outflow=2.9 cfs 0.313 af

Pond WP1: Wet Pond 1 Peak Elev=157.20' Storage=32,649 cf Inflow=6.7 cfs 1.232 af
Outflow=1.0 cfs 1.200 af

Link A: A Inflow=0.5 cfs 0.069 af
Primary=0.5 cfs 0.069 af

Link B: B Inflow=1.4 cfs 1.349 af
Primary=1.4 cfs 1.349 af

Link C: C Inflow=0.2 cfs 0.023 af
Primary=0.2 cfs 0.023 af

Link D: D Inflow=1.2 cfs 0.192 af
Primary=1.2 cfs 0.192 af

Total Runoff Area = 3.696 ac Runoff Volume = 1.761 af Average Runoff Depth = 5.72"
53.73% Pervious = 1.986 ac 46.27% Impervious = 1.710 ac

APPENDIX B

DESIGN

B – 1

STORMWATER BEST MANAGEMENT PRACTICES

STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **Wet Pond 1 (WP1)**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

2.17	ac	A = Area draining to the practice	
1.49	ac	A_I = Impervious area draining to the practice	
0.69	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.67	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.45	ac-in	WQV= 1" x Rv x A	
5,276	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
528	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
2,638	cf	50% x WQV (check calc for extended detention volume)	
1,474	cf	V_{SED} = Sediment forebay volume	**≥ 10%WQV**
5,466	cf	V_{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no		Extended Detention?[1]	**≤ 50% WQV**
-	cf	V_{ED} = Volume of extended detention (if "yes" is given in box above)	
		E_{ED} = Elevation of WQV if "yes" is given in box above[2]	
-	cfs	$2Q_{avg}$ = 2* V_{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q_{EDmax} below)	
	cfs	Q_{EDmax} = Discharge at the E_{ED} (attach stage-discharge table)	**< $2Q_{avg}$**
-	hours	T_{ED} = Drawdown time of extended detention = $2V_{ED}/Q_{EDmax}$	**≥ 24-hrs**
3.00	:1	Pond side slopes	**≥3:1**
154.75	ft	Elevation of seasonal high water table	
154.00	ft	Elevation of lowest pond outlet	
149.75	ft	Max floor = Maximum elevation of pond bottom (ft)	
146.00	ft	Minimum floor (to maintain depth at less than 8')	**≤ 8 ft**
150.00	ft	Elevation of pond floor[3]	**≤ Max floor and > Min floor**
240.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
70.00	ft	Average width ([average of the top width + average bottom width]/2)	
3.43	:1	Length to average width ratio	**≥ 3:1**
Yes	Yes/No	Is the perimeter curvilinear.	**← Yes**
Yes	Yes/No	Are the inlet and outlet located as far apart as possible.	**← Yes**
No	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:		The pond will be pumped if necessary	
Grate		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
157.20	ft	Peak elevation of the 50-year storm event	
158.25	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	**←yes**

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV **if** the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes: Sediment Forebay Calcs - % Watershed: Subcat 6 = 71%, Subcat 5 = 22%, & DMH2 = 7%.

Subcat 6: Req'd = 0.77*528cf = 407cf, provided = 688cf. Subcat 5: Req'd = 0.22*528cf = 116cf, provided = 488cf.

DMH2: Req'd = 0.07*528cf = 37cf, provided = 298cf.

Summary for Pond WP1: Wet Pond 1

[80] Warning: Exceeded Pond RD2 by 0.51' @ 24.09 hrs (0.5 cfs 0.013 af)

Inflow Area = 2.172 ac, 68.80% Impervious, Inflow Depth = 6.81" for 50-yr event
Inflow = 6.7 cfs @ 12.11 hrs, Volume= 1.232 af
Outflow = 1.0 cfs @ 13.41 hrs, Volume= 1.200 af, Atten= 84%, Lag= 78.2 min
Primary = 1.0 cfs @ 13.41 hrs, Volume= 1.200 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 153.50' Surf.Area= 2,120 sf Storage= 4,391 cf
Peak Elev= 157.20' @ 13.41 hrs Surf.Area= 14,943 sf Storage= 32,649 cf (28,258 cf above start)
Flood Elev= 158.25' Surf.Area= 20,720 sf Storage= 49,294 cf (44,903 cf above start)

Plug-Flow detention time= 976.6 min calculated for 1.099 af (89% of inflow)
Center-of-Mass det. time= 817.5 min (1,586.7 - 769.2)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	688 cf	**Forebay Subcat 6 (Irregular)** Listed below (Recalc)
#2	153.50'	488 cf	**Forebay Subcat. 5 (Irregular)** Listed below (Recalc)
#3	156.00'	298 cf	**Forebay DMH2 (Irregular)** Listed below (Recalc)
#4	150.00'	47,821 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		49,294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
154.00	121	48.0	0	0	121
156.00	634	107.3	688	688	870

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.50	99	39.6	0	0	99
155.50	427	74.8	488	488	439

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	29	22.9	0	0	29
158.00	321	58.5	298	298	274

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	609	102.0	0	0	609
152.00	1,332	139.0	1,894	1,894	1,358
154.00	2,282	177.0	3,572	5,466	2,365
156.00	10,250	441.0	11,579	17,045	15,363
158.00	16,309	1,000.0	26,326	43,371	79,480
158.25	19,338	1,019.0	4,451	47,821	82,543

Device	Routing	Invert	Outlet Devices
#1	Primary	153.90'	**15.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 153.90' / 153.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	154.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	154.50'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	156.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	157.15'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.0 cfs @ 13.41 hrs HW=157.20' TW=153.75' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.0 cfs of 9.7 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 8.53 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.1 cfs @ 7.82 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 0.2 cfs @ 4.99 fps)
  └─**5=Orifice/Grate** (Weir Controls 0.6 cfs @ 0.73 fps)

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Porous Pavement 1 (PP1)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.15	ac	A = Area draining to the practice	
0.14	ac	A_I = Impervious area draining to the practice	
0.94	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.90	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.14	ac-in	WQV= 1" x Rv x A	
498	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
124	cf	25% x WQV (check calc for sediment forebay volume)	
373	cf	75% x WQV (check calc for surface sand filter volume)	
N/A		Method of Pretreatment? (not required for clean or roof runoff)	
-	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
1,458	sf	A_{SA} = Surface area of the practice	
5.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
No	Yes/No	(Use the calculations below)	
0.8	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
165.23	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
161.70	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
161.70	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
165.23	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.53	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.53	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
166.10	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
166.73	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
Asphalt		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
0.0	acres	A_{SA} = Surface area of the pervious pavement	
4.6	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
18.0	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet	12	Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Summary for Pond PP1: Pourous Pave 1

Inflow Area = 0.153 ac, 93.98% Impervious, Inflow Depth = 7.54" for 50-yr event
Inflow = 0.9 cfs @ 12.00 hrs, Volume= 0.096 af
Outflow = 0.2 cfs @ 11.76 hrs, Volume= 0.096 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.2 cfs @ 11.76 hrs, Volume= 0.096 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 166.10' @ 12.42 hrs Surf.Area= 1,458 sf Storage= 455 cf
Flood Elev= 166.73' Surf.Area= 1,458 sf Storage= 547 cf

Plug-Flow detention time= 9.0 min calculated for 0.096 af (100% of inflow)
Center-of-Mass det. time= 9.0 min (749.8 - 740.8)

Volume	Invert	Avail.Storage	Storage Description
#1	164.48'	790 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)
164.48	1,458	198.0	0.0	0	0	1,458
164.98	1,458	198.0	35.0	255	255	1,557
165.23	1,458	198.0	20.0	73	328	1,607
166.73	1,458	198.0	10.0	219	547	1,904
167.07	1,458	198.0	20.0	99	646	1,971
167.40	1,458	198.0	30.0	144	790	2,036

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.48'	**5.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 11.76 hrs HW=164.51' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.2 cfs)

B – 2

GROUNDWATER RECHARGE

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

0.90	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
0.12	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.55	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.28	inches	Rd = Weighted groundwater recharge depth	
0.4432	ac-in	GRV = AI * Rd	
1,609	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Porous Pavement Area 1 (PP1) provides 0.040 af (~1,742 cf) of infiltration.

Summary for Pond PP1: Pourous Pave 1

Inflow Area = 0.153 ac, 93.98% Impervious, Inflow Depth = 3.16" for 2-yr event
Inflow = 0.5 cfs @ 12.00 hrs, Volume= 0.040 af
Outflow = 0.2 cfs @ 11.94 hrs, Volume= 0.040 af, Atten= 66%, Lag= 0.0 min
Discarded = 0.2 cfs @ 11.94 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 164.73' @ 12.12 hrs Surf.Area= 1,458 sf Storage= 128 cf
Flood Elev= 166.73' Surf.Area= 1,458 sf Storage= 547 cf

Plug-Flow detention time= 2.1 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 2.1 min (756.3 - 754.2)

Volume	Invert	Avail.Storage	Storage Description
#1	164.48'	790 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)
164.48	1,458	198.0	0.0	0	0	1,458
164.98	1,458	198.0	35.0	255	255	1,557
165.23	1,458	198.0	20.0	73	328	1,607
166.73	1,458	198.0	10.0	219	547	1,904
167.07	1,458	198.0	20.0	99	646	1,971
167.40	1,458	198.0	30.0	144	790	2,036

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.48'	**5.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.2 cfs @ 11.94 hrs HW=164.52' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.2 cfs)

Test Pit: A **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-2	10 YR 3/3	Fine Sandy Loam	Massive	Friable	None	
2-38	10 YR 4/6	Loamy Sand	Massive	Friable	None	
38-72	10 YR 4/4	Loamy Sand	Massive	Friable	None	Roots few,fine @ 43"

Seasonal High Water (in): 72
Observed Water (in): 72"+
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Gloucester
NHDES Soil Group: A
Hydrologic Soil Group: 1

Notes:

Depth Perc Test	Inches Per Hour
NA	NA

Test Pit: B **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-3	10 YR 3/3	Fine Sandy Loam	Massive	Friable		Woods
3-30	10 YR 4/6	Loamy Sand	Massive	Friable	15% Cobbles	Roots few,fine @ 29"
30-90	10 YR 4/3	Silt Loam	Blocky	Firm	30"+ 5YR 4/4	

Seasonal High Water (in): 30
Observed Water (in): 90"
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Elmwood
NHDES Soil Group: C
Hydrologic Soil Group: 3

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:



Stormwater Infiltration Testing Log

6/7/2022

Project Name:	Weave Filtration	**Date:**	6/7/2022
Project Address:	Quality Way	**Weather:**	Sunny, 81°
Testing Company:	Civilworks NE	**Tester's Name:**	**Guillermo M. Sepulveda**
Phone Number:	(603) 749-0443	**Email Address:**	gsepulveda@civilworksne.com

Test Number:	1	**Test Pit/Boring Hole Number:**	BH1	**Test Method:**	Borehole Infiltration Test
Test Depth (feet):	4	**Surface Elevation (feet):**	164	**Instrument Diameter (inches):**	4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:30AM	**0**	**24**	**0**
8:30AM	**24**	**0**	**24**

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:38PM		**24**			**Start**
	1:38PM		**24**	**24**	
1:56PM		**24**			
	2:56PM		**23**	**23**	
3:16PM		**24**			
	4:16PM		**23**	**23**	
4:18PM		**24**			
	5:18PM		**22.5**	**22.5**	**Finish**
	Stabilized Infiltration Testing Rate (inches per hour):			**22.5**	Using Trial 4

Notes:

Proposed parking lot area

Stormwater Infiltration Testing Log

6/7/2022

Project Name:	Weave Filtration	**Date:**	6/7/2022
Project Address:	Quality Way	**Weather:**	Sunny, 81°
Testing Company:	Civilworks NE	**Tester's Name:**	**Guillermo M. Sepulveda**
Phone Number:	(603) 749-0443	**Email Address:**	gsepulveda@civilworksne.com

Test Number:	2	**Test Pit/Boring Hole Number:**	BH2	**Test Method:**	Borehole Infiltration Test
Test Depth (feet):	1.5	**Surface Elevation (feet):**	164	**Instrument Diameter (inches):**	4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:36AM	**0**	**24**	**0**
8:36AM	**24**	**0**	**24**

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:41PM		**24**			**Start**
	1:11PM		**24**	**48**	
1:12PM		**24**			
	1:50PM		**24**	**37.89**	
1:57PM		**24**			
	2:38PM		**24**	**35.12**	
2:39PM		**24**			
	3:21PM		**24**	**34.29**	**Finish**
Stabilized Infiltration Testing Rate (inches per hour):				**34.29**	Using Trial 4

Notes:

Proposed parking lot area

B – 3

OUTLET PROTECTION

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 21094
Date: 6/16/2022
Structure: Outlet from DMH2

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:	158	
Tailwater elev:	158.2	
Tw:	0.2	
Q:	0.9	
D_0:	1.25	

Apron Dimensions

w_1=	**4**	(ft)
w_2=	**14**	(ft)
La=	**10**	(ft)

Apron Length:

Tw > .5D_0	Tw < .5D_0
La: 10.682	La: 9.909

Apron Width:

Tw > .5D_0	Tw < .5D_0
w_2: 8.02	w_2: 13.66

w_1: 3.75

w_1=	3.75
w_2=	13.6591776
La=	9.90917764

RipRap Sizing

d_{50}=	0.07	(ft)
d_{50}=	0.83	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.10	TO	0.14	100
0.09	TO	0.13	85
0.07	TO	0.10	50
0.02	TO	0.03	15

Minimum Depth of Rock= 0.21 (ft)

Summary for Pond DMH2: DMH2

Inflow Area = 0.150 ac,100.00% Impervious, Inflow Depth = 7.94" for 50-yr event
Inflow = 0.9 cfs @ 12.00 hrs, Volume= 0.099 af
Outflow = 0.9 cfs @ 12.00 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.00 hrs, Volume= 0.099 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 161.45' @ 12.00 hrs
Flood Elev= 168.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	**15.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 161.00' / 158.00' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.9 cfs @ 12.00 hrs HW=161.45' TW=158.20' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.9 cfs @ 2.29 fps)

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 21094
Date: 6/16/2022
Structure: Outlet from RD2
Rev: 7/22/2022

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:	155.5
Tailwater elev:	156.39
Tw:	0.89
Q:	2.9
D_0:	1

Apron Dimensions

w_1=	**3**	(ft)
w_2=	**10**	(ft)
La=	**16**	(ft)

Apron Length:

Tw > .5D_0	Tw < .5D_0
La: 15.700	La: 12.220

Apron Width:

Tw > .5D_0	Tw < .5D_0
w_2: 9.28	w_2: 15.22

w_1: 3

w_1=	3.00
w_2=	9.28
La=	15.7

RipRap Sizing

d_{50}=	0.09	(ft)
d_{50}=	1.12	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.14	TO	0.19	100
0.12	TO	0.17	85
0.09	TO	0.14	50
0.03	TO	0.05	15

Minimum Depth of Rock= 0.28 (ft)

Summary for Pond RD2: RD2

Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 7.94" for 50-yr event
Inflow = 2.9 cfs @ 12.00 hrs, Volume= 0.313 af
Outflow = 2.9 cfs @ 12.00 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min
Primary = 2.9 cfs @ 12.00 hrs, Volume= 0.313 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.57' @ 12.00 hrs
Flood Elev= 159.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	156.50'	**12.0" Round Culvert** L= 300.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 156.50' / 155.50' S= 0.0033 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.00 hrs HW=158.57' TW=156.39' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.9 cfs @ 3.66 fps)

OUTLET PROTECTION DESIGN CALCS

DEFINED CHANNEL

Job #: 21094
Date: 6/16/2022
Structure: Outlet from P1
Rev: 7/22/2022

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of outlet pipe (ft)
D= Width of channel (ft)
z= Channel side slope (H:V ft/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:	164.5
Tailwater elev:	164.68
Tw:	0.18
Q:	0.5
D_0:	1.25
D:	4
z:	3

Apron Dimensions

w_1=	**12**	(ft)
w_2=	**4**	(ft)
La=	**10**	(ft)

Apron Length:

$Tw > .5D_0$	$Tw < .5D_0$
La: 9.823	La: 9.394

Apron Width:

w_2: 4

w_1: 11.5

w_1=	11.50
w_2=	4.00
La=	9.39398758

RipRap Sizing

d_{50}=	0.04	(ft)
d_{50}=	0.42	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.05	TO	0.07	100
0.05	TO	0.06	85
0.04	TO	0.05	50
0.01	TO	0.02	15

Minimum Depth of Rock= 0.11 (ft)

Summary for Pond P1: Pipe 1

Inflow Area = 0.278 ac, 21.56% Impervious, Inflow Depth = 3.60" for 50-yr event
Inflow = 0.5 cfs @ 12.11 hrs, Volume= 0.084 af
Outflow = 0.5 cfs @ 12.13 hrs, Volume= 0.084 af, Atten= 3%, Lag= 1.6 min
Primary = 0.5 cfs @ 12.13 hrs, Volume= 0.084 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 165.83' @ 12.13 hrs Surf.Area= 269 sf Storage= 70 cf
Flood Elev= 168.00' Surf.Area= 3,506 sf Storage= 4,546 cf

Plug-Flow detention time= 5.9 min calculated for 0.084 af (100% of inflow)
Center-of-Mass det. time= 5.7 min (837.0 - 831.3)

Volume	Invert	Avail.Storage	Storage Description
#1	165.50'	4,546 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
165.50	154	52.2	0	0	154
166.00	339	71.1	120	120	342
167.00	2,700	259.1	1,332	1,452	5,285
168.00	3,506	278.0	3,094	4,546	6,136

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round Culvert** L= 92.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.50' / 164.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.5 cfs @ 12.13 hrs HW=165.83' TW=164.68' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.5 cfs @ 1.96 fps)

OUTLET PROTECTION DESIGN CALCS

DEFINED CHANNEL

Job #: 21094
Date: 6/16/2022
Structure: Outlet from WP1
Rev: 7/22/2022

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of outlet pipe (ft)
D= Width of channel (ft)
z= Channel side slope (H:V ft/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:	153.5
Tailwater elev:	153.75
Tw:	0.25
Q:	1
D_0:	1.25
D:	3
z:	3

Apron Dimensions

w_1=	**11**	(ft)
w_2=	**3**	(ft)
La=	**11**	(ft)

Apron Length:

$Tw > .5D_0$	$Tw < .5D_0$
La: 10.897	La: 10.038

Apron Width:

w_2: 3

w_1: 10.5

w_1=	10.50
w_2=	3.00
La=	10.0379752

RipRap Sizing

d_{50}=	0.06	(ft)
d_{50}=	0.77	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.10	TO	0.13	100
0.08	TO	0.12	85
0.06	TO	0.10	50
0.02	TO	0.03	15

Minimum Depth of Rock= 0.19 (ft)

Summary for Pond WP1: Wet Pond 1

[80] Warning: Exceeded Pond RD2 by 0.51' @ 24.09 hrs (0.5 cfs 0.013 af)

Inflow Area = 2.172 ac, 68.80% Impervious, Inflow Depth = 6.81" for 50-yr event
Inflow = 6.7 cfs @ 12.11 hrs, Volume= 1.232 af
Outflow = 1.0 cfs @ 13.41 hrs, Volume= 1.200 af, Atten= 84%, Lag= 78.2 min
Primary = 1.0 cfs @ 13.41 hrs, Volume= 1.200 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 153.50' Surf.Area= 2,120 sf Storage= 4,391 cf
Peak Elev= 157.20' @ 13.41 hrs Surf.Area= 14,943 sf Storage= 32,649 cf (28,258 cf above start)
Flood Elev= 158.25' Surf.Area= 20,720 sf Storage= 49,294 cf (44,903 cf above start)

Plug-Flow detention time= 976.6 min calculated for 1.099 af (89% of inflow)
Center-of-Mass det. time= 817.5 min (1,586.7 - 769.2)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	688 cf	**Forebay Subcat 6 (Irregular)** Listed below (Recalc)
#2	153.50'	488 cf	**Forebay Subcat. 5 (Irregular)** Listed below (Recalc)
#3	156.00'	298 cf	**Forebay DMH2 (Irregular)** Listed below (Recalc)
#4	150.00'	47,821 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		49,294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
154.00	121	48.0	0	0	121
156.00	634	107.3	688	688	870

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.50	99	39.6	0	0	99
155.50	427	74.8	488	488	439

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	29	22.9	0	0	29
158.00	321	58.5	298	298	274

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	609	102.0	0	0	609
152.00	1,332	139.0	1,894	1,894	1,358
154.00	2,282	177.0	3,572	5,466	2,365
156.00	10,250	441.0	11,579	17,045	15,363
158.00	16,309	1,000.0	26,326	43,371	79,480
158.25	19,338	1,019.0	4,451	47,821	82,543

Device	Routing	Invert	Outlet Devices
#1	Primary	153.90'	**15.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 153.90' / 153.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	154.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	154.50'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	156.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	157.15'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

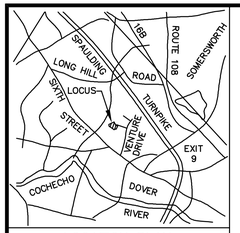
Primary OutFlow Max=1.0 cfs @ 13.41 hrs HW=157.20' TW=153.75' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.0 cfs of 9.7 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 8.53 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.1 cfs @ 7.82 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 0.2 cfs @ 4.99 fps)
  └─**5=Orifice/Grate** (Weir Controls 0.6 cfs @ 0.73 fps)

APPENDIX C

WATERSHED PLANS

C – 1

PRE-DEVELOPMENT CONDITIONS



LOCATION PLAN
(NO SCALE)

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.21	166	12.6
2	1.06	232	17.0
3	0.67	235	19.3
4	1.75	374	20.7

DISCHARGE PT. A

DISCHARGE PT. B

DISCHARGE PT. C

DISCHARGE PT. D

QUALITY WAY

F.E.S. #4

CB #4

A

B

C

D

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF PAVEMENT
- EDGE OF WETLAND
- EXISTING TREELINE
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (A) SUBCATCHMENT DESIGNATION

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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	7-28-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO: 21094
FILE: DRN

PRE-DEVELOPMENT WATERSHED PLAN

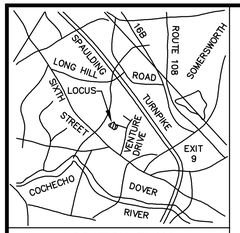
APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

WS-1

C – 2

POST-DEVELOPMENT CONDITIONS



LOCATION PLAN
(NO SCALE)

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.28	129	11.3
2	0.09	186	1.2
3	0.15	65	1.9
4	0.06	25	2.0
5	0.47	75	2.0
6	1.55	420	13.3
7	0.46	70	11.8
8	0.34	189	13.9
9	0.08	21	3.1
10	0.21	208	12.0

DISCHARGE PT. A
DISCHARGE PT. B
DISCHARGE PT. C
DISCHARGE PT. D
REACH R1
REACH R2
REACH R3
DMH1
DMH2
RD1
RD2
CB1
CB #4
POROUS PAVEMENT 1
PROPOSED PIPE 1
WET POND 1
QUALITY WAY

