CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

REVISED

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room – City Hall, Dover NH
Meeting Date: **Thursday, April 7, 2022**
Meeting Time: **10:30 AM**

1. 10:30 AM – 11:00 AM: Site Review for Dover Housing Authority, Assessor's Map 35, Lot 1-A, zoned RM-U, located at 48 Whittier Street. (Proposal is to construct a six-unit multi-family residential building). *[This item was previously heard on June 3, 2021]* (P21-37)

2. 11:00 AM – 11:30 PM: Major Subdivision with potential waiver request for Chinburg Properties, (Owners: Dahn H. & Norma M. Tibbett and Jahn H. & Susan G Janetos), Assessor's Map N, Lot 13-1, zoned R-40, located at Oak Street. (12 new lots) (P22-21)

3. 11:30 PM – 12:15 PM: Major Subdivision for Westfield LLC., Assessor's Map G, Lot 2, zoned CM, located at 64 Littleworth Road. (3 new lots) A related CUP application will also appear before the Planning Board. (P22-23)

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com

March 16, 2022

City of Dover
Attn: Director of Department of Planning & Community Development
Mrs. Donna Benton
288 Central Ave
Dover, NH 03820

RE: TDR Request Dover Housing Authority (P21-37)
Dover Housing Authority (P21-37)
48 Whittier Street (Tax Map 33, Lot 1-A)

Dear Mrs. Benton,

On behalf of our client, the Dover housing Authority, Berry Surveying & Engineering (BS&E), submits the following TDR requests for the proposed Site Plan:

-Reduction in 30' perimeter buffer
-Four (4) additional units requested

Reduction in 30' Perimeter Buffer:

The applicant respectfully requests the reduction of the 30' TDR buffer due to the characteristics and circumstances of the subject parcel. The subject parcel has two direct abutters on the same side of Whitter Street (Tax Map 33, Lots 1 & 2). Tax Map 33, Lot 2 is owned and operated by the Dover Housing Authority, making this abutting land uses compatible. This project is an opportunity for an affordable housing project to be located adjacent use. For Tax Map 33, Lot 1, this single family home will have an existing heavily wooded buffer to the east of the subject parcel between the property line and the structure, estimated to be 60-70' in length. To the south of the subject parcel, Tax Map 33, Lot 1 is heavily wooded and steep down to the Cochecho River, providing a wooded buffer.

Request of Four (4) Additional Units:

Utilizing the base RM-U zoning, two units are allowed by right on the subject parcel. The applicant requests four (4) additional units that will conform to HUD fair market rate. The two (2) units allowed by right will also be HUD fair market rate, for all six (6) units conforming to this standard. This project presents an opportunity for much needed housing in the City of Dover, especially proposed for woman and children. With

the Dover Housing Authority office located on the adjacent parcel, the Housing Authority will be able to monitor the building and child's play area.

Respectfully submitted,
BERRY SURVEYING & ENGINEERING

Christopher R. Berry
Principal, President

BERRY SURVEYING & ENGINEERING
335 Second Crown Pt. Rd., Barrington, NH 03825
(603) 332-2863 / (603) 335-4623 FAX
www.BerrySurveying.Com

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com

July 19, 2021

City of Dover
288 Central Ave
Dover, NH 03820

Re: TRC Response
Berry Surveying & Engineering
Dover Housing Authority
48 Whittier Street (Tax Map 33, Lot 1-A)

Based on comments from the Technical Review Committee Notes dated May 27, 2021, we respectfully submit the following comments and revisions. Our comments are in **bold**.

PLANNING COMMENTS

- Water/sewer investment fees will be collected.
  Applicant understands and will pay the water/sewer fees.

- Impact fees will be collected at CO.
  Applicant understands and will pay the impact fees.

- TDR fees waived if HUD rental rate.
  The applicant is proposing housing that will follow HUD rental rate.

- Add PE stamp to TIA.
  PE Stamp has been added to the TIA.

- CUP for 30' buffer.
  Please find attached TDR request for the 30' buffer.

- Provide shoreland permit as a condition of approval
  Please find attached Shoreland Permit.

- Board acknowledgement in addition to application.
  Applicant understands and will obtain board acknowledgement.

- Have you spoken with property owner of Lot 33-1? Confirm address of that abutter.

Applicant has confirmed address of 46 Whittier Street.

- Provide copy of lease.
  Please find attached a copy of the lease.

- Provide development agreement to annually provide HUD rental rate
  Please find attached agreement to annually provide HUD rental rate.

- Who will use front porch?
  Residents of the six units will be able to utilize the porch for recreation purposes.

- Revise plan set to:

  - Add owner's signatures.
    Owner's signatures will be added to the cover sheet on the final set.

  - Add professional signature and stamps.
    All professional signatures and stamps have been added.

  - Indicate width of curb cut.
    The width of the curb cut is 60' and this is now shown on the Site Plan. See sheet #4.

  - Add "provided" column to zoning note.
    This column is now shown on the Site Plan. See sheet #4.

  - Update streetscape to correct curbing and provide for accessibility, add crosswalk, trees, etc. to match plan
    Please find attached revised streetscape.

  - Revise Chapter 109 to 81 and 149 to 153.
    These Chapters have been updated. See Site Plan, sheet #4.

  - Screen toter area.
    Additional screening has been added. See Landscaping Plan, sheet #10.

  - Revise active recreation note if not providing active recreation, fees may be required.
    Active recreation area has been further clarified and shown. See Site Plan, sheet #4.

- Show active recreation mentioned
  Active recreation area has been further clarified and shown. See Site Plan, sheet #4.

- Add file number P21-37
  File number has been added.

- Add all professional signatures and stamps on each submission.
  Signatures and stamps have been added.

- Indicate mail kiosk
  Mail kiosk has been added and mail parking area have been shown at the front of the site. See Site Plan, sheet #4

ENGINEERING COMMENTS

- A stormwater report and maintenance plan is required.
  Please find attached corresponding drainage report and maintenance plan.

- Any existing water or sewer service shall be disconnected (cut and capped) at the main in the street.
  This has been added as note #15 to the Utility Plan, sheet #9.

- Bike rack shall be installed on a concrete pad.
  A concrete pad has been added for the bike rack. See Site Plan, sheet #4.

- What is the plan for trash collection? Add details to plans.
  Trash is collected via private toters placed on a concrete pad at the rear of the site. See Site Plan, sheet #4.

- Show bollards around the electrical transformer.
  Bollards have been added around the electrical transformer. See Site Plan, sheet #4.

- Combine front walkways into a single walkway and staircase.
  Walkways have been combined. See Site Plan, sheet #4.

- Where does the drainage at the driveway entrance go? Add CBs to capture drainage before it enters the street.

The proposed site reduces the impervious area that drains into the street from pre-existing conditions. The entrance profile has been modified from 4% to 5% to be able to adjust the crest from 0+55 to 0+50 and send less stormwater into Whittier Street. See Grading Plan, sheet #5.

- Confirm parking lot flow will be directed to the rain garden for treatment.
  The proposed site reduces the impervious area that drains into the street from pre-existing conditions. From parking lot 0+50 – end will be directed to the rain garden for treatment. From 0+14 – 0+50 impervious surface is a less area than pre-existing conditions. See Grading Plan, sheet #5.

- Add existing utilities in Whittier Street.
  Existing utilities in Whitter Street are shown in the Existing Conditions Plan (sheet #2) and the Utility Plan (sheet #9).

- Explain the intent of the Stormtech System. What water will be stored / treated?
  The Stormtech System is needed for additional stormwater storage. Due to the limited footprint available, the infiltration surface is the limiting factor in the design. Two yard drains with rim elevations above the elevation of the water quality volume (WQV) are used to route water around the bio media into this additional Stormtech Chamber and stone storage volume. This allows for the WQV to be treated in the open water component of the system and the remaining storage volume to be used for detention. See drainage analysis & P-101, sheet #6.

- The slope of the rain garden against the sidewalk is pretty steep for a multifamily complex. Consider reducing side slope.
  The side slope remains at 4:1, but the top of the slope has been pushed two feet further away from the sidewalk to provide a larger platform. See Grading & Plan, sheet #5.

- What is the condition of the existing ewer manhole in Whitter Street where the sewer will be tied into?
  During invert measurement, the Sewer Manhole appeared to be in good condition. Construction appeared to be newer, potentially constructed in conjunction with the development across the street from the subject parcel.

- Sidewalk in the area of the new sewer lateral will need to be replaced.
  This has been added to the plans. See Utility Plan (sheet #9).