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- PROPOSED BUILDING
- EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EDGE OF WETLAND / SOIL DELINEATION
- EXISTING TREELINE
- PROPOSED TREELINE
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (1) SUBCATCHMENT DESIGNATION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY
PLANNING FILE NO.: P22-47

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	7-28-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO: 21094
FILE: DRN

POST-DEVELOPMENT WATERSHED PLAN

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

WS-2

SITE PLAN
FOR
WEAVE FILTRATION

TAX MAP D, LOT 11-7

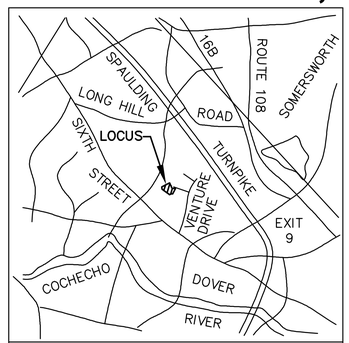
QUALITY WAY

DOVER, NH

JUNE 16, 2022

REV: JULY 28, 2022

REV: SEPTEMBER 1, 2022



LOCATION PLAN
(NO SCALE)

OWNER
DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY
f/k/a DOVER INDUSTRIAL DEVELOPMENT AUTHORITY (D.I.D.A)
288 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

_____ DATE

APPLICANT
WEAVE FILTRATION LLC
100 TRI–CITY ROAD, UNIT 117
SOMERSWORTH, NH 03878

_____ DATE

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 681
24 CHESTNUT STREET
DOVER, NH 03820
(603) 742–0911

ARCHITECT
JOHN M. TUTTLE, ARCHITECT #04015
TW DESIGNS, LLC
254 DRAKE ROAD
STRAFFORD, NH 03884
(603) 664–2181

LANDSCAPE ARCHITECT
JEFFREY R. HYLAND, LANDSCAPE ARCHITECT #00026
IRONWOOD DESIGN GROUP, LLC
PO BOX 873
EXETER, NH 03822
(603) 772–0590

WETLAND SCIENTIST
DAMON E. BURT, CWS #00163
FRAGGLE ROCK ENVIRONMENTAL
38 GARLAND ROAD
STRAFFORD, NH 03884
(603) 969–5574

SOIL SCIENTIST
JOHN P. HAYES, III, CSS #00087
7 LIMESTONE WAY
NORTH HAMPTON, NH 03862
(603) 205–4396

SHEET INDEX	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	3
NOTE SHEET	4
DEMOLITION PLAN	5
SITE PLAN	6
GRADING, DRAINAGE & EROSION CONTROL PLAN	7
UTILITY PLAN	8
EROSION CONTROL NOTES	9
DETAIL SHEETS	10-18
LIGHTING PLAN	19
LIGHTING DETAILS	20
DOVER LADDER TRUCK MOVEMENT PLAN	21
TRUCK MOVEMENT PLAN	22
SITE SPECIFIC SOILS	23
TEST PIT LOGS	24
ARCHITECTURAL PLANS	
FLOOR PLAN	A1.1
EXTERIOR ELEVATIONS	A3.1
STREET VIEW	R1
LANDSCAPE PLANS	
LANDSCAPE PLAN	L1.0
LANDSCAPE DETAILS	L2.0

PLANNING FILE NO.: P22–47



ABUTTERS LIST
(WITHIN 200 FT)

	TAX MAP	LOT NO.	NAME & ADDRESS
D 11-007	D	11-007	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-007SN1	D	11-007SN1	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-006	D	11-006	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-004	D	11-004	QUALITY WAY, LLC 55 MAIN STREET UNIT 407 NEWMARKET, NH 03857
D 11-001	D	11-001	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-008	D	11-008	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
D 11-007SN2	D	11-007SN2	DOVER BUSINESS & IND DEV AUTHORITY, F/K/A DOVER IND DEV AUTHORITY 288 CENTRAL AVE DOVER, NH 03820
A 49-013	A	49-013	PORTER DOUGLAS W & PORTER YUKARI 29 QUAIL DRIVE DOVER, NH 03820
D 12	D	12	TSB PROPERTIES LLC 385 SIXTH STREET DOVER, NH 03820
D 13-003	D	13-003	SARNIA PROPERTIES INC. 1 HAVEN COURT PORTSMOUTH, NH 03801

D / 11 — TAX MAP / LOT NUMBER

MAGNETIC

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

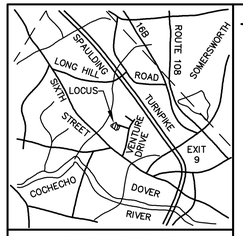
DATE: 6-16-22
SCALE: 1"=200'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO: 21094
FILE: SITE.DWG

NEIGHBORHOOD PLAN

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

2



LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER & Co., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY, TAX MAP D, LOT Nos. 9A & 11–1, VENTURE DRIVE AND QUALITY WAY, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: FEBRUARY 14, 2006, REVISED THROUGH 5/3/06; BY THIS OFFICE. RECORDED S.C.R.D. PLANS 85–99 & 85–100.

2.) ROADWAY AS–BUILT PLAN & PROFILE PREPARED FOR DOVER INDUSTRIAL DEVELOPMENT AUTHORITY, QUALITY WAY AT VENTURE DRIVE, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1" = 40'; DATED: JANUARY 16, 2006, REVISED THROUGH 3/16/06; BY: McENEANEY SURVEY ASSOCIATES, INC. ON FILE WITH CITY OF DOVER ENGINEERING DEPARTMENT.

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	24°49'33"	253.78	109.96	109.10	S42°54'51"E
C2	117°00'00"	75.00	153.15	127.90	S55°26'12"E
C3	42°01'29"	100.00	73.35	71.71	N87°04'33"E

No.	Bearing	Distance
L1	N79°03'39"W	40.33'
L2	N55°16'35"W	17.58'

SEWER STRUCTURE SCHEDULE

SMH #4351
RIM = 171.7'
INV. IN = 160.3'
INV. OUT = 160.2'

SMH #4352
RIM = 170.3'
INV. IN = 161.1'
INV. OUT = 161.0'

DRAINAGE STRUCTURE SCHEDULE

CB #4
RIM = 176.8'
INV. = 172.8'
SUMP = 169.8'

FES #4
INV. = 173.0'

D / 11–8 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

I.R. (fnd)

S30°30'05"E 55.67'

D / 11–1 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

D/11–7–SND2 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

N51°47'03"E 374.67'

EDGE OF WETLAND (TYP.)

50' WETLAND SETBACK (TYP.)

CITY / GEOD CORP. GRID NORTH

D / 11–8 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

N20°59'57"W 106.19'

I.R.(fnd)

A / 49–13 — DOUGLAS PORTER, 29 QUAIL DRIVE, DOVER, NH, 4600 / 780, SCRD PLAN 38–129

D.H.(fnd)

BUILDING SETBACK LINE (TYP.)

N66°19'06"W 238.64'

D / 12 — TSB PROPERTIES, LLC, 385 SIXTH STREET, DOVER, NH 03820, 4545 / 961

I.P. (fnd) N – 264,314.852 E – 700,742.376 (SEE NOTE 7)

I.P.(fnd) I.P.(fnd) I.P.(fnd)

N65°42'45"W 123.03'

D / 11–7

D / 11–4 — QUALITY WAY, LLC, 1 QUALITY WAY ENTERPRISE PARK, DOVER, NH 03820, 3973 / 254

EDGE OF PAVEMENT

SMH #4352

8"S

QUALITY WAY

ELECTRIC CABINET 5C/SC9 TBM NORTHEAST CORNER CONCRETE ELEVATION = 170.75'

END GAS

GAS – 4" SLEEVE

SMH #4351

F.E.S. #4

CB #4

U/GT,E

4" W

6" S

C1

C2

C3

TREELINE (TYP.)

SGC

6" SEWER SERVICE INV. = 162.19' 4" WATER SERVICE

CONCRETE BASE FOR LIGHT POLE

TPIT LP1

TPIT LP2

TPIT LP3

TPIT LP4

TPIT LP5

TPIT LP6

TPIT LP7

TPIT LP8

SOIL TEST PIT (TYP.)

D / 11–6 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

S15°29'11"W 249.85'

D.H. (fnd) N – 264,264.247 E – 700,854.518 (SEE NOTE 7)

S55°43'12"W 102.08'

L1

L2

I.R.(fnd)

D/11–7–SND1 — DBIDA, 288 CENTRAL AVENUE, DOVER, NH 03820, 1559 / 394

D / 13–3 — SARNIA PROPERTIES, INC, 1 HAVEN COURT, PORTSMOUTH, NH 03801, 4850 / 405, SCRD PLAN 50–52

NOTES:

1.) OWNERS OF RECORD:

DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY
f/k/a DOVER INDUSTRIAL DEVELOPMENT AUTHORITY (D.I.D.A.)
288 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 1559 / 394
TITLE REF. SEE SCRD 1738 / 130, 1027 / 790, 773 / 481

2.) D / 11–7 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PLAN INTENT: TO SHOW THE SITE EXISTING CONDITIONS.

4.) PARCEL AREA = 152,004 S.F. / 3.49 Ac.

5.) ZONING DISTRICT IS INNOVATIVE TECHNOLOGY (IT)

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 2 ACRES
MINIMUM LOT COVERAGE	= 33 PERCENT
MINIMUM FRONTAGE	= 200 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 50 FEET
SIDE SETBACK	= 50 FEET
REAR SETBACK	= 50 FEET
MAXIMUM BUILDING HEIGHT	= 55 FEET MAXIMUM

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; PANEL 0310; SUFFIX E; MAP NUMBER 33017C0310E; EFFECTIVE DATE SEPTEMBER 30, 2015.

7.) BASIS OF BEARING IS THE CITY OF DOVER / GEOD CORP. GRID PER REFERENCE PLAN No. 1. (G.I.S. STATIONS TR 390 AND TR 391A) VERTICAL DATUM IS CITY OF DOVER / GEOD CORP. PER CITY G.I.S. STATIONS TR 390 AND TR 391A.

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

9.) WETLANDS SHOWN WERE IDENTIFIED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES ON JUNE 6, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND.

10.) BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

11.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND.

12.) THE PARCEL IS SERVED BY MUNICIPAL SEWER AND WATER.

13.) TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS BY THIS OFFICE..

14.) LOT D/11–7 WAS CREATED USING THE CITY OF DOVER TDR ORDINANCE.

STATE OF NEW HAMPSHIRE — DAMON E. BURT — No. 163 — CERTIFIED WETLAND SCIENTIST — 9/2/22

LEGEND

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
– STONE WALL
– EDGE OF WET
f/k/a – FORMERLY KNOWN AS
D.H. (fnd) – DRILL HOLE FOUND
I.P. (fnd) – IRON PIPE FOUND
I.R. (fnd) – IRON ROD FOUND

□ CB – CATCH BASIN
F.E.S. – FLARED END SECTION
RCP – REINFORCED CONCRETE PIPE
Ⓢ SMH – SANITARY SEWER MANHOLE
8"S – SANITARY SEWER MAIN PIPE AND SIZE
S – SANITARY SEWER SERVICE
W – WATER MAIN PIPE AND SIZE
W – WATER SERVICE
WV – WATER GATE VALVE
G – GAS MAIN
U/G E,T,C – UNDERGROUND ELECTRIC, TELEPHONE AND CABLE BROADBAND
174 – EXISTING CONTOUR (2 FOOT INTERVAL)
SGC – SLOPED GRANITE CURB

NO.	DATE	DESCRIPTION	BY	CHK
2	7/28/22	REVISE PER CITY COMMENTS	RJM	KMM
1	6/9/22	UPDATE WETLANDS AND NOTE 9	RJM	KMM

REVISIONS

22–2415	EXIST. COND.	00–1, 05–8	60–63
PROJECT NO	TYPE	FIELDBOOK & PAGES	

THE SOIL TYPE ON THE SITE IS:
GsC GLOUCESTER VERY STONY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES

THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http: //websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

"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

EXISTING CONDITIONS PLAN OF LAND
PREPARED FOR
DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY
TAX MAP D, LOT No. 11–7
QUALITY WAY
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22–47

DRAWN BY: RJM	FILE: 2415\DWGS\22–2415ECGEOD
SCALE: 1" = 30'	DATE: FEBRUARY 10, 2022

30 15 0 15 30 60 90 120

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911

SURVEYING – PLANNING – CONSULTING

9/2/2022 10:10:34 File: \\CNEserver1\MSA Projects\2415\Drawings\22.2415 EC GEOD.dwg Layout: 2415 EC

GENERAL NOTES:

1. OWNERS OF RECORD:

   DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY
   f/k/a DOVER INDUSTRIAL DEVELOPMENT AUTHORITY (D.I.D.A.)
   288 CENTRAL AVENUE
   DOVER, NEW HAMPSHIRE 03820
   S.C.R.D. VOL. 1559 / 394
   TITLE REF. SEE SCRD 1738 / 130, 1027 / 790, 773 / 481

2. D/11-7 – DENOTES TAX MAP AND PARCEL NUMBER.

3. PARCEL AREA = 152,004 S.F. / 3.49 Ac.

4. ZONING DISTRICT IS INNOVATIVE TECHNOLOGY (IT)

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROVIDED
MINIMUM LOT SIZE	= 2 ACRES	3.49 ACRES
MAXIMUM LOT COVERAGE	= 33 PERCENT	15.2 PERCENT
MINIMUM FRONTAGE	= 200 FEET	226.5 FEET
MINIMUM OPEN SPACE	= 33 PERCENT	55.3 PERCENT
BUILDING SETBACK REQUIREMENTS:		
FRONT SETBACK	= 50 FEET	±57 FEET
SIDE SETBACK	= 50 FEET	±76 FEET
REAR SETBACK	= 50 FEET	± 140 FEET
MAXIMUM BUILDING HEIGHT	= 55 FEET MAX.	< 55 FEET

5. THE SUBJECT PARCEL IS LOCATED OUTSIDE OF THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0310; SUFFIX E; MAP NUMBER 33017C0310E; EFFECTIVE DATE SEPTEMBER 30, 2015.
6. BASIS OF BEARING IS THE CITY OF DOVER / GEOD CORP. GRID PER REFERENCE PLAN NO. 1. (G.I.S. STATIONS TR 390 AND TR 391A) VERTICAL DATUM IS CITY OF DOVER / GEOD CORP. PER CITY G.I.S. STATIONS TR 390 AND TR 391A.
7. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
8. WETLANDS SHOWN WERE IDENTIFIED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES ON JUNE 6, 2022 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND.
9. BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
10. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND.
11. THE PARCEL IS SERVED BY MUNICIPAL SEWER AND WATER.
12. TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS BY MCENEANEY SURVEY ON MARCH22, 2005 & APRIL 6, 2005.
13. LOT D/11-7 WAS CREATED USING THE CITY OF DOVER TDR ORDINANCE THROUGH THE AMENDED SUBDIVISION AND LOT LINE ADJUSTMENT PLAN PREPARED FOR GEORGE J. FOSTER & CO., INC. AND DOVER BUSINESS AND INDUSTRIAL DEVELOPMENT AUTHORITY, TAX MAP D, LOT NOS. 9A & 11-1, VENTURE DRIVE AND QUALITY WAY, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1"=100'; DATED: FEBRUARY 14, 2006, REVISED THROUGH 5-3-06; BY MCENEANEY SURVEY. RECORED S.C.R.D. PLANS 85-99 & 85-100.

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 THE REMOVED STONEWALL 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.
11. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.

PERMIT SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:

   WASTE WATER CONNECTION PERMIT: PENDING

   ALTERATION OF TERRAIN: 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.

   CONDITIONAL USE PERMIT: P22-48 PENDING

   SITE PLAN: P22-47: PENDING

3. WAIVERS REQUESTED:
   A WAIVER REQUEST FROM SECTION 153-14.H(1) TO ALLOW ACCESS FROM TWO DRIVEWAYS AND TO ALLOW THE DRIVEWAYS TO BE 90 FEET APART: PENDING

   A WAIVER REQUEST FROM SECTION 153-15.C(2) TO ALLOW PARKING IN FRONT OF THE BUILDING: PENDING

   A WAIVER REQUEST FOR PARKING SETBACK RELIEF TO 17.5 FEET FROM THE PROPERTY LINE PROVIDED THROUGH TDR: PENDING

SITE NOTES

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND (SEE EXISTING CONDITIONS PLAN IN THIS PLAN SET).
2. THE PURPOSE OF THIS PLAN IS TO DEPICT IMPROVEMENTS ASSOCIATED WITH A 23,125 S.F. COMMERCIAL BUILDING AND ASSOCIATED SITE IMPROVEMENTS.
3. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
5. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
6. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
7. SEE DETAILS FOR SIGN LEGENDS.
8. 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.
9. 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.
10. 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.
11. 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.
12. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
13. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS AND NH RSA 155-A:5. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
14. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
15. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
16. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER AND SEWER.
17. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBANCE ACTIVITY OCCURRING.
18. AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER 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.
19. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY 9 AM-4 PM. NO CONSTRUCTION SHALL OCCUR ON SUNDAY OR DURING FEDERAL HOLIDAY HOURS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT NFORMATION FOR THE GENERAL CONTRACTOR AND THE SIGN SHALL NOTE THAT THE ROADWAY IS PRIVATE. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.
20. 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.
21. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
22. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
23. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
24. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
    HTTP://WWW.UNH.EDU/UNHSC/PTAPP.
25. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
26. 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.
27. FIRE DEPARTMENT ACCESS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
28. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR AND WILL BE VIA DUMPSTER ON-SITE.
29. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED.
30. 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.

UTILITY NOTES

1. 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.
2. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
3. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SITE PLANS SHALL SHOW ANY EASEMENTS FOR THESE SERVICES.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER AND SEWER.
6. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
7. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
8. 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.
9. 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.
10. 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.
11. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
12. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
13. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
14. 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.
15. 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.
16. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY.
17. 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.
18. 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.
19. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
20. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
21. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER.
22. 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.
23. 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.
24. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
25. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
26. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE CITY AND STATE CODES.
27. A SECURITY ALARM SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 58, ARTICLE I, SECTION 58-2 OF THE CODE OF THE CITY OF DOVER.
28. 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.
29. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION.
30. THE STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 81-30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NEW HAMPSHIRE BUILDING & FIRE CODE.
31. 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.
32. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
33. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
34. SEWAGE LOADING (PER METCALF & EDDY)
    OFFICE: 15 EMPLOYEES X 10 GPD/EMPLOYEE = 150 GPD
    WAREHOUSES: 15 EMPLOYEES X 15 GPD/EMPLOYEE = 225 GPD
    TOTAL = 375 GPD

GRADING NOTES:

1. ALL ROAD DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".
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. 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.

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.
11. 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.
12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
13. 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 OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
14. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
15. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
16. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND PRIOR TO CONSTRUCTION.

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 HYPERLINK "MAILTO:NHFGREVIEW@WILDLIFE.NH.GOV" NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB22-1697, WEAVE FILTRATION LLC., WILDLIFE SPECIES OBSERVATION.
- 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.

UTILITY CONTACTS

NATURAL GAS: – UNITIL CORPORATION
CONTACT: DAVID MACLEAN
325 WEST ROAD
PORTSMOUTH, NH 03801
TEL: (603)-294-5261
EMAIL: MACLEAND@UNITIL.COM

WATER & SEWER: – CITY OF DOVER COMMUNITY SERVICES DEPARTMENT
PUBLIC WORKS & UTILITIES
CONTACT: KEN MAVROGEORGE, PE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)-516-6450
EMAIL: K.MAVROGEORGE@DOVER.NH.GOV

ELECTRIC: – EVERSOURCE
CONTACT: TREVER EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-7515
EMAIL: TREVER.EMMONS@EVERSOURCE.COM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

DATE	BY	DESCRIPTION	APP'D
9-1-22	SJH	REV. PER 2ND TRC COMMENTS	2
7-28-22	SJH	REV. PER TRC COMMENTS	1
DATE		REVISION	NO.

DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY: SJH
PROJECT NO: 21094
FILE: SITE.DWG

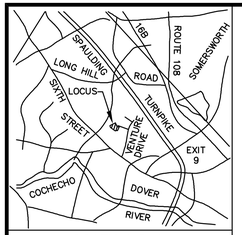
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

NOTE SHEET

4



LOCATION PLAN
(NO SCALE)

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D / 11-1

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D/11-7-SND2

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D / 11-8

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D / 11-7

D / 11-6

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

D/11-7-SND1

DBIDA
288 CENTRAL AVENUE
DOVER, NH 03820
1559 / 394

50' WETLAND SETBACK (TYP.)

EDGE OF WETLAND (TYP.)

ELECTRIC CABINET
SC/SCG
TBM NORTHEAST
CORNER CONCRETE
ELEVATION = 170.75'

EDGE OF PAVEMENT

TREELINE (TYP.)

SMH #4352

8"S

QUALITY WAY

END GAS

GAS – 4" SLEEVE

SMH #4351

4" W

U/GT,E

6" S

F.E.S. #4

CB #4

4" WATER SERVICE

6" SEWER SERVICE
INV. = 162.19'

PROPOSED TREELINE

TREELINE TO BE REMOVED

STONEWALL TO BE REMOVED (SEE SHEET 4 DEMO NOTE 8)

TO BE REMOVED

PROPOSED TREELINE

CONCRETE BASE FOR LIGHT POLE

DRAIN LINE TO BE CUT FOR NEW PROPOSED DRAIN MANHOLE

STONEWALL TO BE REMOVED (SEE SHEET 4 DEMO NOTE 8)

PROPOSED TREELINE

BUILDING SETBACK LINE (TYP.)

EDGE OF WETLAND (TYP.)

50' WETLAND SETBACK (TYP.)