- Show water connections entering perpendicular to the building wall.
  The water connection has been reconfigured to connect into the added sprinkler room. See Utility Plan (sheet #9).

- 9" of crushed gravel under bituminous sidewalk per City standard detail.
  Detail C17, C-102 has been updated accordingly. See sheet #17.

- Drain and sewer pipes shall be bedded and covered with crushed stone not sand per City standard detail.
  Detail D5, D-101 and Detail U2, U-101 has been updated accordingly. See sheets #20 & 21.

POLICE DEPARTMENT COMMENTS

- Add one lamp post to rear corner of parking lot for better security lighting.
  An Eversource pole mounted lamp has been added to the rear corner of the parking lot. See Site Plan, sheet #4.

FIRE/INSPECTION COMMENTS

- First floor units shall be Type B accessible units.
  This has been added as note #46 to the Site Plan. See sheet #4.

- Sheet #4 accessible aisle appears to conflict with the accessible detail on sheet 17 – C2 detail.
  Detail C2 has been updated to reflect what is shown on the Site Plan. See C-101, sheet #17.

- Sheet #4 remove fire land signage at accessible aisle adjacent to van space.
  This signage has been removed. See Site plan, sheet #4.

- Sheet #4, note 12 revised suppression language to Chapter 81 Artice IV and 2015 building codes.
  This note has been updated. See Site Plan, sheet #4.

- Provide location of sprinkler room within plan set and Architectural drawings.
  A sprinkler room has been added to the building. See Site Plan, sheet #4.

- 7 electric and 6 gas meters are needed.
  This has been noted on the Site Plan and Utility Plan. See sheets #4 & #9.

- Sprinkler entrance.
  Sprinkler entrance has been noted on the Site Plan. See sheet #4.

ECONOMIC DEVELOPMENT

- Attractive building.
  We appreciate the comment.

Planning Board Comments

- Add landscaping around the building and toter area.
  Landscaping has been added around the toter area and area the building where feasible. See landscaping plan, sheet #10.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, EIT
Project Engineer

Kenneth A. Berry, PE, LLS
VP-Technical Operations

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

July 26, 2021

DOVER HOUSING AUTHORITY
62 WHITTIER ST
DOVER NH 03820

Re: Accepted Shoreland Permit by Notification (RSA 483-B)
NHDES File Number: 2021-02336
Subject Property: 48 Whittier St, Dover, Tax Map #33, Lot #1-A

Dear Applicant:

On July 23, 2021, the New Hampshire Department of Environmental Services (NHDES) Shoreland Program received the above-referenced Shoreland Permit by Notification (SPBN). In accordance with RSA 483-B:5-b, I and Env-Wq 1406.19, on July 23, 2021, the NHDES accepted the SPBN. The enclosed SPBN form is your permit. Any individual conducting work under this permit is advised to post a copy of the enclosed SPBN form on site in a prominent location, visible to inspecting personnel, at all times during construction.

Only the impacts shown on the submitted plans and accepted by NHDES as part of the SPBN are authorized under RSA 483-B. Any and all impacts not shown on the accepted plans or permitted through another SPBN or Shoreland Permit Application will render this SPBN invalid and will be in violation of RSA 483-B.

Please note that this SPBN cannot be amended. Prior to any change to the size or location of the proposed impacts, please contact me at Peter.J.Conti@des.nh.gov or (603) 271-0872 to determine the appropriate method to obtain any additional approval under RSA 483-B:5-b as may be required. Please do not hesitate to contact me as noted above if you have additional questions.

Sincerely,

Peter J. Conti
Shoreland/Shoreline Specialist, Shoreland Program
Wetlands Bureau, Land Resources Management
Water Division

Enclosure

cc: Kenneth Berry

SHORELAND PERMIT BY NOTIFICATION (PBN) NOTIFICATION FORM

Water Division/Land Resources Management

Shoreland Program

Check the Status of your PBN

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

RECEIVED JUL 23 2021 NHDES LAND RESOURCES MANAGEMENT	Administrative Use Only	☑ PBN Accepted, Expires: 07/26/2026	
		☐ PBN Rejected	Reviewer's Initials: PJC
		File No.: 2021-02336	Admin's Initials: m
		Check No.: 018018	Amount: 400-

This form requests authorization to excavate, fill, or construct new structures within the protected shoreland, which is 250 feet landward of the reference line of public waters, as regulated under RSA 483-B. Refer to the cover sheet to determine your eligibility to use this form in lieu of the standard Shoreland Permit Application. **Please note:** Notification packages missing required components will be rejected and the fee will not be returned.