SEWER STRUCTURE SCHEDULE

SMH #4351
RIM = 171.7'
INV. IN = 160.3'
INV. OUT = 160.2'

SMH #4352
RIM = 170.3'
INV. IN = 161.1'
INV. OUT = 161.0'

DRAINAGE STRUCTURE SCHEDULE

CB #4
RIM = 176.8'
INV. = 172.8'
SUMP = 169.8'

FES #4
INV. = 173.0'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

LEGEND

S.F. – SQUARE FEET	CB – CATCH BASIN
Ac. – ACRE	F.E.S. – FLARED END SECTION
(TYP.) – TYPICAL	RCP – REINFORCED CONCRETE PIPE
± – MORE OR LESS	– HYDRANT
ø – DIAMETER	SMH – SANITARY SEWER MANHOLE
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS	8"S – SANITARY SEWER MAIN PIPE AND SIZE
UP – UTILITY POLE	S – SANITARY SEWER SERVICE
– STONE WALL	W – WATER MAIN PIPE AND SIZE
– EDGE OF WET	W – WATER SERVICE
f/k/a – FORMERLY KNOWN AS	– WATER GATE VALVE
D.H. (fnd) – DRILL HOLE FOUND	G – GAS MAIN
I.P. (fnd) – IRON PIPE FOUND	U/G E,T,C – UNDERGROUND ELECTRIC, TELEPHONE AND CABLE BROADBAND
I.R. (fnd) – IRON ROD FOUND	174 – EXISTING CONTOUR (2 FOOT INTERVAL)
BCC – BITUMINOUS CAPE COD CURB	SGC – SLOPED GRANITE CURB
FM – FORCE MAIN	VGC – VERTICAL GRANITE CURB

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PLANNING FILE NO.: P22-47

NO.	REVISION	APP'D	DATE
2	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

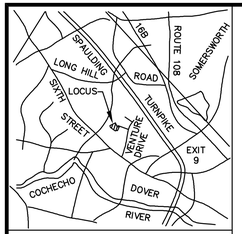
DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

DEMOLITION PLAN

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

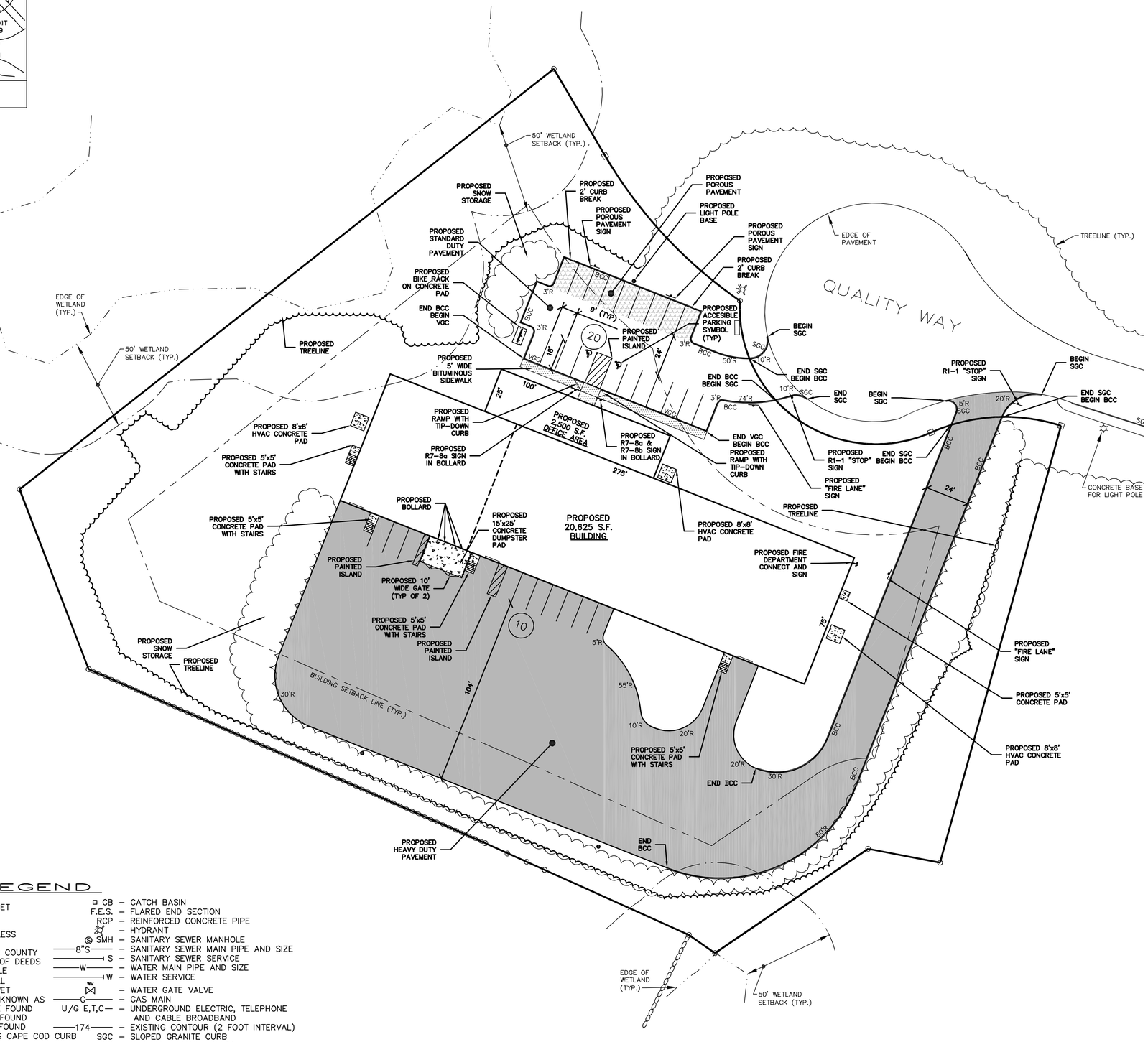
5



LOCATION PLAN
(NO SCALE)

PARKING CALCULATIONS:

	REQUIREMENT	AREA	MAX ALLOWED	PROPOSED
INDUSTRIAL / MANUFACTURING:	1 SP / 800 S.F.	20,625 S.F.	26	22
OFFICE:	1 SP / 300 S.F.	2,500 S.F.	8	8
TOTAL PARKING:			34	30



LEGEND

S.F. – SQUARE FEET	□ CB – CATCH BASIN
Ac. – ACRE	F.E.S. – FLARED END SECTION
(TYP.) – TYPICAL	RCP – REINFORCED CONCRETE PIPE
± – MORE OR LESS	– HYDRANT
ø – DIAMETER	S – SANITARY SEWER MANHOLE
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS	8"S – SANITARY SEWER MAIN PIPE AND SIZE
-o- UP – UTILITY POLE	S – SANITARY SEWER SERVICE
– STONE WALL	W – WATER MAIN PIPE AND SIZE
– EDGE OF WET	W – WATER SERVICE
f/k/a – FORMERLY KNOWN AS	– WATER GATE VALVE
D.H. (fnd) – DRILL HOLE FOUND	G – GAS MAIN
I.P. (fnd) – IRON PIPE FOUND	U/G E,T,C – UNDERGROUND ELECTRIC, TELEPHONE AND CABLE BROADBAND
I.R. (fnd) – IRON ROD FOUND	174 – EXISTING CONTOUR (2 FOOT INTERVAL)
BCC – BITUMINOUS CAPE COD CURB	SGC – SLOPED GRANITE CURB
FM – FORCE MAIN	VGC – VERTICAL GRANITE CURB

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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.	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1.	REV. PER TRC COMMENTS	SJH	7-28-22

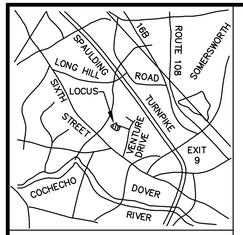
DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

SITE PLAN

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

6



LOCATION PLAN
(NO SCALE)

PDMH2
RIM=168.5
INV.IN=162.50
INV.IN=164.0 (RD)
INV.OUT=161.0

50' WETLAND SETBACK (TYP.)

PROPOSED SILTSOXX

EDGE OF PAVEMENT

TREELINE (TYP.)

PFES4
INV.OUT=158.0

WETLAND FLAG LOCATION & NOMENCLATURE (TYP)

WFA13

PROPOSED 60 LF 15" HDPE S=0.050

WFA9

WFA12

WFA11

WFA10

EDGE OF WETLAND (TYP.)

158.25
TOP OF POND

BUFFER IMPACT A =4,099 S.F.

50' WETLAND SETBACK (TYP.)

158.25
TOP OF POND

PROPOSED SEDIMENT FOREBAY

PROPOSED STONE CHECK DAM (TYP.)

PCB1 W/SILTSACK
RIM=168.25
INV.OUT=164.0

PROPOSED CONSTRUCTION ENTRANCE

PROPOSED CONSTRUCTION ENTRANCE

PDMH4
RIM=175.5
INV.IN=MATCH EXISTING
INV.OUT=172.6

PROPOSED 10 LF 15" HDPE S=0.010

CB #4

PFES6
INV.OUT=153.5

WET POND 1

PFES5
INV.OUT=155.5

PROPOSED 24 LF 15" HDPE S=0.0167

PROPOSED SEDIMENT FOREBAY

PROPOSED 110 LF 6" HDPE S=0.010

PROPOSED 92 LF 15" HDPE S=0.011

F.F. = 170.0
PROPOSED 2,500 S.F. OFFICE AREA

PROPOSED 36 LF 15" HDPE S=0.011

PDMH1
RIM=169.15
INV.IN=163.60
INV.OUT=163.50

PROPOSED INV.IN=164.6

PFES2
INV.IN=165.5

PROPOSED 20,625 S.F. BUILDING
F.F. = 163.5

CONCRETE BASE FOR LIGHT POLE

PFES1
INV.OUT=172.5

PROPOSED 300 LF 12" HDPE S=0.003

PROPOSED 92 LF 15" HDPE S=0.011

PROPOSED STONE CHECK DAM (TYP.)

POS1
RIM=157.15
1.5"x1.5" ORIFICE =154.0
1.5" DIA ORIFICE =154.5
3" DIA. ORIFICE =156.0
INV.OUT=153.9

WET POND 1 PERMANENT POOL

PROPOSED SEDIMENT FOREBAY

PROPOSED INV.IN=156.5

PFES3
INV.OUT=164.5

BUILDING SETBACK LINE (TYP.)

158.25
TOP OF POND

PROPOSED SILTSOXX

PROPOSED STONE CHECK DAM (TYP.)

BUFFER IMPACT B =976 S.F.

EDGE OF WETLAND (TYP.)

50' WETLAND SETBACK (TYP.)

DRAINAGE STRUCTURE SCHEDULE

CB #4
RIM = 176.8'
INV. = 172.8'
SUMP = 169.8'

FES #4
INV. = 173.0'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

LEGEND

S.F. – SQUARE FEET	CB – CATCH BASIN
Ac. – ACRE	F.E.S. – FLARED END SECTION
(TYP.) – TYPICAL	RCP – REINFORCED CONCRETE PIPE
± – MORE OR LESS	– HYDRANT
ø – DIAMETER	SMH – SANITARY SEWER MANHOLE
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS	8"S – SANITARY SEWER MAIN PIPE AND SIZE
UP – UTILITY POLE	S – SANITARY SEWER SERVICE
– STONE WALL	W – WATER MAIN PIPE AND SIZE
– EDGE OF WET	W – WATER SERVICE
f/k/a – FORMERLY KNOWN AS	– WATER GATE VALVE
D.H. (fnd) – DRILL HOLE FOUND	G – GAS MAIN
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I.R. (fnd) – IRON ROD FOUND	174 – EXISTING CONTOUR (2 FOOT INTERVAL)
BCC – BITUMINOUS CAPE COD CURB	SGC – SLOPED GRANITE CURB
FM – FORCE MAIN	VGC – VERTICAL GRANITE CURB

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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.	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

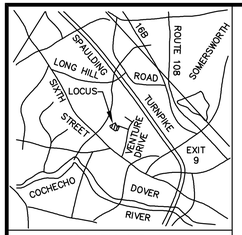
DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

GRADING DRAINAGE & EROSION CONTROL PLAN

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

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LOCATION PLAN
(NO SCALE)

50' WETLAND SETBACK (TYP.)

ELECTRIC CABINET 5C/SC9 TBM NORTHEAST CORNER CONCRETE ELEVATION = 170.75'

EDGE OF PAVEMENT

TREELINE (TYP.)

SMH #4352

8"S

QUALITY WAY

END GAS

GAS – 4" SLEEVE

SMH #4351

U/GT,E

4" W

6" S

6" SEWER SERVICE INV. = 162.19'

EDGE OF WETLAND (TYP.)

50' WETLAND SETBACK (TYP.)

PROPOSED EV READINESS (2) 2" SCHEDULE 40 PVC CONDUITS

PROPOSED SEWER LINE

4" WATER SERVICE

PROPOSED 7,500 S.F. DEICE AREA

INV.=164.5

PROPOSED 81 LF 6" PVC SDR35

PROPOSED UNDERGROUND TELEPHONE

PROPOSED 29.5 LF 6" PVC SDR35

PSMH1

CONCRETE BASE FOR LIGHT POLE

PROPOSED UNDERGROUND ELECTRIC

PROPOSED 20,625 S.F. BUILDING

PROPOSED 1" DOMESTIC WATER CONNECTION

PROPOSED WATER SHUT-OFF (TYP)

PROVIDE DOUBLE LAYER OF 2" RIGID INSULATION

PROPOSED FIRE DEPARTMENT CONNECTION (FDC)

PROPOSED 4" FIRE WATER CONNECTION

PROPOSED GAS LINE

INV.OUT=155.5

PROPOSED 10 LF 6" PVC SDR35

PROPOSED E-ONE SEWAGE EJECTOR PUMP STATION

PROPOSED 1-1/4" TO 1-1/2" SDR11 ENLARGER

PROPOSED CURB STOP CHECK VALVE

PROPOSED FORCE MAIN

PROPOSED 241 LF 1-1/2" SDR11

BUILDING SETBACK LINE (TYP.)

EDGE OF WETLAND (TYP.)

50' WETLAND SETBACK (TYP.)

SEWER STRUCTURE SCHEDULE

SMH #4351
RIM = 171.7'
INV. IN = 160.3'
INV. OUT = 160.2'

SMH #4352
RIM = 170.3'
INV. IN = 161.1'
INV. OUT = 161.0'

PROPOSED SEWER STRUCTURE SCHEDULE

PSMH1
RIM=168.35
INV.IN=162.90 (6")
INV.IN=163.15 (1.5")
INV.OUT=162.80

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

LEGEND

S.F. – SQUARE FEET	CB – CATCH BASIN
Ac. – ACRE	F.E.S. – FLARED END SECTION
(TYP.) – TYPICAL	RCP – REINFORCED CONCRETE PIPE
± – MORE OR LESS	– HYDRANT
ø – DIAMETER	SMH – SANITARY SEWER MANHOLE
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS	8"S – SANITARY SEWER MAIN PIPE AND SIZE
UP – UTILITY POLE	S – SANITARY SEWER SERVICE
– STONE WALL	W – WATER MAIN PIPE AND SIZE
– EDGE OF WET	W – WATER SERVICE
f/k/a – FORMERLY KNOWN AS	– WATER GATE VALVE
D.H. (fnd) – DRILL HOLE FOUND	G – GAS MAIN
I.P. (fnd) – IRON PIPE FOUND	U/G E,T,C – UNDERGROUND ELECTRIC, TELEPHONE AND CABLE BROADBAND
I.R. (fnd) – IRON ROD FOUND	174 – EXISTING CONTOUR (2 FOOT INTERVAL)
BCC – BITUMINOUS CAPE COD CURB	SGC – SLOPED GRANITE CURB
FM – FORCE MAIN	VGC – VERTICAL GRANITE CURB

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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UTILITY PLAN

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

8

DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF A 23,125 S.F. BUILDING, DRAINAGE AND UTILITY IMPROVEMENTS, AND SITE ACCESS.

PROJECT NAME AND LOCATION

WEAVE FILTRATION
TAX MAP D, LOT 11–7 LATITUDE N43° 13' 23"
QUALITY WAY LONGITUDE W70° 54' 44"
DOVER, NH

DISTURBED AREA

±122,500 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 FOLLOWNG 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 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.

PER 153–10 F:

ALL SITE IMPROVEMENTS WHICH REQUIRE BLASTING OF LAND SHALL MEET THE FOLLOWNG REQUIRMENTS PRIOR TO ANY BLASTING OCCURING.

1. THE APPLICANT SHALL PREPARE A PRE–BLAST SURVEY OF ALL STRUCTURES WITHIN FIVE HUNDRED (500) FEET OF THE EXTERNAL BOUNDARIES OF THE PROPOSED LOT TO BE DEVELOPED. THIS SURVEY, ALONG WITH A MONITORING PLAN, SHALL BE ON FILE WITH THE DOVER FIRE AND RESCUE. UPON RECOMMENDATIONS OF THE CHIEF, THE PLANNING BOARD MAY REQUIRE A PRE–BLAST SURVEY OF ALL STRUCTURES WITHIN ONE THOUSAND (1000) FEET.
2. THE APPLICANT SHALL HOLD A NEIGHBORHOOD MEETING TO REVIEW THE BLASTING PLAN AND PRE–BLAST SURVEY WITH REPRESENTATIVES OF THE FIRE AND RESCUE AND THE BLASTING COMPANY IN ATTENDANCE, PRIOR TO ANY ON–SITE BLASTING. ABUTTERS WITHIN ONE THOUSAND (1000) FEET OF THE EXTERNAL BOUNDARY OF THE PROJECT PARCEL SHALL BE NOTIFIED BY THE CERTIFIED MAIL (PAID FOR BY THE APPLICANT) OF THE MEETING NO LESS THAN TEN (10) DAYS PRIOR TO THE MEETING AND NO MORE THAN FIFTEEN (15) DAYS PRIOR TO THE MEETING. THE NOTICE SHALL STATE THE TIME AND DATE OF THE BLASTING AND CONTAIN A MAP SHOWING THE BLASTING AREA, THE 1,000–FOOT–RADIUS AREA, AND THE 500–FOOT–RADIUS AREA.
3. PERMIT HOLDERS SHALL BE IN COMPLIANCE WITH NFPA 495, EXPLOSIVE MATERIALS CODE, IN ADDITION TO ALL OTHER ORDINANCES AND CODES SET FORTH IN THE CITY OF DOVER CODE, § 153–14A, STORMWATER MANAGEMENT, EROSION CONTROL AND FLOOD HAZARDS, OF THIS CHAPTER AND THE CITY OF DOVER FIRE PREVENTION CODE, WHICH SPECIFICALLY PROHIBITS THE OVERNIGHT STORAGE OF EXPLOSIVES OR BLASTING AGENTS. FURTHER, ALL STORAGE MAGAZINES SHALL BE LOCKED IN THE OPEN POSITION AT THE END OF THE DAY'S OPERATION FOR EASY INSPECTION BY CITY OFFICIALS.
4. BLASTING PERMITS MAY BE OBTAINED BY CALLING THE DOVER FIRE AND RESCUE DURING NORMAL BUSINESS HOURS. THE PERMITS ARE ONLY ACTIVE FOR THE DATES AND TIME SPECIFIED ON THE PERMIT.
5. PERMIT HOLDERS SHALL HOLD INSURANCE AGAINST CLAIMS FOR DAMAGES FOR PERSONAL INJURY AND PROPERTY WHICH MAY ARISE FROM THE PERFORMANCE OF THE WORK.
6. HOURS OF OPERATION FOR THE BLASTING SHALL BE NO EARLIER THAN 8:00AM AND NO LATER THAN 6:00PM, MONDAY THROUGH FRIDAY, EXCLUDING FEDERAL HOLIDAYS.

WINTER CONSTRUCTION NOTES

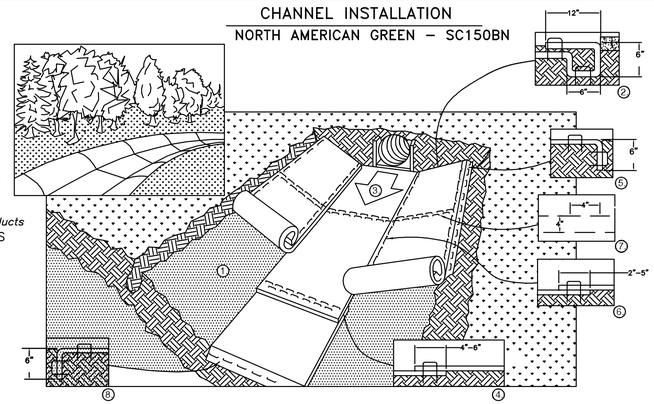
1. ALL PROPOSED POST–DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF 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.

ENV–WQ 1510: BEST MANAGEMENT PRACTICES FOR BLASTING

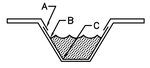
1) ALL ACTIVITIES ASSOCIATED WITH BLASTING NEED TO BE OPTIMIZED TO PREVENT THE RELEASE OF CHEMICALS ASSOCIATED WITH BLASTING ACTIVITIES TO THE ENVIRONMENT.
2) IF MORE THAN 5,000 CY OF ROCK REMOVAL IS REQUIRED DRINKING WATER WELLS MUST BE IDENTIFIED AND LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.
3) THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
   (1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
      (A) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOID

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.



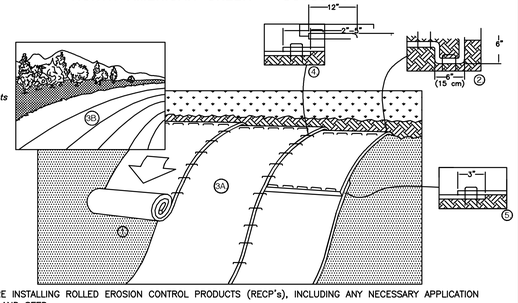
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

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.

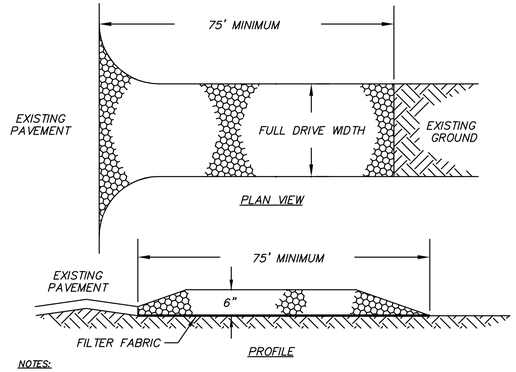
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

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.



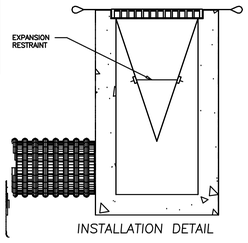
NOTES:
1. *SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.*
2. *TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.*

STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS
   A. AGGREGATE SIZE: USE THREE (3) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
   B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
   C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
   D. LENGTH: AS REQUIRED, BUT NOT LESS THAN SEVENTY–FIVE (75) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
   E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE.
   F. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUAL.

2. MAINTENANCE
   THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



INSTALLATION DETAIL

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	90 %
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

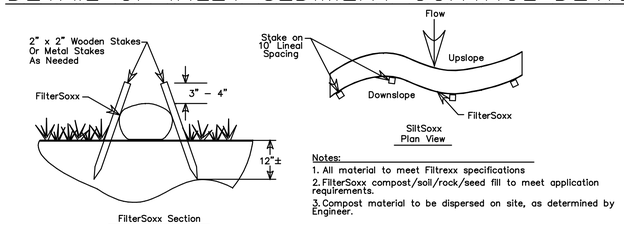
HI–FLOW SILTSACK®
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN–OFF)

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

OIL–ABSORBANT SILTSACK®

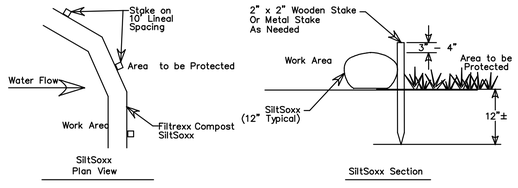
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN–OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL–ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL–ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.

DETAIL OF INLET SEDIMENT CONTROL DEVICE



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.
4. Compost material to be dispersed on site, as determined by Engineer.