SECTION 1 - PROPERTY OWNER (RSA 483-B:5-b; Env-Wq 1406.17)			
LAST NAME, FIRST NAME, M.I.: Dover Housing Authority			
MAILING ADDRESS: 62 Whittier Street	TOWN/ CITY: Dover	STATE: NH	ZIP CODE: 03820
PHONE: 603-742-5804	EMAIL: Esanderson@doverhousingauthority.org		
SECTION 2 - PROJECT LOCATION (RSA 483-B:5-b; Env-Wq 1406.17)			
ADDRESS: 48 Whittier Street	TOWN/ CITY: Dover	STATE: NH	ZIP CODE: 03820
WATERBODY NAME: Cochecho River	TAX MAP/ LOT: Tax Map 33, Lot 1-A		
SECTION 3 - CONTRACTOR OR AGENT (Env-Wq 1406.17)			
LAST NAME, FIRST NAME, M.I: Berry Surveying & Engineering, Kenneth A. Berry, PE, LLS			
MAILING ADDRESS: 335 Second Crown Point RD	TOWN/ CITY: Barrington	STATE: NH	ZIP CODE: 03825
PHONE: 603-332-2863	EMAIL: Crberry@metrocast.net		
SECTION 4 - PROJECT DESCRIPTION (Env-Wq 1406.17)			
Provide a **brief** description of the proposed project including square footage of impacts and dimensions of new structures. 6 unit apartment building located outside of shoreland zone with 1,378 SF of disturbance within 250' shoreland zone. Disturbance is primary for drainage discharge with 136 SF of paved parking area included in the zone. 250' zone disturbance occurs in the southeast corner of the property.			
TOTAL SQUARE FEET OF IMPACT: 1,378 TOTAL SQUARE FEET OF NET CHANGE IN IMPERVIOUS AREA: 136			

Total impact area is determined by the sum of all areas disturbed by excavation, fill, and construction. Examples include, but are not limited to: constructing new driveways, constructing new structures, removing or replacing structure foundations, grading, and installing a new septic system or well.

SECTION 5 - PBN CRITERIA (RSA 483-B:5-b; Env-Wq 1406.05)
Check one of the following project type criteria.

☒ 1. This project impacts less than 1,500 square feet in total, with a net increase in impervious area, if any, of no more than 900 square feet. *PBN Impact Limit: 1,500 square feet/ Fee: $400.*

☐ 2. This project is proposed for the purpose of stormwater management improvements, erosion control, or environmental restoration or enhancement. *PBN Impact Limit: None/ Fee: $200.*

☐ 3. The project is for the maintenance, repair, and improvement of public utilities, public roads, and public access facilities. *PBN Impact Limit: None/ Fee: $400.*

☐ 4. The project consists of geotechnical borings, test wells, drinking water wells or is a site remediation project and meets the requirements of Env-Wq 1406.05. *PBN Impact Limit: None / Fee: $400.*

SECTION 6 - FEE (RSA 483-B:5-b; Env-Wq 1406.16)

Consult Section 5 to determine fee. Make checks and money orders payable to "Treasurer - State of NH". Undated checks **cannot** be accepted. TOTAL FEE: $400

SECTION 7 - PHOTOS (RSA 483-B:5-b; Env-Wq 1406.16)

☒ Dated photographs of each area proposed to be impacted are required for all projects.

SECTION 8 - PLAN REQUIREMENTS (RSA 483-B:5-b; Env-Wq 1406.16)
Check YES or NO to **all** statements, and review the applicable plan requirements. If your plans do not include the information that is required, your notification will be rejected.