SILTSOXX DETAILS
NOT TO SCALE

SEEKING REPORTS OF RARE TURTLES

The NH Fish & Game Department is collecting observations of four turtle species:



Blanding's turtle (state endangered)
- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



Wood turtle (special concern)
- Sculpted, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land



Eastern box turtle (state endangered)
- Small terrestrial turtle with highly domed shell
- Irregular yellow or orange markings over brown/black base



Spotted turtle (state threatened)
- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

Report sightings to RAARP@wildlife.nh.gov or 603-271-2461 *Please report promptly, noting specific location and date – Photographs strongly encouraged*

NOTES:
1. *ALL OUTSIDE CONSTRUCTION PERSONNEL SHALL RECEIVE TRAINING IN THE IDENTIFICATION OF RARE TURTLE SPECIES AND MADE AWARE OF THEIR PROTECTED STATUS.*
2. *THE USE OF WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED*
3. *THE USE OF EROSION CONTROL BERM, WHITE FILTREXX DEGRADABLE WOVEN SILT SOCK, OR 'WILDLIFE FRIENDLY' WOVEN ORGANIC MATERIAL (E.G. COCO OR JUTE MATTING SUCH AS NORTH AMERICAN GREEN SC150BN OR EQUIVALENT) ARE ACCEPTABLE FOR USE*
4. *IF WOOD, SPOTTED, OR BLANDING'S TURTLES ARE FOUND LAYING EGGS IN THE WORK AREA, PLEASE CONTACT MELISSA DOPERALSKI AT 271–1738 or JOSH MEGYESY AT 271–1125 FOR FURTHER INSTRUCTIONS.*

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–47

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	REV. PER 2ND TRC COMMENTS	SJH	9–1–22
1	REV. PER TRC COMMENTS	SJH	7–28–22

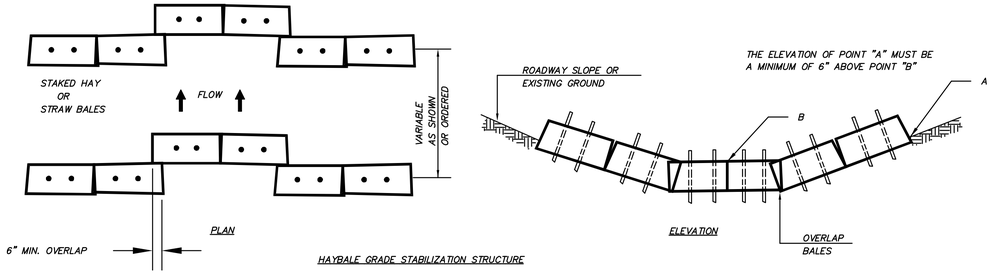
DATE: 6–16–22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY: SJH
PROJECT NO: 21094
FILE: SITE.DWG

DETAIL SHEET

PROJECT: *WEAVE FILTRATION QUALITY WAY DOVER, NH*

APPLICANT: *WEAVE FILTRATION LLC 100 TRI CITY ROAD UNIT 117 SOMERSWORTH, NH 03878*

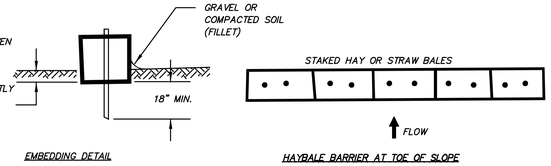
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HAYBALE GRADE STABILIZATION STRUCTURE

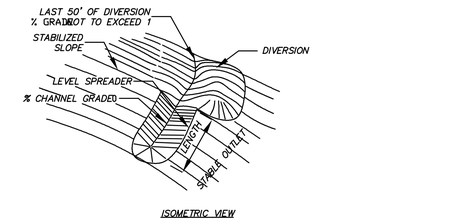
CONSTRUCTION SPECIFICATIONS

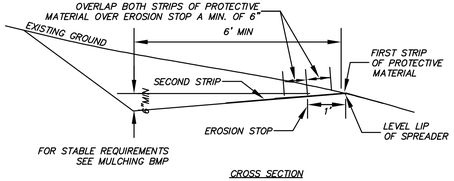
1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" x 2" STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY 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.



HAYBALE NOTES AND DETAILS

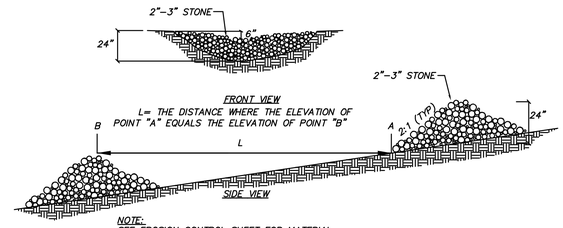
NOT TO SCALE





LEVEL SPREADER DETAIL

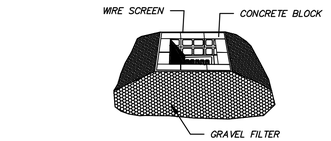
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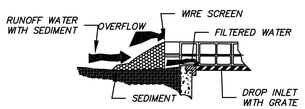


NOTE:
SEE EROSION CONTROL SHEET FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

STONE CHECK DAM

NOT TO SCALE

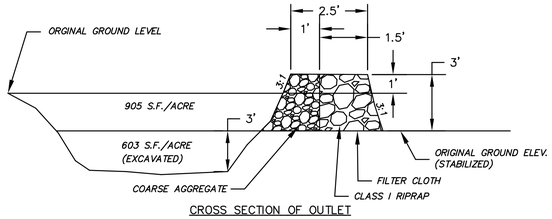




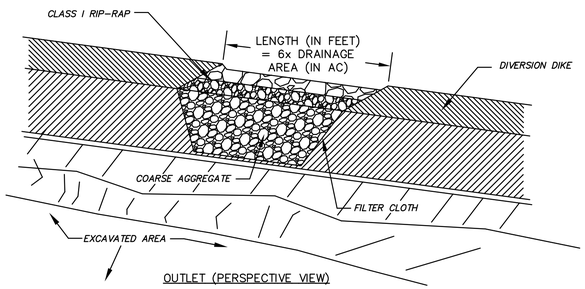
NORMAL USE AROUND CATCH BASINS

TEMPORARY EROSION CONTROL

NOT TO SCALE



CROSS SECTION OF OUTLET

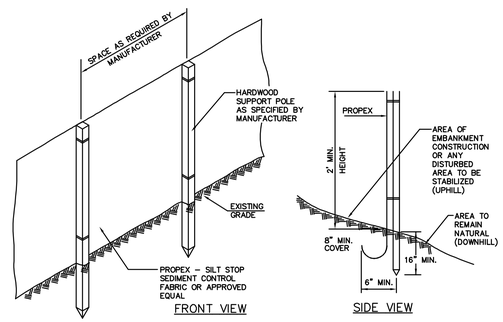


OUTLET (PERSPECTIVE VIEW)

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



SILT FENCE DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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.	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

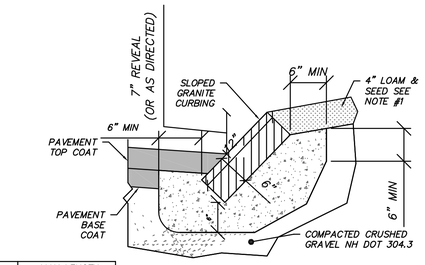
DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

DETAIL SHEET

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

11

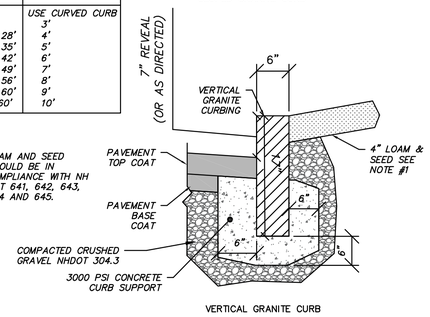


SLOPED GRANITE CURB

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:

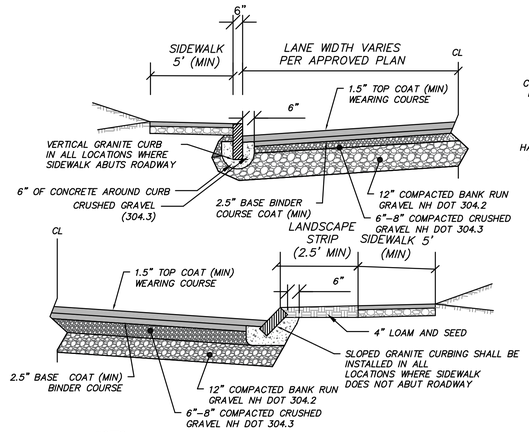
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.



VERTICAL GRANITE CURB

CITY OF DOVER D–8 GRANITE CURB DETAIL

NOT TO SCALE

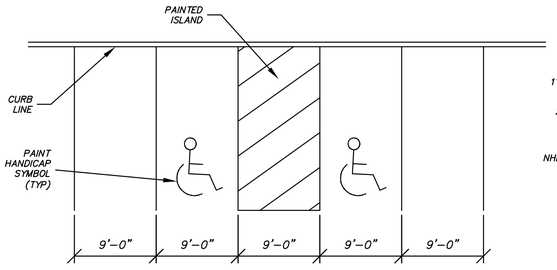


NOTES:

1. THIS DETAIL IS FOR GENERAL REVIEW PURPOSES ONLY, FINAL DESIGN SHALL BE BASED ON SPECIFIC SITE CONDITIONS AND APPROVED PLANS.
2. SIDEWALK LOCATION AND MATERIAL SHALL BE AS APPROVED BY THE CITY OF DOVER.

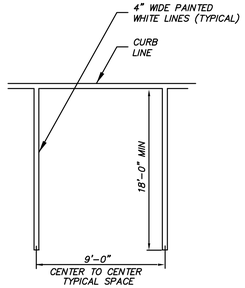
CITY OF DOVER D–5 ROADWAY CROSS SECTION DETAIL

NOT TO SCALE

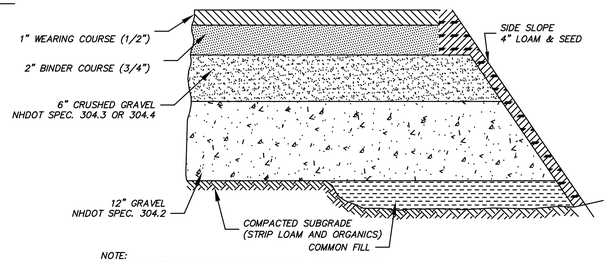


ACCESSIBLE PARKING LAYOUT

NOT TO SCALE



STANDARD PARKING STALL

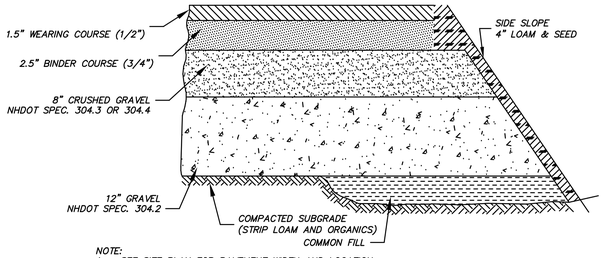


NOTE:

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



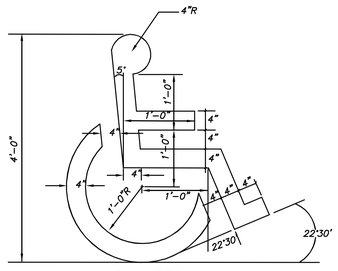
NOTE:

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

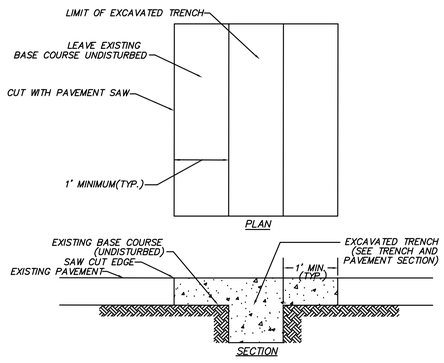
NOT TO SCALE

NOTE: SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES



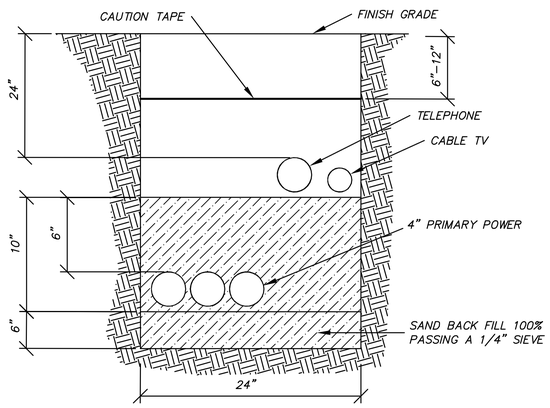
PAINTED HANDICAP SYMBOL

NOT TO SCALE



TRENCH PATCH

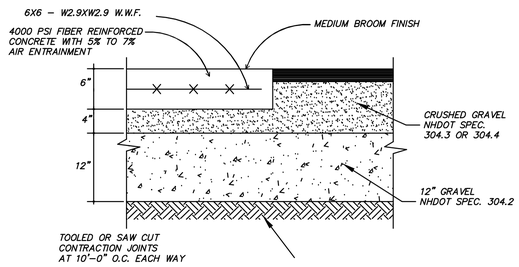
NOT TO SCALE



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

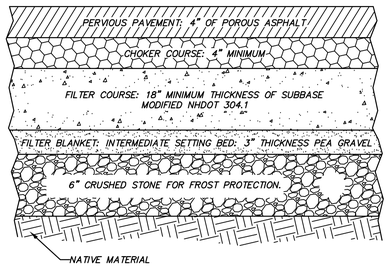
NOT TO SCALE



NOTE: PITCH CONCRETE PAD GRADING TO CENTER

DUMPSTER DETAIL

NOT TO SCALE



(UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS)

NOTE:

1. SEE SITE PLAN FOR LOCATION OF POROUS PAVEMENT, PAVEMENT WIDTH AND LOCATION.
2. CONSTRUCTION MATERIALS SHALL NOT BE STORED ON THE POROUS PAVEMENT OR BASE MATERIALS.
3. A PROFESSIONAL ENGINEER SHALL PERFORM ON–SITE INSPECTIONS DURING THE CONSTRUCTION AND INSTALLATION OF POROUS PAVEMENT AND PROVIDE A STATEMENT UPON COMPLETION OF WORK IDENTIFYING THAT THE PAVEMENT WAS PRODUCED AND INSTALLED AS PER THE REFERENCED SPECIFICATION. NOTIFY THE CITY ENGINEER OF THE INSTALLATION SCHEDULE AND IN ADVANCED OF INSTALLATION.
4. CRUSHED STONE, BANK RUN GRAVEL & CRUSHED GRAVEL MATERIALS SHALL CONFORM WITH NHDOT STD. SPECIFICATIONS.
5. THE POROUS PAVEMENT AREAS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS IN "UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS, FEBRUARY 2014, REVISED SEPTEMBER 2016" (OR LATEST EDITION), PUBLISHED BY UNIVERSITY OF NEW HAMPSHIRE STORMWATER CENTER.
6. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS–SLOPE.
7. QUALITY CONTROL AND QUALITY ASSURANCE SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.
8. POROUS ASPHALT SHALL BE INSTALLED AS THE LAST CONSTRUCTION ACTIVITY ONCE THE GRADING ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS BEEN STABILIZED.

(SEE SITE PLAN FOR LOCATION)

POROUS PAVEMENT SECTION

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–47

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.	REV. PER 2ND TRC COMMENTS	SJH	9–1–22
1.	REV. PER TRC COMMENTS	SJH	7–28–22

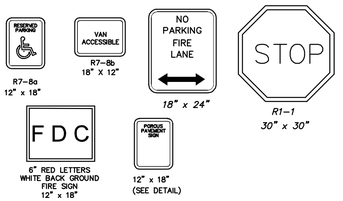
DATE: 6–16–22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO: 21094
FILE: SITE.DWG

DETAIL SHEET

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

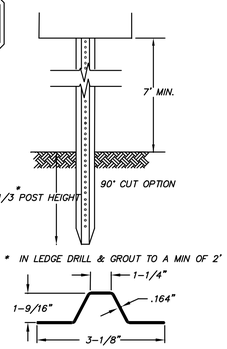
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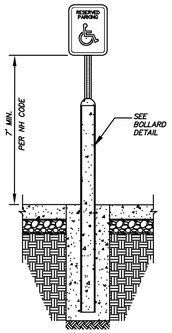
NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

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

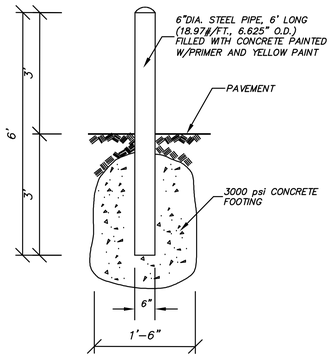
BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.



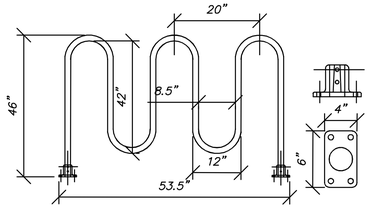
SIGN LEGEND & SIGN POST
NOT TO SCALE



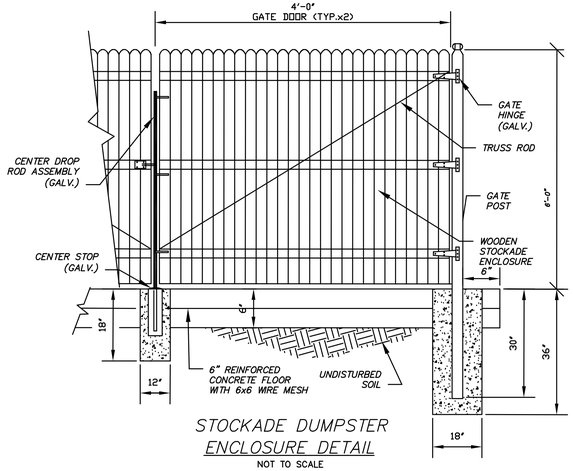
SIGN IN BOLLARD
NOT TO SCALE



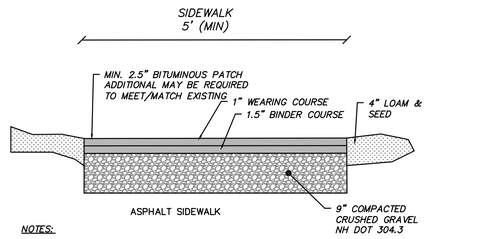
BOLLARD DETAIL
NOT TO SCALE



BIKE RACK DETAIL
NOT TO SCALE

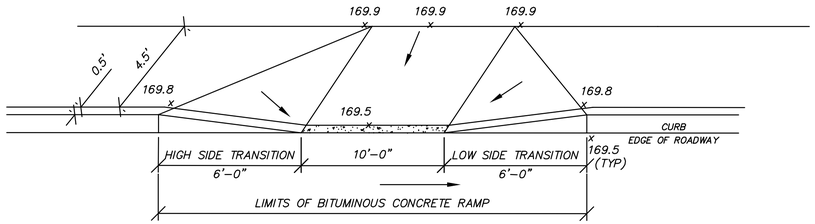


STOCKADE DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

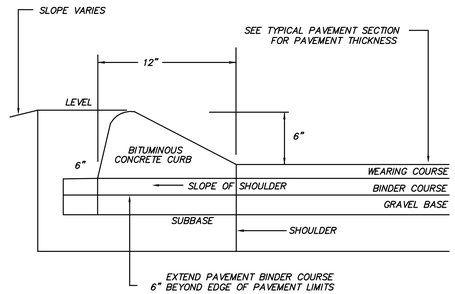


NOTES:
1. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF DOVER STANDARDS SPECIFICATIONS.
2. SIDEWALK AND DRIVEWAY WIDTHS SHALL BE EQUAL TO EXISTING WIDTHS OR AS APPROVED AND SHALL SLOPE TO MATCH EXISTING ELEVATIONS.
3. BASE FOR THE SIDEWALKS AND DRIVEWAYS SHALL BE 9-INCHES OF CRUSHED GRAVEL.

CITY OF DOVER D-6 ASPHALT SIDEWALK DETAIL
NOT TO SCALE



SIDEWALK APRON
NOT TO SCALE



BITUMINOUS SLOPED CURB
NOT TO SCALE

POROUS PAVEMENT

THIS AREA IS AN INTEGRAL COMPONENT OF THE DRAINAGE SYSTEM FOR THIS SITE. SEE SITE INSPECTION & MAINTENANCE PLAN FOR ALL APPLICABLE WINTER AND REGULAR MAINTENANCE GUIDELINES.

WINTER MAINTENANCE GUIDELINES
- SAND APPLICATION IS PROHIBITED
- APPLY ANTI ICING TREATMENTS PRIOR TO STORMS
- APPLY DEICING TREATMENTS DURING AND AFTER STORMS ONLY AS NECESSARY TO CONTROL COMPACT SNOW OR ICE NOT REMOVED BY PLOWING

MAINTENANCE REQUIRED
- THIS POROUS PAVEMENT AREA SHALL BE CLEANED OF SAND, SALT & DEBRIS AT LEAST 2 TIMES A YEAR (SPRING & FALL) AND/OR AS NEEDED TO KEEP IT IN GOOD WORKING ORDER
- VACUUM SWEEPING IS THE PREFFERED METHOD OF ACCUMULATION REMOVAL
- AT LEAST 2 TIMES A YEAR, WITHIN 30 MINUTES OF A PRECIPITATION EVENT, ENSURE THE PAVEMENT SURFACE DRAINS EFFECTIVELY
- IF THE PAVEMENT SURFACE IS NOT DRAINING PROMPT VACUUM SWEEPING WILL BE REQUIRED

REF: UNH WEBSITE FOR STORMWATE MANAGEMENT "BMP'S" "http://WWW.UNH.EDU/UNHSC/

POROUS PAVEMENT SIGN DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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CIVIL & WATERFRONT ENGINEERING
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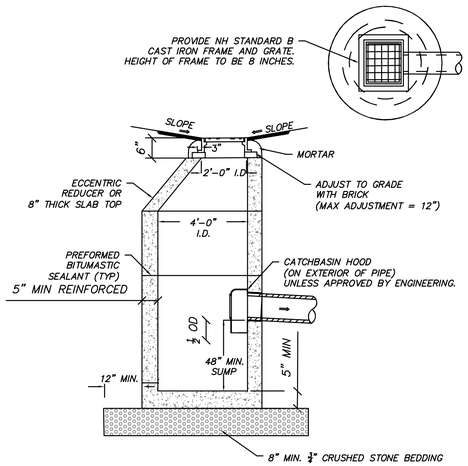
DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

DETAIL SHEET

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

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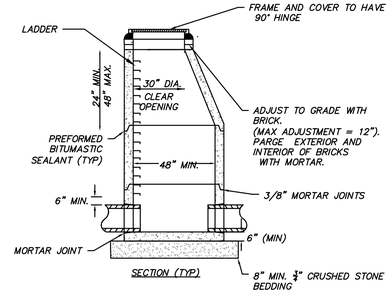


NOTES:

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



NOTES:

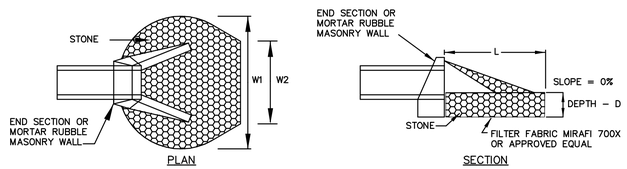
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

CITY OF DOVER D-20
DRAIN MANHOLE DETAIL

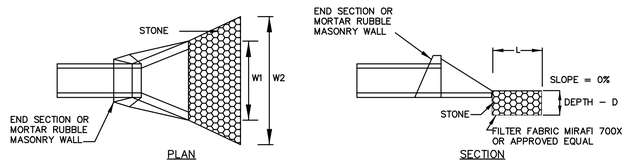
NOT TO SCALE

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.



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 PIPES. 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
FES1	12	4	10	1	6	DEFINED
FES3	12	4	10	1	6	DEFINED
FES4	4	14	10	1	6	UNDEFINED
FES5	3	10	16	1	6	UNDEFINED
FES6	11	3	11	1	6	DEFINED

RIP RAP OUTLET PROTECTION

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

NO.	REVISION	APP'D	DATE
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1.	REV. PER TRC COMMENTS	SJH	7-28-22

DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

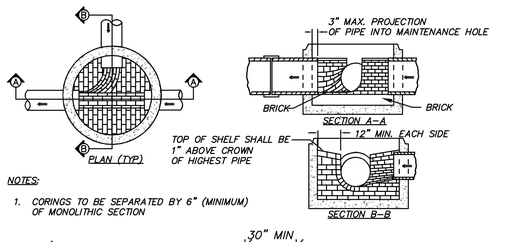
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

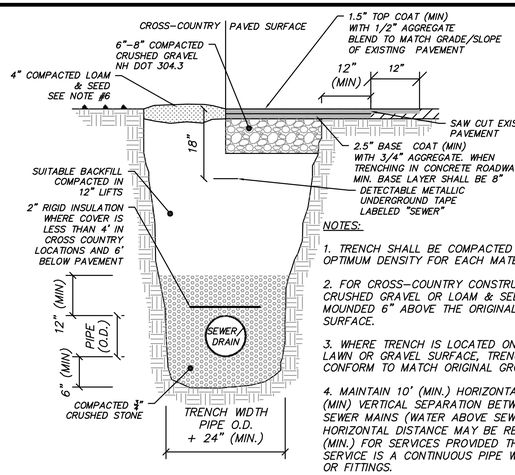
DETAIL SHEET

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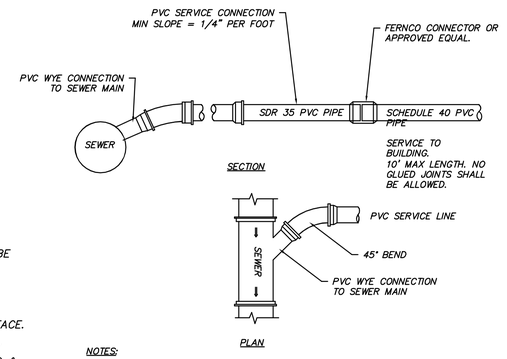
CITY OF DOVER D-16
SEWER MANHOLE DETAIL

NOT TO SCALE



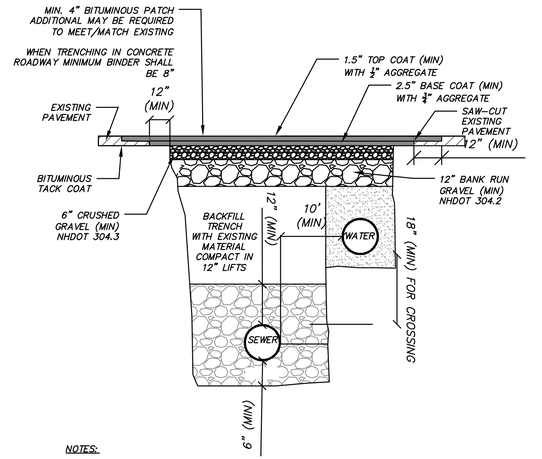
CITY OF DOVER D-3
SEWER TRENCH DETAIL

NOT TO SCALE



CITY OF DOVER D-17
SEWER SERVICE DETAIL

NOT TO SCALE



CITY OF DOVER
TYPICAL TRENCH 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.: 5,738,359

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.

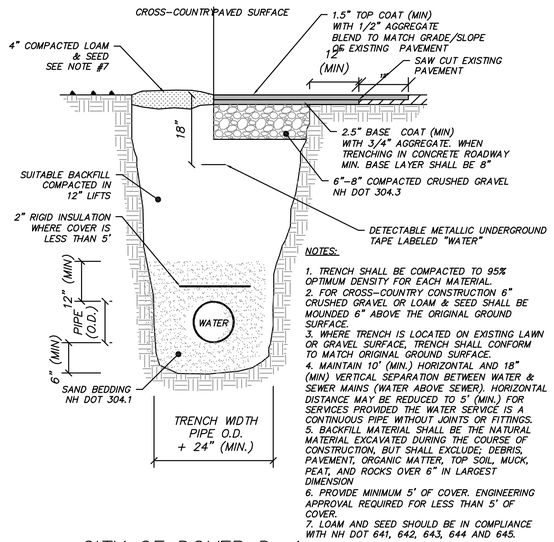
All pipe stubs must be restrained.

Adapters are required when using Corrugated Pipe. Refer to the Corrugated Pipe Adapter Data Sheet for more information.

Check calibration of torque limiters monthly

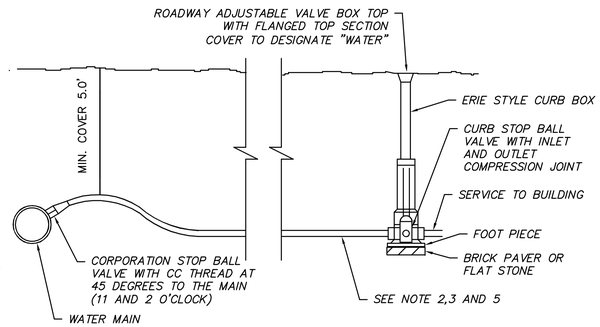
Torque limiters are available for connectors that can be used with cordless drills and hand or air ratchets.

Call 800-626-2180 for information.



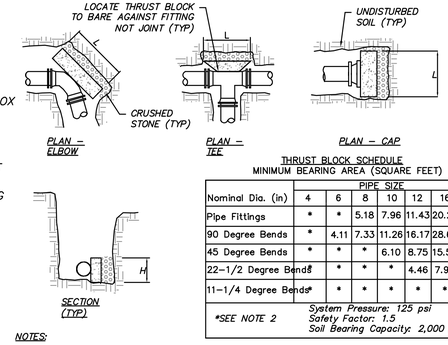
CITY OF DOVER D-4
WATER TRENCH DETAIL

NOT TO SCALE



CITY OF DOVER D-13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



	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					

CITY OF DOVER D-15
THRUST BLOCK DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

CIVILWORKS NEW ENGLAND
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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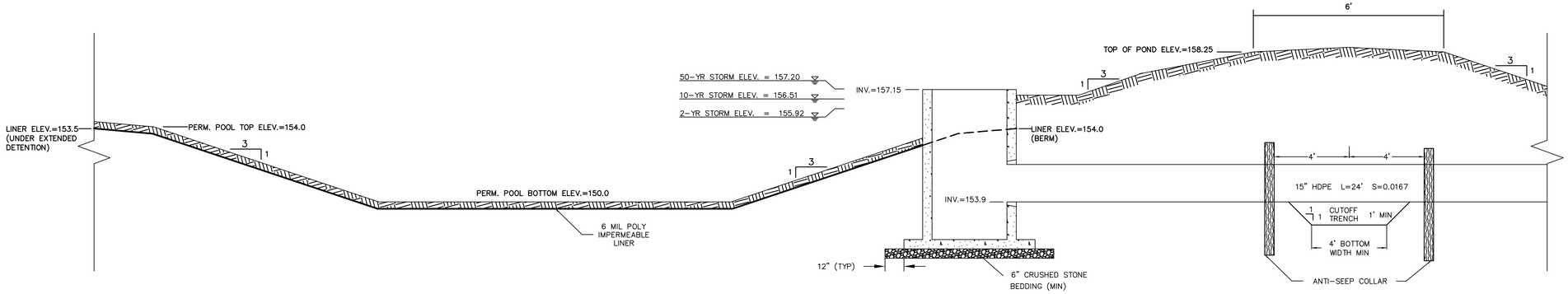
DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

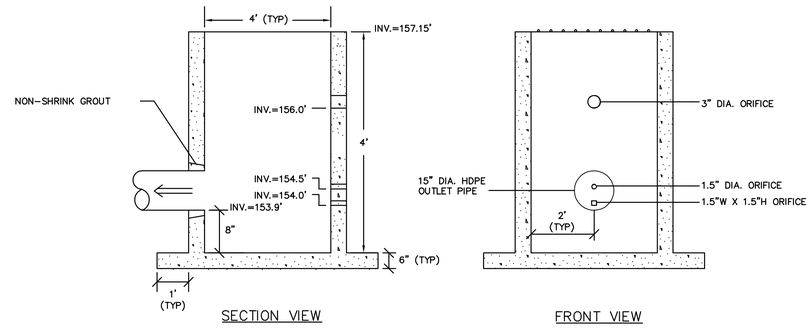
DETAIL SHEET

15



WET POND 1 (WP1)

NOT TO SCALE



SECTION VIEW

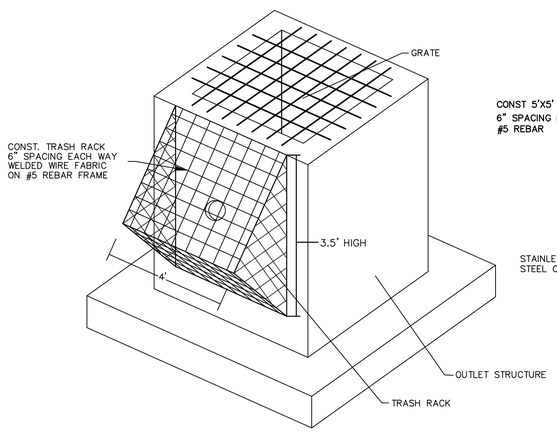
FRONT VIEW

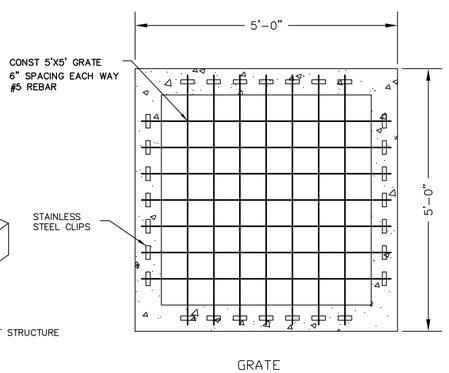
NOTE:

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.
3) SUMPS SHALL NOT BE GREATER THAN 8 INCHES.

OUTLET STRUCTURE WET POND 1 (OS1) DETAIL

NOT TO SCALE





GRATE

TYPICAL INLET TRASH RACKS

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.

DETENTION POND CONSTRUCTION NOTES

DETENTION AREA EARTH EMBANKMENT:

1 SEE GRADING PLAN FOR BERM WIDTHS.
2 SIDE SLOPES – THREE HORIZONTAL TO ONE VERTICAL (3:1) OR UNLESS OTHERWISE NOTED.
3 FILL MATERIALS SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.
4 FILL MATERIALS SHALL BE A MIXTURE OF STONES (NOT EXCEEDING 6" IN DIAMETER) AND A FINE SANDY SILT MATERIAL.
5 THE SOIL USED FOR THE SEDIMENT FOREBAY BERM SHALL HAVE A MINIMUM PERCOLATION RATE OF 10 MINUTES AN INCH.
6 SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

DETENTION AREA BERM BASE PREPARATION:

1 THE BASE AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED BERM. THE BASE AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF MATERIAL.
2 REMOVE ALL SOFT ORGANIC MATTER, PEAT, DEBRIS AND FOREIGN MATERIAL TO A DEPTH AS NEEDED (1' MIN) TO REACH AN UNYIELDING BASE OF VIRGIN SOIL.

EXECUTION:

1 FILL MATERIALS SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
2 FILL MATERIALS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
3 ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
4 FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. PLACE THE MORE IMPERVIOUS SOIL (HIGHER PERCENTAGE PASSING THE #200 SIEVE) IN THE UPSTREAM TWO-THIRDS (2/3) OF THE BERM. THE MORE GRANULAR SOIL MATERIAL SHOULD BE PLACED IN THE REMAINING DOWNSTREAM ONE-THIRD PORTION OF THE BERM.
5 INSTALL ANTI-SEEP COLLARS CONCURRENTLY WITH FILL MATERIAL PLACEMENT.
6 INSTALL CUT-OFF TRENCH CONCURRENTLY WITH FILL MATERIAL PLACEMENT. THE CUT OFF TRENCH SHALL BE LOCATED AT OR SLIGHTLY UPSTREAM OF THE CENTER LINE OF THE BERM. IT SHALL EXTEND UP THE ABUTMENTS AS REQUIRED AND BE DEEP ENOUGH TO EXTEND INTO A RELATIVELY IMPERVIOUS LAYER.
7 THE CUTOFF TRENCH SHALL HAVE A BOTTOM WIDTH ADEQUATE TO ACCOMMODATE THE EQUIPMENT USED FOR EXCAVATION, BACKFILL AND COMPACTION OPERATIONS. CUTOFF TRENCH TO BE EXCAVATED AND BACKFILLED PRIOR TO PLACING PIPE.
8 CUTOFF TRENCH SIDE SLOPES SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL.

MOISTURE CONTROL

THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.

COMPACTION

FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI-SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS.

MAINTENANCE:

MAINTENANCE IS NECESSARY TO ENSURE THAT THE DETENTION BASINS WILL CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. THE "HOMEOWNERS ASSOCIATION" IS RESPONSIBLE FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA.

1 EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE. IF SUCH ISSUES ARE NOTED THEY SHALL BE RECTIFIED AS SOON AS PRACTICAL.
2 VEGETATION – THE VEGETATED AREAS OF THE BERM SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES SHOULD BE KEPT OFF THE BERM AREA.
3 INLETS AND OUTLETS – SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED.
4 SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE STRUCTURE INLET ELEVATION 89.5' THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

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CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

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1	REV. PER TRC COMMENTS	7-28-22	SJH

DATE: 6-16-22
SCALE: AS SHOWN
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DESIGN BY: SRD
APPROVED BY:SJH
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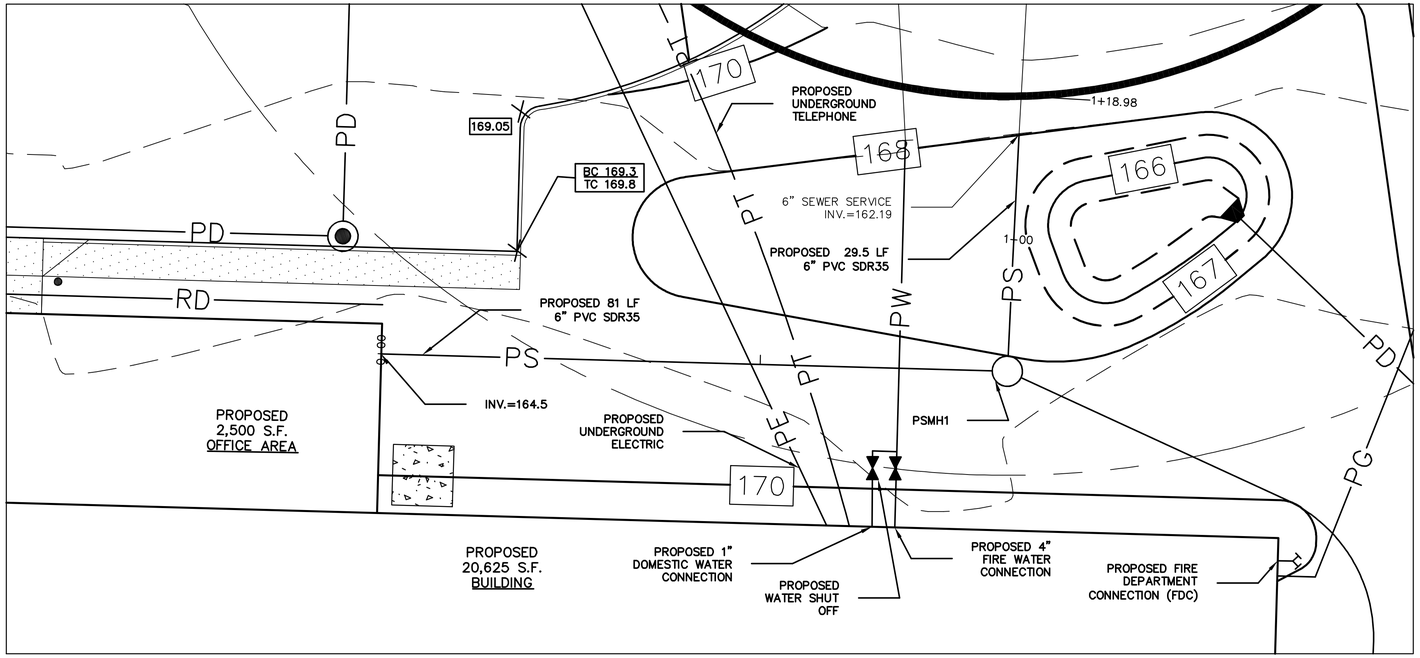
DETAIL SHEET

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

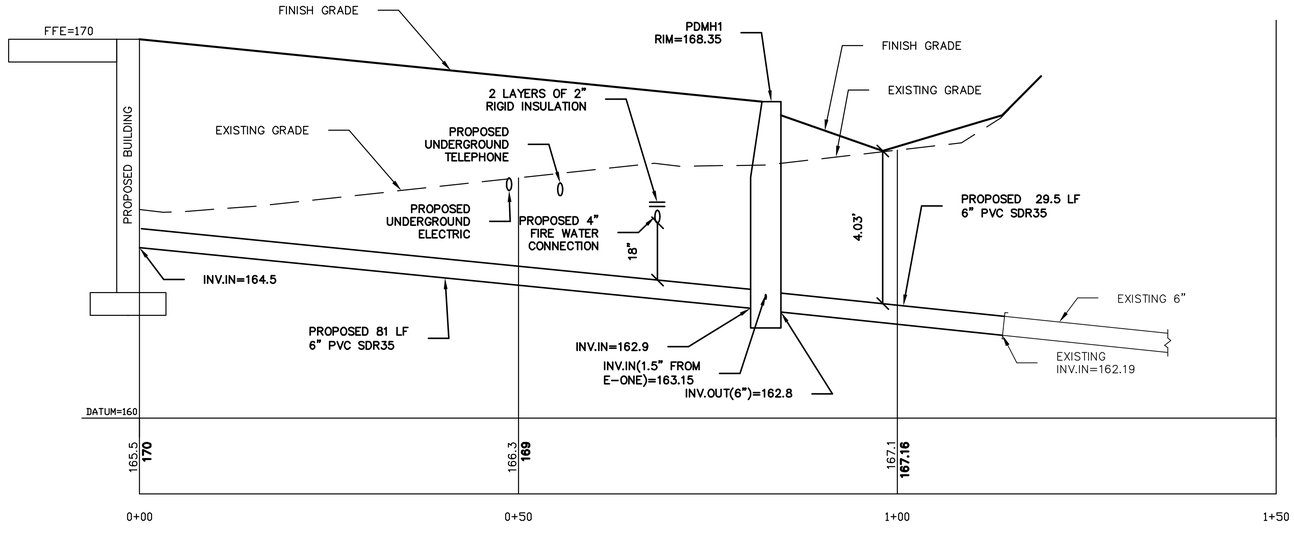
PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

16

SEWER PROFILE



PLAN VIEW
SCALE: 1"=10'



SEWER PROFILE VIEW
SCALE: HORIZONTAL: 1"=10'
VERTICAL: 1"=2'

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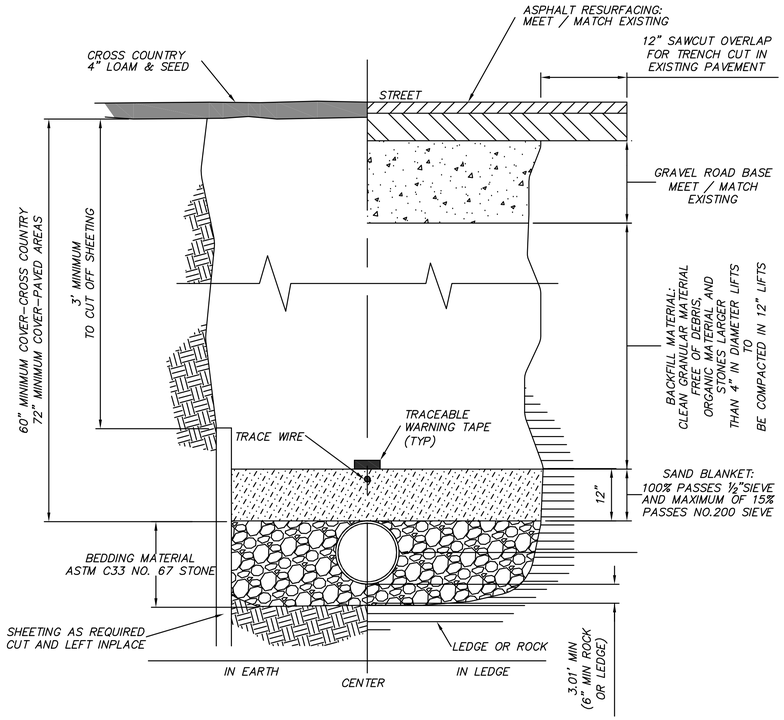
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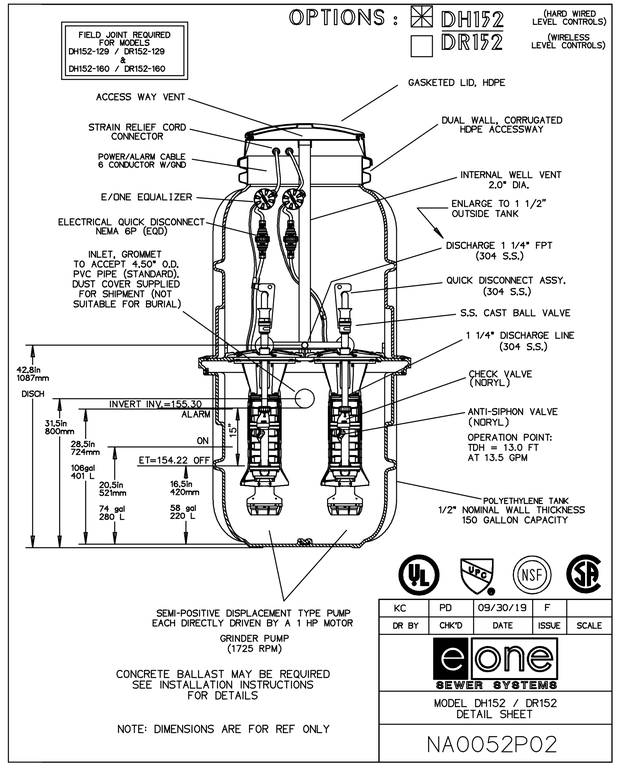
DETAIL SHEET