☒ YES		**Required for all projects:** A clear and detailed plan of work depicting, at a minimum, all impact areas, the reference line, and property lines. Plans that are not to scale must show all relevant dimensions and distances from the reference line and dimensions.
☒ YES ☐ NO		This project proposes an increase in impervious (i.e. non-permeable) area. Plans must include the dimensions and locations of **all** existing and proposed impervious surfaces on the lot that are within 250 feet of the reference line. Decks are typically considered impervious.
☒ YES ☐ NO	< 20%	This project proposes an increase in impervious area, and the total post-construction impervious area on the lot within 250 feet of the reference line will not exceed 20%.
☐ YES ☒ NO	20 – 30%	This project proposes an increase in impervious area such that the total impervious area of the lot within 250 feet of the reference line will be greater than 20% but less than 30%. Plans must include a stormwater management system that will infiltrate increased stormwater runoff from development per RSA 483-B:9, V(g)(2) and in accordance with Env-Wq 1500.
☐ YES ☒ NO	> 30%	This project proposes an increase in impervious area such that the total impervious area on the lot within 250 feet of the reference line will be greater than 30%. Plans must include a stormwater management system designed and certified by a professional engineer to account for all new development, **and** plans must demonstrate how the vegetation point score is met per RSA 483-B:9, V(g)(1,3).
☐ YES ☒ NO		This project proposes impacts within 50 feet of the reference line. Plans and photos must show each area of the waterfront buffer that will be impacted, including groundcover, and calculate the tree and sapling point scores in accordance with the Vegetation Management Fact Sheet.

☐ YES ☒ NO	This project proposes impacts between 50 and 150 feet of the reference line. Plans must depict the 25% area of the woodland buffer to be designated and maintained as natural woodland. See the Vegetation Management Fact Sheet.
☐ YES ☒ NO	This project proposes to install or expand an accessory structure, such as a patio or shed, within 50 feet of the reference line. All plans *must* demonstrate that the height, size, and setback limitations for accessory structures will be met. These limitations are described within the Accessory Structure Fact Sheet. The shoreland frontage on this lot is: _____ linear feet. ☒ N/A – There is no direct frontage on this lot.
☐ YES ☒ NO	This project proposes a pervious (i.e. permeable) surface technology. Plans must include the location and type of the surface and a cross-section depicting the construction method, materials, and specifications as to how this surface will be maintained as a pervious technology. The notification must also include a maintenance plan describing how the surfaces will be maintained pervious.

SECTION 9 - CONDITIONS (Env-Wq 1406.20; RSA 483-B:9, V, (d))
Initial each of the required conditions below.

ES 1. Erosion and siltation control measures shall: be installed prior to the start of work; be maintained throughout the project; and remain in place until all disturbed surfaces are stabilized.

ES 2. Erosion and siltation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.

ES 3. No person undertaking any activity in the protected shoreland shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards established in Env-Ws 1700 or successor rules in Env-Wq 1700.

ES 4. Any fill used shall be clean sand, gravel, rock, or other suitable material.

ES 5. For any project where mechanized equipment will be used, orange construction fence shall: be installed prior to the start of work at the limits of the temporary impact area as shown on the plans approved as part of a permit or accepted as part of the permit by notification; be maintained throughout the project; and remain in place until all mechanized equipment has been removed from the site.

SECTION 10 - CERTIFICATIONS (Env-Wq 1406.18)
Initial each of the required certifications below.

ES 1. The property owner shall sign the notification form below.

ES 2. The signature(s) shall constitute certification that: the information provided is true, complete, and not misleading to the knowledge and belief of the signer; the signer understands that any permit by notification obtained based on false, incomplete, or misleading information is not valid; the project as proposed complies with the minimum standards established in RSA 483-B:9, V and will be constructed in strict accordance with the proposal; the signer accepts the responsibility for understanding and maintaining compliance with RSA 483-B and these rules; the signer understands that an accepted shoreland permit by notification shall not exempt the work proposed from other state, local, or federal approvals; the signer understands that incomplete notifications shall be rejected and the notification fee shall not be returned; and the signer is subject to the applicable penalties in RSA 641, *Falsification In Official Matters*.

ES 3. The signature of the property owner certifies that the property owner has authorized the agent to act on the property owner's behalf for purposes of the notification. (☐ Not Applicable)

SECTION 11 - REQUIRED SIGNATURE (RSA 483-B:5-b; Env-Wq 1406.18)

SIGNATURE (OWNER):	PRINT NAME LEGIBLY:	DATE:
[signature]	ERIC SANDESON	7-21-21

SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY: CHRISTOPHER R. BERRY	DATE: 7-21-21

DEVELOPMENT SERVICES AGREEMENT

Dover Housing Authority
and
HAVEN Violence Prevention and Support Services

THIS DEVELOPMENT SERVICES AGREEMENT is made as of September XX, 2021 (the "Agreement"), by and between the **Dover Housing Authority,** a public body and politic duly created and organized pursuant to and in accordance with the provisions of the laws of the State of New Hampshire (the "Developer"); and HAVEN Violence Prevention and Supportive Services, a 501(c)(3) nonprofit organization, duly created and organized pursuant to and in accordance with the provisions of the laws of the State of New Hampshire**,** (the "Partnership").