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QUALITY WAY
DOVER, NH

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WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878



SEWER FORCEMAIN TRENCH
NOT TO SCALE



KC	PD	09/30/19	F	
DR BY	CHK'D	DATE	ISSUE	SCALE

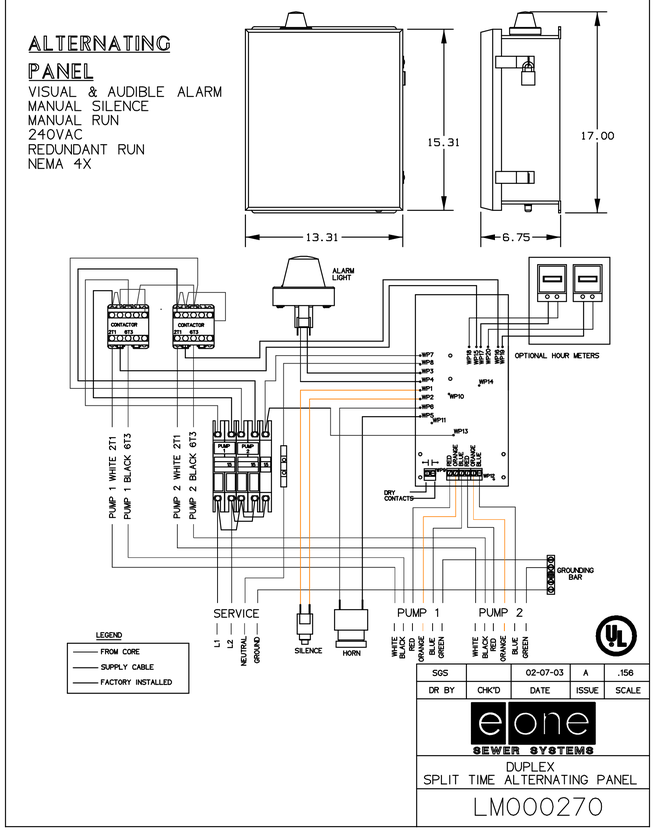
e/one SEWER SYSTEMS

MODEL DH152 / DR152 DETAIL SHEET

NA0052P02

ALTERNATING PANEL

VISUAL & AUDIBLE ALARM
MANUAL SILENCE
MANUAL RUN
240VAC
REDUNDANT RUN
NEMA 4X



SGS		02-07-03	A	.156
DR BY	CHK'D	DATE	ISSUE	SCALE

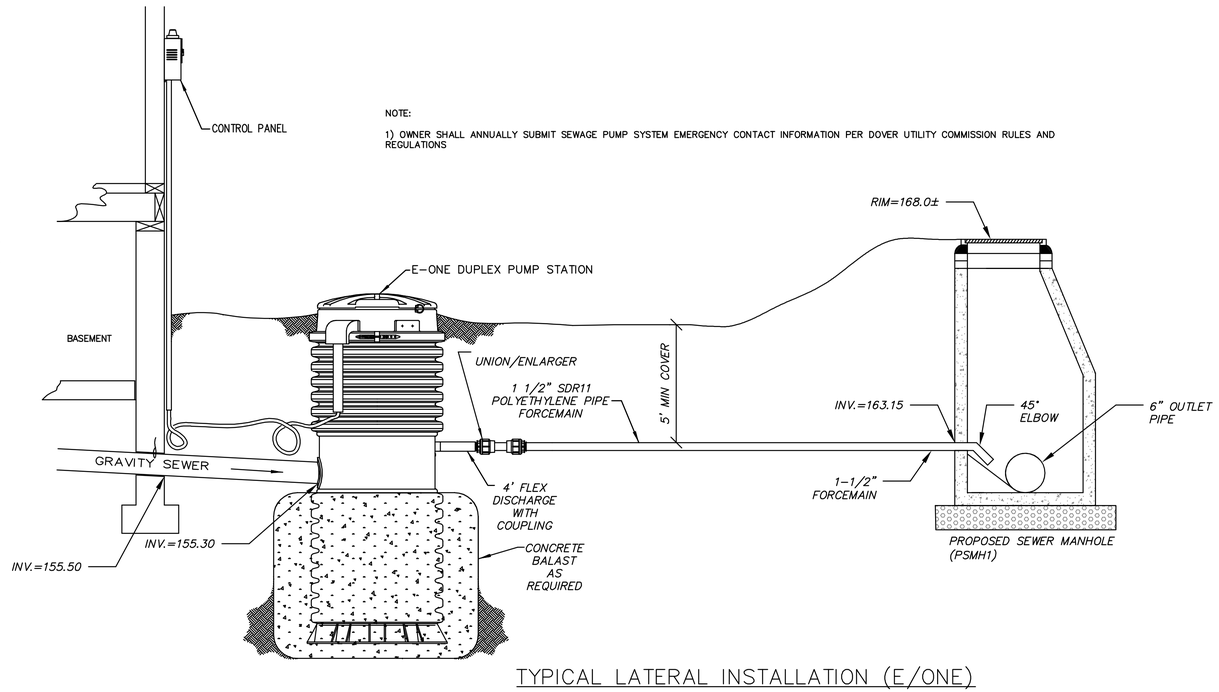
e/one SEWER SYSTEMS

DUPLEX SPLIT TIME ALTERNATING PANEL

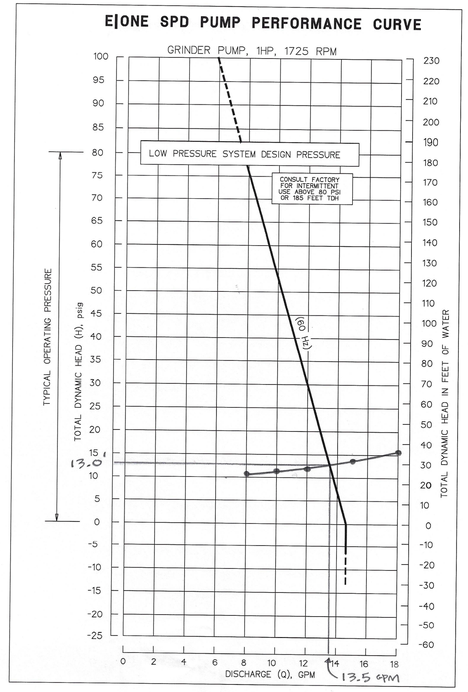
LM000270

BURIED NON-METALLIC UTILITIES SHALL RECEIVE A TRACER WIRE.

1. THE TRACER WIRE SHALL BE INSTALLED ON TOP OF THE BURIED UTILITY CROWN.
2. THE TRACER WIRE SHALL BE POSITIVELY ATTACHED TO THE NON-METALLIC BURIED UTILITIES BY PLASTIC WIRE TIES OF SIMILAR TYPE OF ATTACHMENT EVERY 6 FEET FOR STRAIGHT RUN OF UTILITY AND AT ALL CHANGES OF DIRECTION. TAPE SHALL BE POLYKEN "930-35," PROTECTO-WRAP "310", OR EQUAL.
3. THE ENDS OF THE TRACER WIRE SHALL BE EXPOSED ABOVE THE FINISHED GRADE.
4. INSTALL APPROVED CAST IRON VALVE BOXES AT ALL LOCATIONS WHERE THE ENDS OF THE TRACER WIRE ARE EXPOSED ABOVE THE FINISHED GRADE. THE BOXES SHALL NOT BE MORE THAN 200 FEET APART AND SHALL CONTAIN A 24" COIL OF WIRE FROM EACH END OF THE TRACER WIRE.
5. TRACER WIRE SHALL BE CONTINUOUS BETWEEN BOXES AND SHALL BE TESTED FOR CONTINUITY IN THE PRESENCE OF THE INSPECTOR.
6. TRACER WIRE SHALL BE NO. 10 AWG, COPPER WIRE WITH TW INSULATION (BLUE IN COLOR FOR USE WITH POTABLE WATER, GREEN FOR USE WITH SEWER). CONNECTORS SHALL BE DRY-CON TYPE CONNECTORS FOR SPECIFIED WIRE GAGE AND SUITABLE FOR USE WITH BURIED TRACER WIRE.
7. TRACER WIRE SHALL BE EXPOSED ABOVE FINISHED GRADE IN THE CAST IRON BOXES AT THE TRANSITION WHERE THE NON-METALLIC BURIED UTILITY CONNECTS TO THE EXISTING METALLIC UTILITY.
8. EXTEND WIRE INTO VALVE BOXES AND TERMINATE WITH A WIRE CONNECTOR. TERMINATE WIRE FROM LINES EXTENDING FROM MAINS TO FIRE RISERS OR BUILDING SERVICES 12" (300MM) ABOVE GRADE AND CAP WITH A WIRE CONNECTOR.



TYPICAL LATERAL INSTALLATION (E/ONE)
NOT TO SCALE



ESD 08-0022 REV. 2. 6/08

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PLANNING FILE NO.: P22-47

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	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

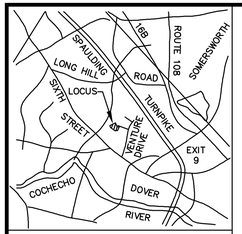
DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

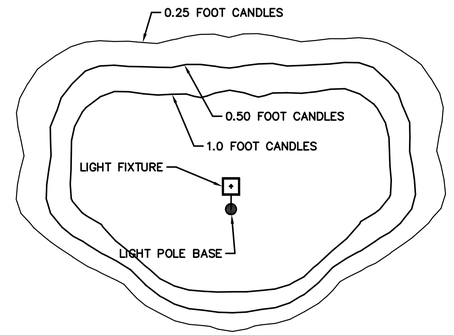
PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

DETAIL SHEET

18

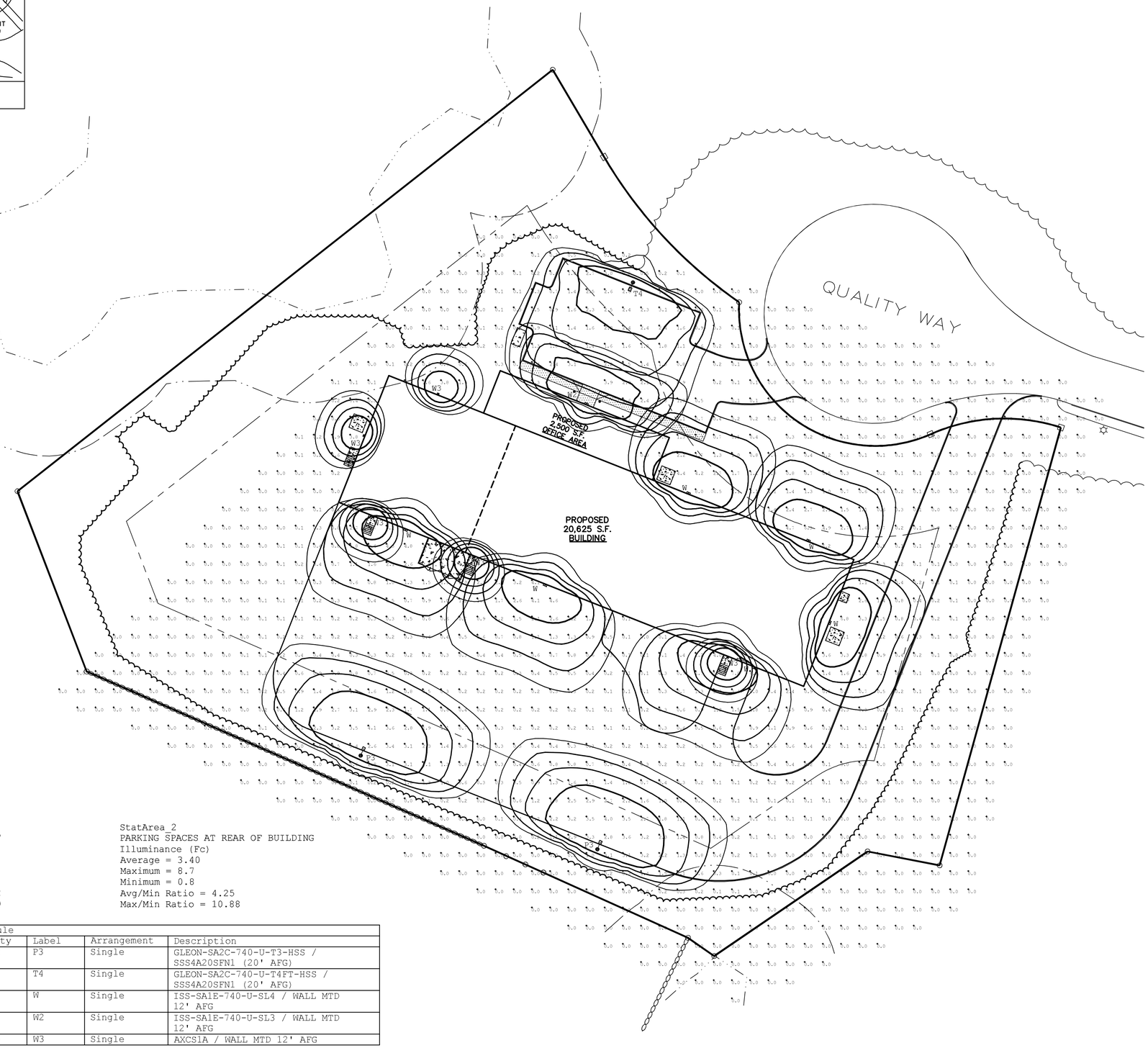


LOCATION PLAN
(NO SCALE)



TYPICAL LIGHT SPREAD
NOT TO SCALE

NOTE:
1. LIGHTING PHOTOMETRICS PREPARED BY CHARRON INC. HOOKSETT, NH.



StatArea_1
EMPLOYEE PARKING LOT
Illuminance (Fc)
Average = 1.86
Maximum = 3.9
Minimum = 0.5
Avg/Min Ratio = 3.72
Max/Min Ratio = 7.80

StatArea_2
PARKING SPACES AT REAR OF BUILDING
Illuminance (Fc)
Average = 3.40
Maximum = 8.7
Minimum = 0.8
Avg/Min Ratio = 4.25
Max/Min Ratio = 10.88

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	2	P3	Single	GLEON-SA2C-740-U-T3-HSS / SSS4A20SFN1 (20' AFG)
	1	T4	Single	GLEON-SA2C-740-U-T4FT-HSS / SSS4A20SFN1 (20' AFG)
	6	W	Single	ISS-SA1E-740-U-SL4 / WALL MTD 12' AFG
	1	W2	Single	ISS-SA1E-740-U-SL3 / WALL MTD 12' AFG
	5	W3	Single	AXCS1A / WALL MTD 12' AFG

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

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PLANNING FILE NO.: P22-47

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CIVIL & WATERFRONT ENGINEERING
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Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2.	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1.	REV. PER TRC COMMENTS	SJH	7-28-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

LIGHTING PLAN

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

19

Project		Catalog #		Type	
Prepared by		Notes		Date	



McGraw-Edison

GLEON Galleon

Area / Site Luminaire

Typical Applications

Outdoor • Parking Lots • Walkways • Roadways • Building Areas

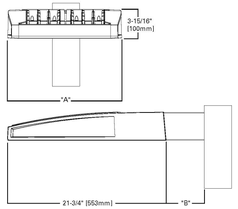
Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 9

Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 540W)
- Efficacy up to 156 lumens per watt

Dimensional Details



Product Certifications

Product Features

LumenGate Technology · Enlighted · WaveLinx · Light Architect™

Connected Systems

- WaveLinx
- Enlighted

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length[1]	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	--
9-10	33-3/4"	7"	16"	--	--

NOTES:
For arm selection requirements and additional line art, see Mounting Details section.

Project		Catalog #		Type	
Prepared by		Notes		Date	



McGraw-Edison

Impact Elite LED

Wall Mount Luminaire

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Energy and Performance Data page 3
- Control Options page 4

Quick Facts

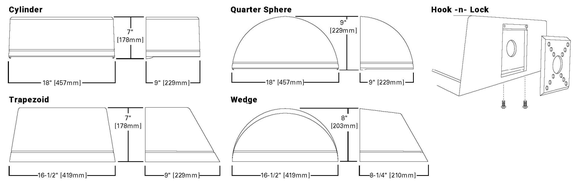
- 10 Optical Distributions
- Lumen packages range from 2,459 to 8,123 (20W - 66W)
- Efficacy up to 143 lumens per watt

Product Certifications

Connected Systems

- WaveLinx
- Enlighted

Dimensional Details



Steel Poles



SSS SQUARE
STRAIGHT STEEL

Catalog #		Type	
Project			
Comments		Date	
Prepared by			

FEATURES
- ASTM Grade steel base plate with ASTM A366 base cover
- Hand hole assembly 3" x 5" on 5" and 6" pole; and 2" x 4" on 4" pole
- 10'-39' mounting heights
- Drilled or tenon (specify)

DESIGN CONSIDERATIONS

Wind induced vibrations resulting from steady, unidirectional winds and other aerodynamic forces, as well as vibration and coefficient of height factors for non-grounded mounted installations (e.g., installations on bridges or buildings) are not included in this document. The information contained herein is for general guidance only and is not a replacement for professional judgement. Consult with a professional, and local and federal standards, before ordering to ensure product is appropriate for the intended purpose and installation location. Also, please review Eaton's Light Pole White Paper for risk factors and design considerations. Learn more.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Eaton or visit www.eaton.com/lighting for available options, accessories and ordering information.

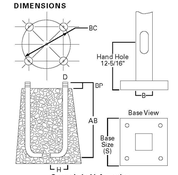
ORDERING INFORMATION

SAMPLE NUMBER: SSA5A20SFM1XG

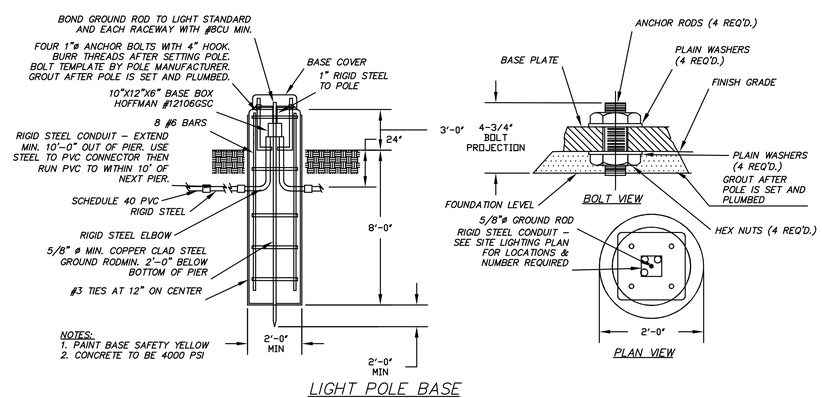
Product Family	Shaft Size (Inches)[1]	Wall Thickness (Inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Arm Lengths (Feet)	Options (Add as Suffix)
SSS=Square Straight Steel	**4**=4" **5**=5" **6**=6"	**A**=0.120" **M**=0.188" **X**=0.250"	**10**=10' **15**=15' **20**=20' **25**=25' **30**=30' **35**=35' **39**=39'	**S**=Square Steel Base	**F**=Dark Bronze **G**=Galvanized Steel **J**=Summit White **K**=Carbon Bronze **L**=Dark Platinum **R**=Hartford Green **S**=Silver **T**=Graphite Metallic **V**=Grey **W**=White **X**=Custom Color **Y**=Black	**2**=2-3/8" O.D. Tenon (4" Long) **3**=3-1/2" O.D. Tenon (5" Long) **4**=4" O.D. Tenon (6" Long) **9**=3" O.D. Tenon (4" Long) **6**=2-3/8" O.D. Tenon (6" Long) **7**=4" O.D. Tenon (10" Long) **A**=Type A Drilling **C**=Type C Drilling **E**=Type E Drilling **F**=Type F Drilling **G**=Type G Drilling **J**=Type J Drilling **K**=Type K Drilling **M**=Type M Drilling **N**=Type N Drilling **R**=Type R Drilling **S**=Standard Upsweep Arm **Z**=Type Z Drilling	**1**=Single **2**=2 at 180° **3**=Triple[4] **4**=4 at 90° **5**=2 at 90° **X**=None	**X**=None **2**=2' **2.5**=2.5' **4**=4' **6**=6' **8**=8'	**A**=1/2" Tapped Hub[3] **B**=3/4" Tapped Hub[3] **C**=Convenience Outlet[4] **E**=GFCI Convenience Outlet[4] **G**=Ground Lug **H**=Additional Hand Hole[4] **V**=Vibration Dampener

NOTES: 1. All shaft sizes nominal. **2.** Square poles are 3 at 90°, round poles are 3 at 120°. **3.** Tapped Hub is located 6" below the pole top and on the same side of pole as hand hole, unless specified otherwise. **4.** Outlet is located 4" above base and on same side of pole as hand hole, unless specified otherwise. Receptacle not included, provision only. **5.** Additional hand hole is located 12" below pole top and 90° from standard hand hole location, unless otherwise specified.

DIMENSIONS



See technical information.



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PLANNING FILE NO.: P22-47

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	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

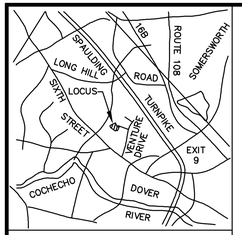
DATE: 6-16-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

LIGHTING DETAILS

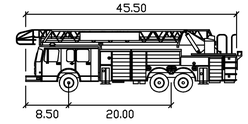
APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

20



LOCATION PLAN
(NO SCALE)



Dover ladder feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0

QUALITY WAY

PROPOSED
7,500 S.F.
OFFICE AREA

PROPOSED
20,625 S.F.
BUILDING

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

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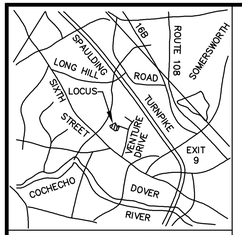
DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

DOVER LADDER TRUCK MOVEMENT PLAN

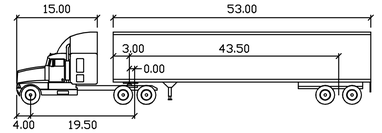
PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

21

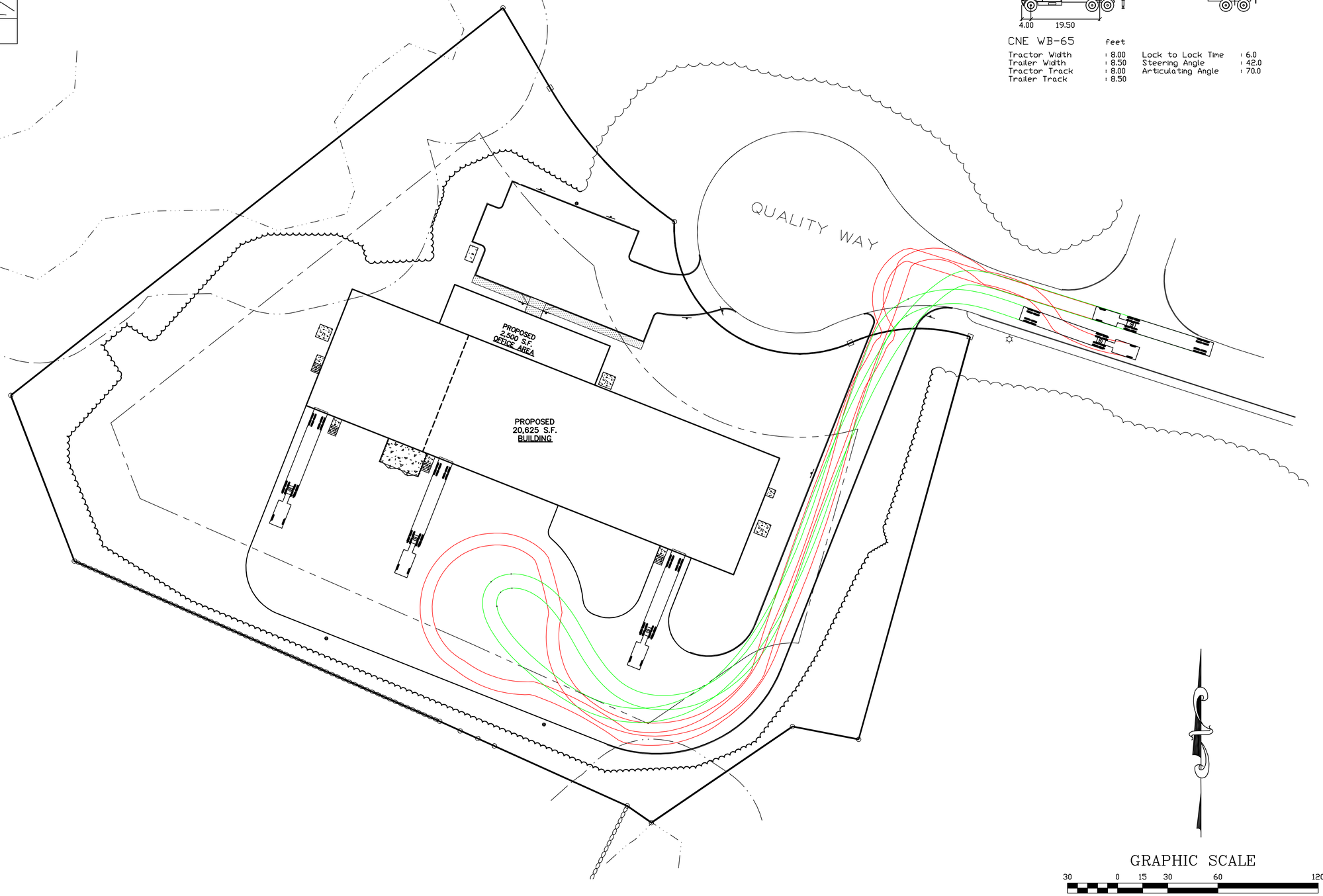


LOCATION PLAN
(NO SCALE)



CNE WB-65 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 42.0
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

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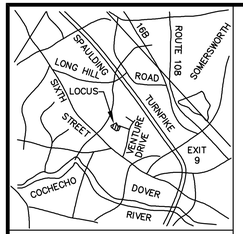
DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SITE.DWG

TRUCK MOVEMENT PLAN

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

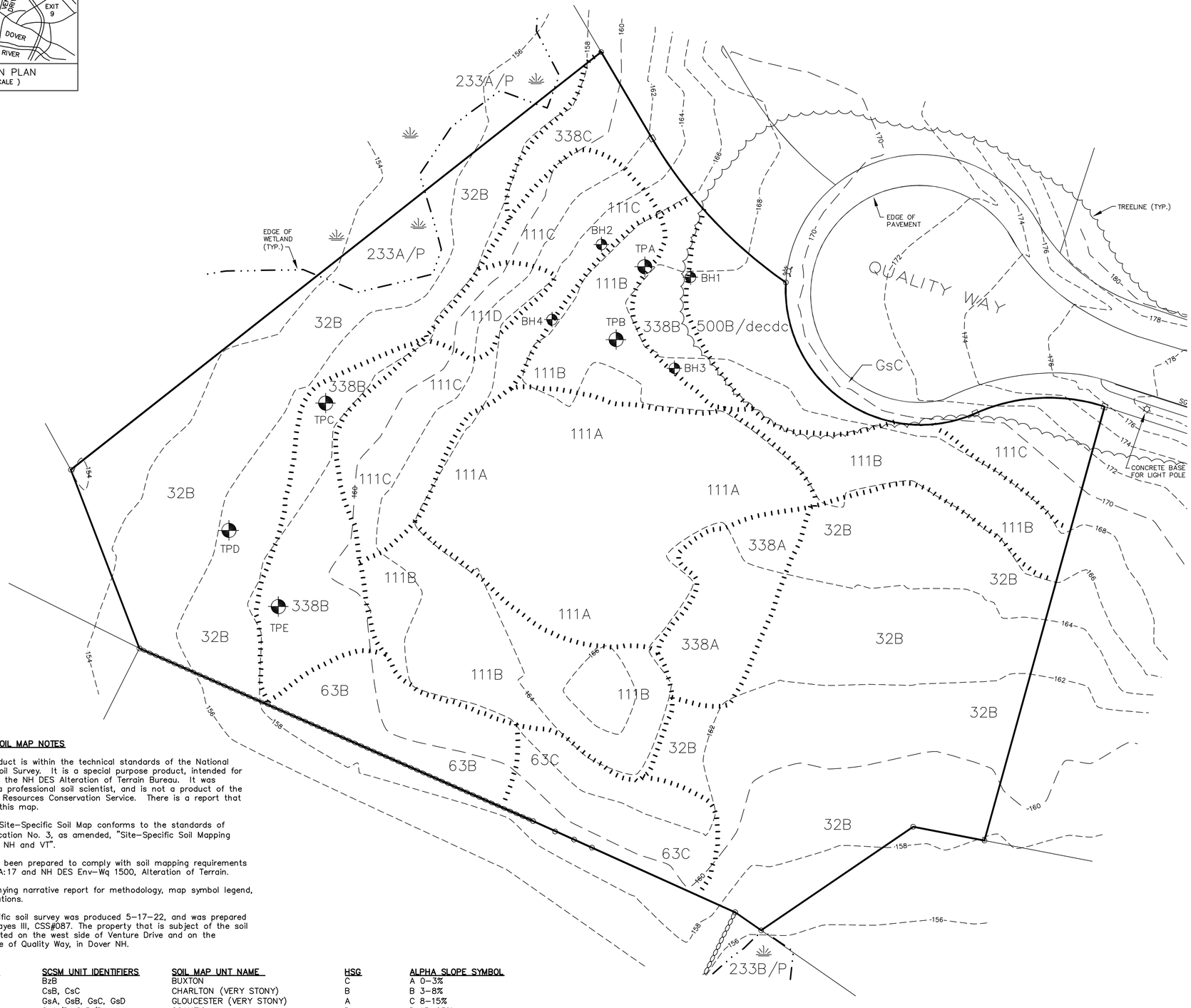
PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

22



LOCATION PLAN
(NO SCALE)





LEGEND

- EXISTING GRADE
- SOIL BOUNDARY
- EDGE OF JURISDICTIONAL WETLAND / SOIL BOUNDARY
- PROPERTY LINE
- WETLANDS
- 953B — SOIL TYPE
- BH2 — BOREHOLE INFILTRATION TEST
- TPA — TEST PIT

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

SITE-SPECIFIC SOIL MAP NOTES

1. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for submission to the NH DES Alteration of Terrain Bureau. It was produced by a professional soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a report that accompanies this map.
2. This detailed Site-Specific Soil Map conforms to the standards of SSSNNE Publication No. 3, as amended, "Site-Specific Soil Mapping Standards for NH and VT".
3. This map has been prepared to comply with soil mapping requirements of RSA 485-A:17 and NH DES Env-Wq 1500, Alteration of Terrain.
4. See accompanying narrative report for methodology, map symbol legend, and interpretations.
5. The site specific soil survey was produced 5-17-22, and was prepared by John P. Hayes III, CSS#087. The property that is subject of the soil survey is located on the west side of Venture Drive and on the southwest side of Quality Way, in Dover NH.

SSSM SYMBOL	SCSM UNIT IDENTIFIERS	SOIL MAP UNT NAME	HSG	ALPHA SLOPE SYMBOL
32	BzB	BUXTON	C	A 0-3%
63	CsB, CsC	CHARLTON (VERY STONY)	B	B 3-8%
111	GsA, GsB, GsC, GsD	GLOUCESTER (VERY STONY)	A	C 8-15%
233	ScA/P, ScB/P	SCANTIC	D	D 15-25%
338	EaA, EaB, EaC	ELMWOOD (VERY STONY)	C	E 25-50%
500	decdc	UDORTHENTS LOAMY	C	F >50%

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1	REV. PER TRC COMMENTS	SJH	7-28-22

DATE: 6-16-22
SCALE: 1"=30'
DRAWN BY: GMS
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:21094
FILE: SSSM.DWG

SITE SPECIFIC SOIL MAP

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

23

Test Pit: A **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-2	10 YR 3/3	Fine Sandy Loam	Massive	Friable	None	
2-38	10 YR 4/6	Loamy Sand	Massive	Friable	None	
38-72	10 YR 4/4	Loamy Sand	Massive	Friable	None	Roots few,fine @ 43"

Seasonal High Water (in): 72
Observed Water (in): 72"+
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Gloucester
NHDES Soil Group: A
Hydrologic Soil Group: 1

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:

Test Pit: B **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-3	10 YR 3/3	Fine Sandy Loam	Massive	Friable		Woods
3-30	10 YR 4/6	Loamy Sand	Massive	Friable	15% Cobbles	Roots few,fine @ 29"
30-90	10 YR 4/3	Silt Loam	Blocky	Firm	30"+ 5YR 4/4	

Seasonal High Water (in): 30
Observed Water (in): 90"
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Elmwood
NHDES Soil Group: C
Hydrologic Soil Group: 3

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:

NEW HAMPSHIRE Designer of Subsurface Disposal Systems * * * Douglas J. LaRosa No. 849 Department of Environmental Services

Test Pit: C **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-5	10 YR 3/3	Fine Sandy Loam	Massive	Friable		
5-18	10 YR 5/6	Loamy Sand	Massive	Friable		Roots Many Fine@17"
18-84	5 Y 4/4	Silt Loam	Platy	Firm	5 YR 4/4	

Seasonal High Water (in): 18"
Observed Water (in): None
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Buxton
NHDES Soil Group: 3
Hydrologic Soil Group: C

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:

Test Pit: D **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-5	10 YR 3/3	Fine Sandy Loam	Massive	Friable		
5-23	10 YR 5/6	Loamy Sand & Gravel	Single Grain	Granular		Roots Many Fine @22"
23-88	10 YR 4/6	Medium Sand & Gravel	Single Grain	Loose	24" 10YR 4/4	

Seasonal High Water (in): 18"
Observed Water (in): None
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Buxton
NHDES Soil Group: 3
Hydrologic Soil Group: C

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:

NEW HAMPSHIRE Designer of Subsurface Disposal Systems * * * Douglas J. LaRosa No. 849 Department of Environmental Services

Test Pit: E **Date:** 6/7/2022

Depth (in)	Color	Texture	Structure	Consistence	Redox Features	Notes
0-4	10 YR 3/3	Fine Sandy Loam	Massive	Friable		
4-22	10 YR 6/6	Medium Sand	Granular	Friable		Roots few,fine @ 22"
22-84	5Y 4/4	Silt Loam	Single Grain	Loose	23" 5YR 4/4	

Seasonal High Water (in): 22"
Observed Water (in): 84"
Restrictive Layer (in): None
Bedrock/Refusal (in): None

Soil Series: Buxton
NHDES Soil Group: 3
Hydrologic Soil Group: C

Percolation Test

Depth Perc Test	Inches Per Hour
NA	NA

Notes:

NEW HAMPSHIRE Designer of Subsurface Disposal Systems * * * Douglas J. LaRosa No. 849 Department of Environmental Services

Stormwater Infiltration Testing Log

6/7/2022

Project Name: Weave Filtration **Date:** 6/7/2022
Project Address: Quality Way **Weather:** Sunny, 81*
Testing Company: Civilworks NE **Tester's Name:** Guillermo M. Sepulveda
Phone Number: (603) 749-0443 **Email Address:** gsepulveda@civilworksne.com

Test Number: 1 **Test Pit/Boring Hole Number:** BH1 **Test Method:** Borehole Infiltration Test
Test Depth (feet): 4 **Surface Elevation (feet):** 164 **Instrument Diameter (inches):** 4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:30AM	0	24	0
8:30AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:38PM		24			Start
	1:38PM		24	24	
1:56PM		24			
	2:56PM		23	23	
3:16PM		24			
	4:16PM		23	23	
4:18PM		24			
	5:18PM		22.5	22.5	Finish

Stabilized Infiltration Testing Rate (inches per hour): 22.5 Using Trial 4

Notes:
Proposed parking lot area

Stormwater Infiltration Testing Log

6/7/2022

Project Name: Weave Filtration **Date:** 6/7/2022
Project Address: Quality Way **Weather:** Sunny, 81*
Testing Company: Civilworks NE **Tester's Name:** Guillermo M. Sepulveda
Phone Number: (603) 749-0443 **Email Address:** gsepulveda@civilworksne.com

Test Number: 2 **Test Pit/Boring Hole Number:** BH2 **Test Method:** Borehole Infiltration Test
Test Depth (feet): 1.5 **Surface Elevation (feet):** 164 **Instrument Diameter (inches):** 4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:36AM	0	24	0
8:36AM	24	0	24

Infiltration Testing

Time 1:	Time 2:	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:41PM		24			Start
	1:11PM		24	48	
1:12PM		24			
	1:50PM		24	37.89	
1:57PM		24			
	2:38PM		24	35.12	
2:39PM		24			
	3:21PM		24	34.29	Finish

Stabilized Infiltration Testing Rate (inches per hour): 34.29 Using Trial 4

Notes:
Proposed parking lot area

Stormwater Infiltration Testing Log

6/7/2022

Project Name: Weave Filtration **Date:** 6/7/2022
Project Address: Quality Way **Weather:** Sunny, 81*
Testing Company: Civilworks NE **Tester's Name:** Guillermo M. Sepulveda
Phone Number: (603) 749-0443 **Email Address:** gsepulveda@civilworksne.com

Test Number: 3 **Test Pit/Boring Hole Number:** BH3 **Test Method:** Borehole Infiltration Test
Test Depth (feet): 3 **Surface Elevation (feet):** 164.5 **Instrument Diameter (inches):** 4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:39AM	0	24	0
8:39AM	24	0	24

Infiltration Testing

Time:	Time Interval HR	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:44PM		24			Start
	1:20PM		24	40	
1:21PM		24			
	2:07PM		24	31.3	
2:07PM		24			
	2:51PM		24	32.73	
2:52PM		24			
	3:38PM		24	31.3	Finish

Stabilized Infiltration Testing Rate (inches per hour): 31.3 Using Trial 4

Notes:
Proposed office area

Stormwater Infiltration Testing Log

6/7/2022

Project Name: Weave Filtration **Date:** 6/7/2022
Project Address: Quality Way **Weather:** Sunny, 81*
Testing Company: Civilworks NE **Tester's Name:** Guillermo M. Sepulveda
Phone Number: (603) 749-0443 **Email Address:** gsepulveda@civilworksne.com

Test Number: 4 **Test Pit/Boring Hole Number:** BH4 **Test Method:** Borehole Infiltration Test
Test Depth (feet): 1 **Surface Elevation (feet):** 164.5 **Instrument Diameter (inches):** 4

Soil Characterization (See Test Pit Logs)

Depth (inches):	Soil Texture:	Limiting Layers Type and Depth (feet):

Presoak (Presoaked on 6/6/2022)

Time:	Time Interval (HRS):	Measurement, (inches):	Drop in water level, (inches):
8:43AM	0	24	0
8:43AM	24	0	24

Infiltration Testing

Time:	Time Interval HR	Measurement, (inches):	Drop in water level, (inches):	Infiltration rate (inches per hour):	Remarks:
12:45PM		24			Start
	1:03PM		24	80	
1:06PM		24			
	1:33PM		24	53.33	
1:59PM		24			
	2:28PM		24	49.66	
2:32PM		24			
	3:02PM		24	48	
3:19PM		24			
	3:52PM		24	43.64	Finish

Stabilized Infiltration Testing Rate (inches per hour): 43.64 Using Trial 4

Notes:
Proposed office area

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-47

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	REV. PER 2ND TRC COMMENTS	SJH	9-1-22
1	REV. PER TRC COMMENTS	SJH	7-28-22

DESIGN BY: SRD
DRAWN BY: SRD
SCALE: AS SHOWN
DATE: 6-16-22
APPROVED BY:SJH
PROJECT NO: 21094
FILE: SITE.DWG

TEST PIT LOGS

APPLICANT:
WEAVE FILTRATION LLC
100 TRI CITY ROAD
UNIT 117
SOMERSWORTH, NH 03878

PROJECT:
WEAVE FILTRATION
QUALITY WAY
DOVER, NH

24

TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



1 FLOOR PLAN
3/32" = 1'-0"

No. Description Date

Revision Schedule

Project Info:

Weave Filtration

Quality Way
Dover, NH

Sheet Status:

Latest Release:
Issued For: Planning Board Set
Org. Issue Date: n.f.c.

JOB NO: 20025
DRAFTED: JMT
CHECKED: JMT
SCALE: 3/32" = 1'-0"

Sheet Title:

FLOOR PLAN

Sheet Number:

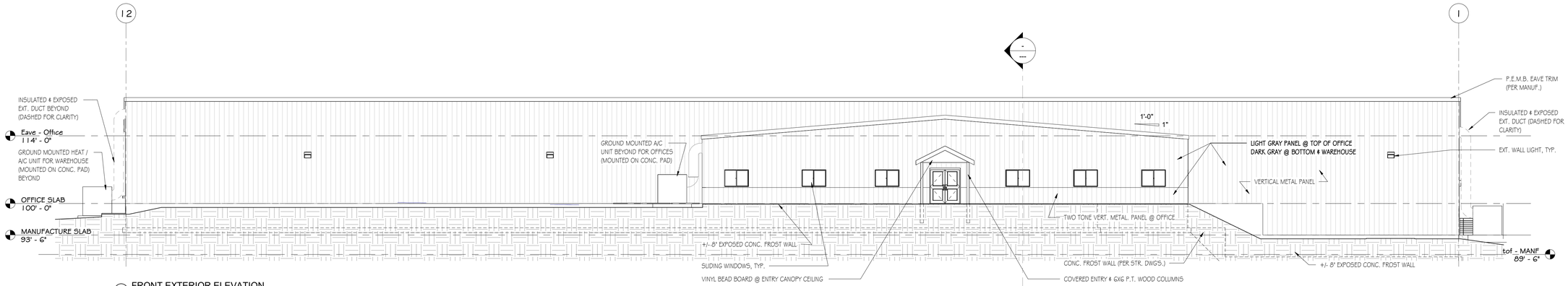
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Printed on: 9/1/2022

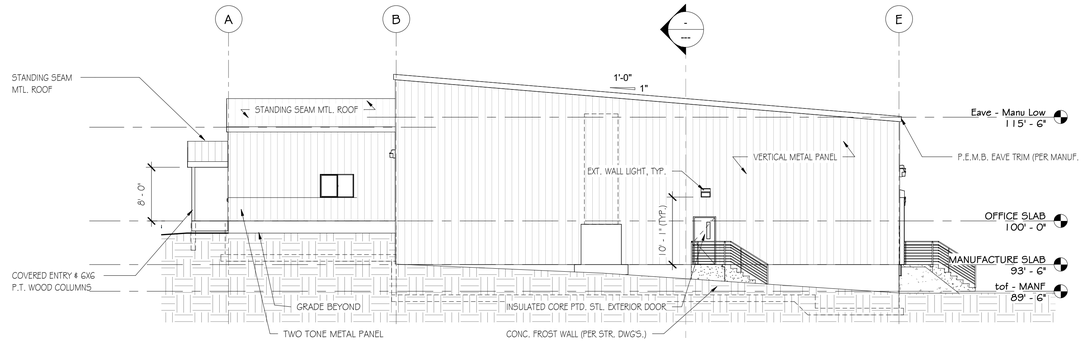
PLANNING BOARD SET
9/1/2022

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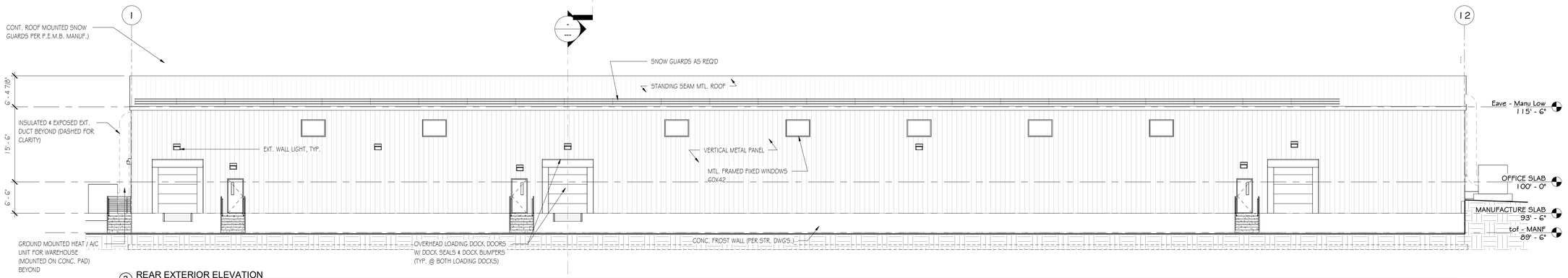
TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



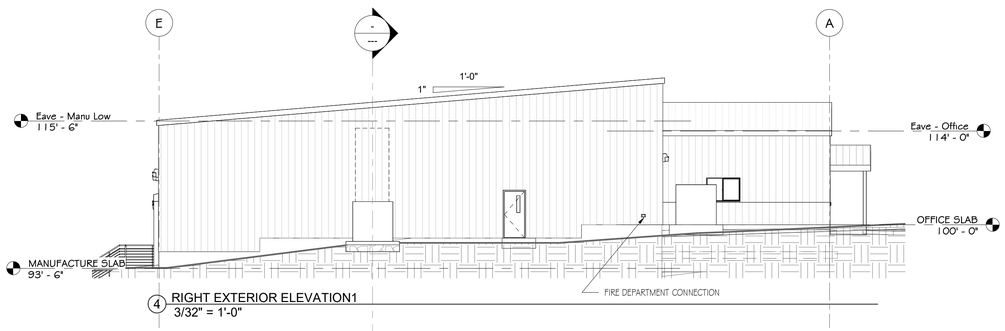
1 FRONT EXTERIOR ELEVATION
3/32" = 1'-0"



2 LEFT EXTERIOR ELEVATION
3/32" = 1'-0"



3 REAR EXTERIOR ELEVATION
3/32" = 1'-0"



4 RIGHT EXTERIOR ELEVATION1
3/32" = 1'-0"

PLANNING BOARD SET
9/1/2022

No.	Description	Date

Revision Schedule

Project Info:

Weave Filtration

Quality Way
Dover, NH

Sheet Status:

Latest Release:
Issued For: Planning Board Set
Org. Issue Date: n.f.c.

JOB NO.: 20025
DRAFTED: JMT
CHECKED: JMT

SCALE: 3/32" = 1'-0"

Sheet Title:

EXTERIOR ELEVATIONS

Sheet Number:

A3.1

Printed on: 9/1/2022

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TW DESIGNS

Street View
Weave Filtration

R1

09/01/22

Legend

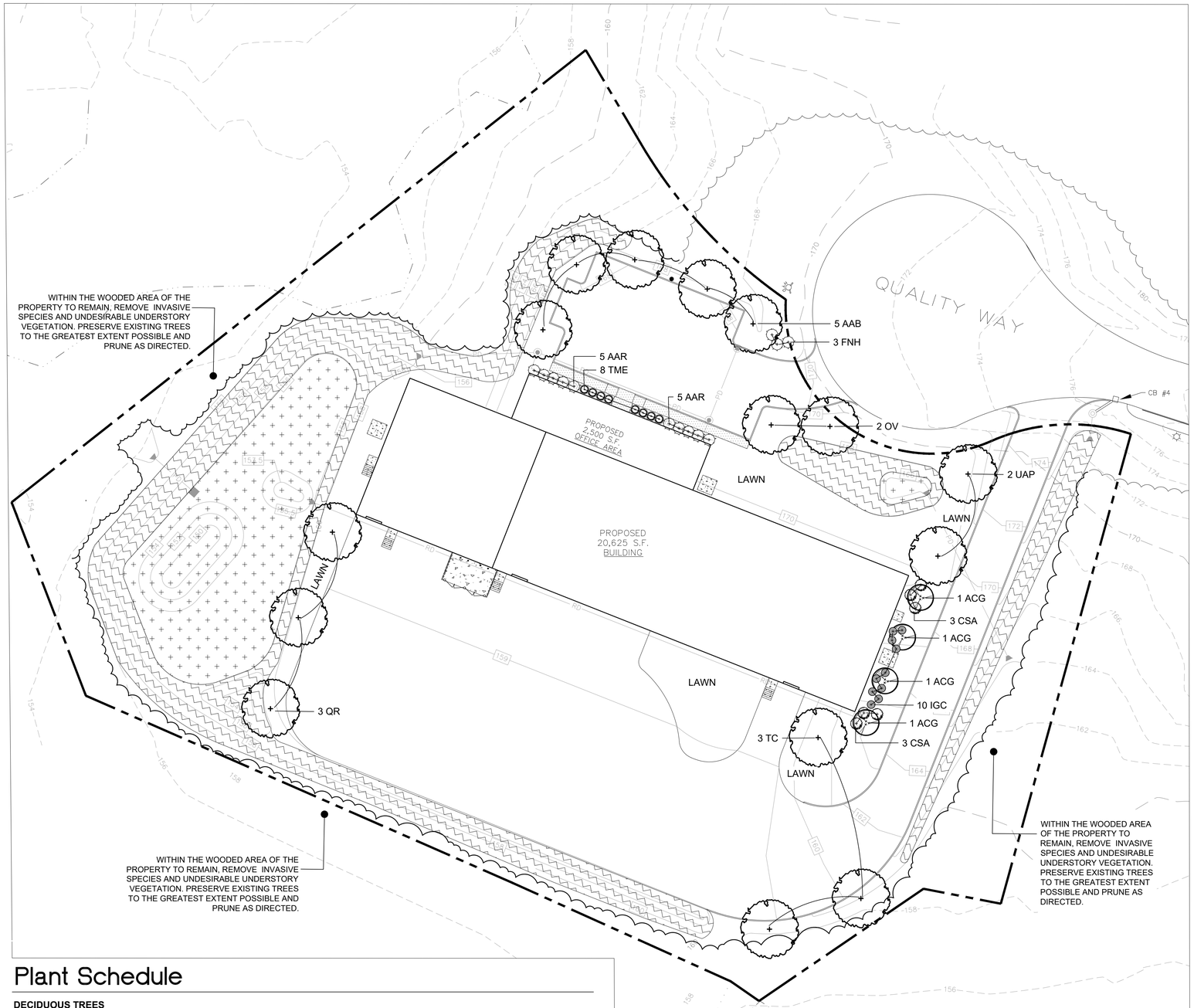
	DECIDUOUS SINGLE-STEMMED TREE PLANTING, SEE 1/L2.0; 2/L2.0
	DECIDUOUS MULTI-STEMMED TREE PLANTING, SEE 3/L2.0
	SHRUB PLANTING, SEE 4/L2.0
LAWN	ALL DISTURBED AREAS WITHOUT A HATCH, SEE 5/L2.0
	WET MEADOW / POND SEED MIX, SEE 6/L2.0
	DRY SITE RESTORATION SEED MIX, SEE 7/L2.0

GENERAL NOTES:

1. SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
2. PLANT LOCATIONS SHOWN ON THE PLANTING PLAN ARE SUBJECT TO FIELD MODIFICATION TO ACCOMMODATE EXISTING CONDITIONS. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT.
3. SEE SHEET L2.0 FOR LANDSCAPE DETAILS.
4. CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

PLANTING NOTES:

1. PLEASE REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN.
2. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING AND NEW UTILITY LINE LOCATIONS PRIOR TO PLANTING, AND SHALL REPORT ANY CONFLICT TO THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
3. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN SOCIETY OF NURSERY MEN, INC. LATEST EDITION.
4. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL THE PROPOSED PLANT MATERIAL FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. NO PLANTS SHALL BE PLANTED BEFORE THE ACCEPTANCE OF ROUGH GRADING. THE BASE OF THE FLARE OF THE TREE TRUNK SHALL BE EXPOSED, IF NECESSARY, AND PLACED 2" ABOVE FINISH GRADE.
5. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES WILL BE PLANTS WITH EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER COLOR, LEAF COLOR, FRUIT COLOR, AND TIME OF BLOOM, AS APPROVED BY THE LANDSCAPE ARCHITECT.
6. EXISTING LOAM: STOCKPILING OF EXISTING LOAM IS SPECIFIED ELSEWHERE. REMOVE CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND OTHER FOREIGN MATERIALS.
7. ADDITIONAL LOAM: IF STOCKPILED LOAM QUANTITY IS INSUFFICIENT, PROVIDE LOAM, WHICH IS A "FINE SANDY LOAM", OR A "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS AND BASED ON THE "U.S.D.A. CLASSIFICATION SYSTEM." IT SHALL BE OF UNIFORM COMPOSITION, WITHOUT ADMIXTURE OF SUBSOIL. LOAM SHALL HAVE AN ACIDITY RANGE OF PH 5.8 TO PH 7.0 AND SHALL CONTAIN NOT LESS THAN 4% NOR MORE THAN 10% ORGANIC MATTER AS DETERMINED BY THE LOSS OF IGNITION OF OVEN-DRIED SAMPLES. PROVIDE LOAM WHICH IS FERTILE, FRIABLE, NATURAL LOAM FREE FROM SUBSOIL, CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND ANY FOREIGN MATERIALS.
8. PINE MULCH: PROVIDE PARTIALLY DECOMPOSED MINIMUM SIX MONTH AGED FINELY SHREDDED PINE BARK MULCH WITH DARK BROWN COLOR AND FREE OF WEEDS, EXCESSIVE FINE PARTICLES, STRINGY MATERIAL, AND CHUNKS OF WOOD THICKER THAN ¼". PROVIDE BARK MULCH APPROVED BY THE LANDSCAPE ARCHITECT. APPLY TACKIFIED MULCH TO ALL SEEDED AREAS.
9. ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING.
10. ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING.
11. LESS OTHERWISE INDICATED, DICTATED BY CONDITIONS AT THE SITE, AND DIRECTED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE, BACKFILL SHALL CONSIST OF UNAMENDED SOIL EXCAVATED FROM THE PLANTING PIT. BACKFILL IN 3-4" LAYERS AND CONSOLIDATE EACH LAYER WITH WATER TO ELIMINATE VOIDS AND ARE POCKETS BEFORE PLACING SUBSEQUENT LAYERS. CONTINUE UNTIL BACKFILL HAS REACHED FINISHED GRADE. WATER THOROUGHLY WHEN EXCAVATION IS BACK FILLED AND CONTINUE WATERING UNTIL SATURATED. IF EXISTING UNAMENDED SOIL IS NOT ACCEPTED, PROVIDE PLANTING SOIL MIXTURE CONSISTING OF 7 PARTS LOAM AND 1 PART HUMUS. MIX QUANTITY OF FERTILIZER AND SOIL AMENDMENTS AS RECOMMENDED BY SOIL ANALYSIS AND APPROVED BY THE LANDSCAPE ARCHITECT.
12. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
13. LOAMING: LOOSEN SUBGRADE AND EXISTING LOAM AREAS BY DISCING OR ROTOTILLING TO MINIMUM DEPTH OF 6". REMOVE STONES GREATER THAN 2" AND ALL RUBBISH AND DEBRIS. PLACE LOAM IN TWO EQUAL LIFTS MIXING FIRST APPLICATION INTO LOOSENED SUBGRADE THEN PLACE SECOND LIFT TO BRING LOAM AFTER SETTLING AND COMPACTING TO THE LINES AND GRADES SHOWN IN THE CONTRACT DOCUMENTS, 6" DEEP MINIMUM. DO NOT HANDLE LOAM OR SUBSOIL IF IT IS WET OR FROZEN.
14. AFTER LOAM HAS BEEN SPREAD, IT SHALL BE CAREFULLY PREPARED BY SCARIFYING AND HAND RAKING. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, STUMPS, LITTER AND FOREIGN MATTER, AND STONES OVER ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE LOAM. LOAM SHALL ALSO BE FREE OF SMALLER STONES IN EXCESSIVE QUANTITIES AS DETERMINED BY THE LANDSCAPE ARCHITECT.
15. FINE GRADING: SET SUFFICIENT GRADE STAKES FOR CHECKING THE FINISHED GRADES. STAKES MUST BE SET AT THE BOTTOM AND TOP OF SLOPES. GRADES SHALL BE ESTABLISHED THAT ARE ACCURATE TO 1/10TH OF A FOOT EITHER WAY. CONNECT CONTOURS AND SPOT ELEVATIONS WITH AN EVEN SLOPE. ALL GRADING WILL INSURE DRAINAGE AWAY FROM STRUCTURES.
16. FINE GRADE LAWN AREAS TO SMOOTH, FREE DRAINING, EVEN SURFACES WITH FINE TEXTURE. ROLL, RAKE AND DRAW LAWN AREAS TO FLATTEN RIDGES AND FILL DEPRESSIONS, EXCEPT AT SELECT AREAS SHOW ON THE DRAWINGS. CONTROL MOISTURE CONTENT TO MAINTAIN OPTIMUM CONDITIONS, BUT DO NOT CREATE A MUDDY CONDITION.
17. ROLLING - TYPICAL: ROLL THE ENTIRE AREA WITH A HAND ROLLER WEIGHTING NOT MORE THAN 100 POUNDS. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM AND THE SURFACE SHALL BE REGARDED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE OR TO THE SHAPES AND CONFIGURATIONS AS SHOWN ON THE DETAILS.
18. THE SILT FENCE SHALL BE LIMIT OF SEEDING UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL AREAS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE SEEDED AS INDICATED ON THE DRAWINGS.
19. IN CASE OF DISCREPANCIES BETWEEN THE QUANTITIES SHOWN ON THE PLANT SCHEDULE AND THE QUANTITIES SHOWN ON THE PLANTING PLAN, THE QUANTITIES ON THE PLANTING PLAN SHALL BE PROVIDED BY THE CONTRACTOR.



Plant Schedule

DECIDUOUS TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	INSTALLED SIZE	REMARKS
5	AAB	ACER FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	3"-3 1/2" CAL	B&B
4	ACG	AMELANCHIER CANADENSIS 'GLENFORM'	RAINBOW PILLAR SERVICEBERRY	6'-7' HT	MULTI-STEMMED
2	OV	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	3"-3 1/2" CAL	B&B
3	QR	QUERCUS RUBRA	NORTHERN RED OAK	3"-3 1/2" CAL	B&B
3	TC	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	3"-3 1/2" CAL	B&B
2	UAP	ULMUS AMERICANA "PRINCETON"	PRINCETON AMERICAN ELM	3"-3 1/2" CAL	B&B
19					

SHRUBS

10	AAR	AMELANCHIER ALNIFOLIA REGENT	REGENT SERVICEBERRY	18" - 24" HT	CONTAINER
6	CSA	CORNUS SERICEA 'ARCTIC FIRE'	ARCTIC FIRE RED OSIER DOGWOOD	2 1/2'-3' HT	CONTAINER
3	FNH	FORSYTHIA 'NH GOLD'	NH GOLD FORSYTHIA	2'-2 1/2' HT	CONTAINER
10	IGC	ILEX GLABRA COMPACTA	COMPACT INKBERRY	2'-2 1/2' HT	CONTAINER
8	TME	TAXUS MEDIA 'EVER-LOW'	EVER-LOW YEW	2 1/2'-3' SPD	CONTAINER
37					

DRAWING SUBMITTED FOR CITY REVIEW

Ironwood
Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.FeWood.com

WEAVE FILTRATION

QUALITY WAY
DOVER, NEW HAMPSHIRE

SHEET TITLE

LANDSCAPE PLAN

REVISION LOG

REV#	DATE	DESCRIPTION
1	7-26-2022	REV. PER TRC COMMENTS
2	8-29-2022	REV. PER TRC COMMENTS

PROJECT NO.	22036.0
DESIGN BY	J. HYLAND / K.OSGOOD
DRAWN BY	K.OSGOOD
CHECKED BY	J. HYLAND
DATE	JUNE 16, 2022

SCALE

0' 30' 60'
SCALE: 1" = 30'-0"

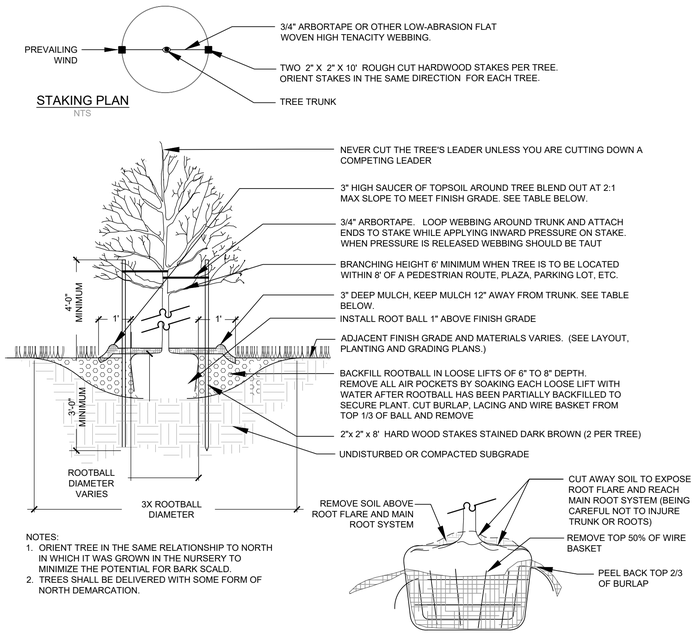
SEAL

JEFFREY R. HYLAND
026
CERTIFIED LANDSCAPE ARCHITECT
STATE OF NEW HAMPSHIRE

L1.0

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C:\Users\facto\Documents\Clients\Ironwood\Weave Filtration, Dover\ID-SP-22082922.dwg; Kate Osgood 8/29/2022 12:06:15 PM

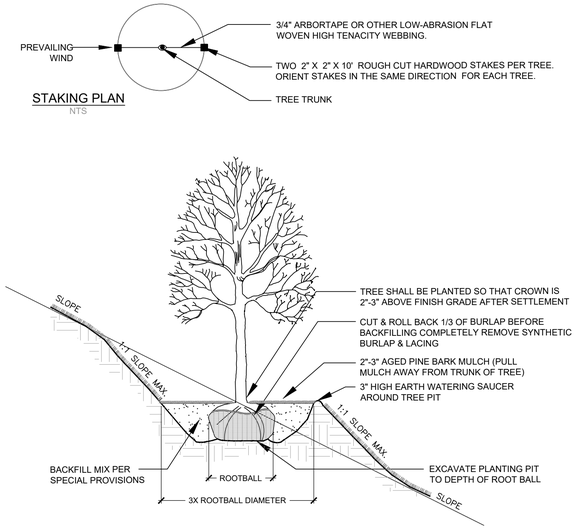


Deciduous Tree Planting

Not to Scale

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1 L2.0

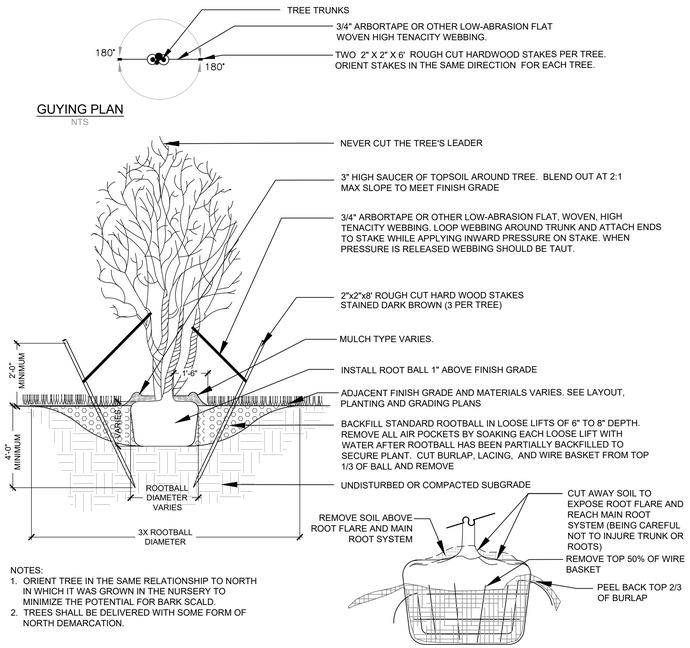


Deciduous Tree Planting: on Slope

Not to Scale

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2 L2.0

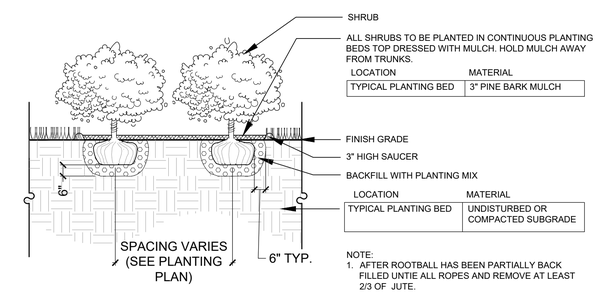


Deciduous Multi-Stemmed Tree Planting

Not to Scale

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3 L2.0

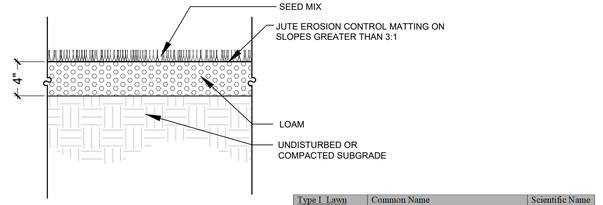


Shrub Planting

Not to Scale

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4 L2.0



Type I Lawn Percent by weight	Common Name	Scientific Name
40%	Celmfine, Rebel II or Tribute Tall Fescue	
15%	Palmer II Perennial Ryegrass	
10%	Jamestown Chewings Fescue	
10%	Reliant Hard Fescue	
10%	Bridsfoot Trefoil	*Arvenis* variety
5%	Switchgrass	
5%	White Clover	
5%	Redtop	*Streaker* variety

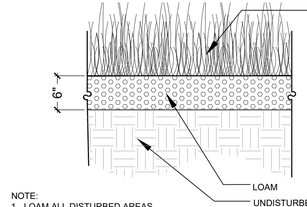
Apply at a rate of 265/lbs/acre

Loam and Lawn Seed Mix

Not to Scale

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5 L2.0



Botanical Name	Common Name
Carex lurida	Lurid Sedge
Carex scoparia	Blunt Broom Sedge
Verbena hastata	Blue Vervain
Carex lupulina	Hop Sedge
Scirpus atrovirens	Green Bulrush
Panicum rigidulum	Redtop Panic Grass
Deschampsia cespitosa	Tufted Hairgrass
Bidens aristosa	Tickseed Sunflower/Bur Marigold
Eleocharis palustris	Creeping Spike Rush
Juncus effusus	Soft Rush
Carex crinita	Fringed Sedge
Mimulus ringens	Square Stemmed Monkey Flower
Aster puniceus	Swamp Aster
Eupatorium perfoliatum	Boneset
Glyceria canadensis	Rattlesnake Grass
Asclepias incarnata	Swamp Milkweed
Helenium autumnale	Common Sneezeweed
Penthorum sedoides	Ditch Stonecrop

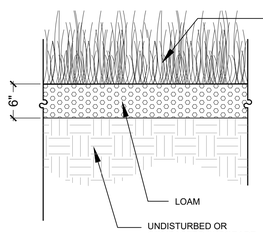
Apply at rate of 231bs/acre. New England Wildflower Mix available at New England Wetland Plants, Ma: www.newp.com . Approved equal may be substituted.

Wet Meadow / Pond Seed Mix

Not to Scale

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6 L2.0



New England Erosion Control/Restoration Mix for Dry Sites

Botanical Name	Common Name	Indicator
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Lolium multiflorum	Annual Ryegrass	
Lolium perenne	Perrenial Ryegrass	
Schizachyrium scoparium	Little Bluestem	FACU
Panicum virgatum	Switch Grass	FAC
Sorghastrum nutans	Indian Grass	UPL

NOTE:
1. LOAM ALL DISTURBED AREAS.
2. PRIOR TO SEEDING THE EROSION CONTROL SEED MIX, PROPERLY PREPARE THE SEED BED.
3. INSTALL JUTE MATTING ON SLOPES GREATER THAN 3:1.
4. FOLLOW MFG INSTRUCTIONS FOR SEEDING. AVAILABLE AT NEW ENGLAND WETLAND PLANTS, MA: WWW.NEWP.COM. APPROVED EQUAL MAY BE SUBSTITUTED.
5. SQUARE FOOTAGE: 27,140 (PER PLAN)

Dry Site Restoration Seed Mix

Not to Scale

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DRAWING SUBMITTED FOR CITY REVIEW

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WEAVE FILTRATION

QUALITY WAY
DOVER, NEW HAMPSHIRE

SHEET TITLE

LANDSCAPE DETAILS

REVISION LOG

REV#	DATE	DESCRIPTION
1	7-26-2022	REV. PER TRC COMMENTS
2	8-29-2022	REV. PER TRC COMMENTS

PROJECT NO.	22036.0
DESIGN BY	J. HYLAND / K.OSGOOD
DRAWN BY	K.OSGOOD
CHECKED BY	J. HYLAND
DATE	JUNE 16, 2022
SCALE	AS NOTED

SEAL



L2.0

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Please check out

https://www.dover.nh.gov/government/city-operations/planning/special-projects/cip/

For this year's Capital Improvements Program.