A. The Partnership was formed to acquire, rehabilitate, construct, develop, improve, maintain, own, operate, lease, dispose of and otherwise deal with one (1) residential rental building located at 48 Whittier Street containing six (6) residential units (the "Apartment Complex"), informally known as **"Haven At The Falls".**

B. The Apartment Complex, following the completion of construction, development, and rehabilitation is expected to constitute a "qualified low-income housing project" (as defined in Section 42(g)(l) of the Code).

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth herein and other good and valuable considerations, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree, as follows:

Section 1. Defined Terms

Capitalized terms used in this Agreement and not otherwise defined herein shall have the meanings specified in the First Amended and Restated Agreement of Limited Partnership of the Partnership dated as of the date hereof (the "Partnership Agreement").

Section 2. Development Services

(a) The Developer shall oversee the development, construction and rehabilitation of the Apartment Complex, and shall perform the services and carry out the responsibilities with respect to the Apartment Complex as are set forth herein, and such additional duties and responsibilities as are reasonably within the general scope of such services and responsibilities and are designated from time to time by the general partner of the Partnership (the "General Partner") on behalf of the Partnership.

(b) The Developer's services shall be performed in the name and on behalf of the Partnership and shall consist of the duties set forth in the following subparagraphs of this Section

2(b) and as provided elsewhere in this Agreement; provided, however, that if the performance of any duty of the Developer set forth in this Agreement is beyond the reasonable control of the Developer, the Developer shall nonetheless be obligated to (i) use its reasonable best efforts to perform such duty and (ii) promptly notify the Partnership that the performance of such duty is beyond its reasonable control. The Developer shall perform the following:

(i) Negotiate and cause to be executed in the name and on behalf of the Partnership agreements for architectural, engineering, testing or consulting services for the Apartment Complex, and any agreements for the construction or rehabilitation of any improvements or tenant improvements to be constructed or installed by the Partnership or the furnishing of any supplies, materials, machinery or equipment therefor, or any amendments thereof, provided that no agreement shall be executed nor binding commitment made until the terms and conditions thereof and the party with whom the agreement is to be made shall have been approved by the Partnership unless the terms, conditions, and parties comply with guidelines issued by the General Partner concerning such agreements;

(ii) Assist the Partnership in dealing with neighborhood groups, local organizations, abutters and other parties interested in the development of the Apartment Complex;

(iii) Establish and implement appropriate administrative and financial controls for the construction, development and rehabilitation of the Apartment Complex, including but not limited to:

(A) coordination and administration of the Apartment Complex architect, the general contractor, and other contractors, professionals and consultants employed in connection with the construction of the Apartment Complex;

(B) administration of any construction contracts on behalf of the Partnership;

(C) participation in conferences and the rendering of such advice and assistance as will aid in developing economical, efficient and desirable design and construction procedures;

(D) the rendering of advice and recommendations as to the selection procedures for and selection of subcontractors and suppliers;

(E) the review and submission to the Partnership for approval of all requests for payments under any architectural agreement, general contractor's agreement, or any loan agreements with any lending institutions providing fnnds for the benefit of the Partnership for the design or construction of any improvements;

(F) the submission of any suggestions or requests for changes which could in any reasonable manner improve the efficiency or cost of the Apartment Complex;

(G) applying for and maintaining in full force and effect any and all governmental permits and approvals required for the lawful construction of the Apartment Complex;

(H) compliance with all terms and conditions applicable to the Partnership or the Apartment Complex contained in any governmental permit or approval required or obtained for the lawful construction, development and rehabilitation of the Apartment Complex, or in any insurance policy affecting or covering the Apartment Complex;

(!) furnishing such consultation and advice relating to the construction and development of the Apartment Complex as may be reasonably requested from time to time by the Partnership;

(J) keeping the Partnership fully informed on a regular basis of the progress of the construction, development and rehabilitation of the Apartment Complex, including the preparation of such reports as are provided for herein or as may reasonably be requested by the Partnership;

(K) giving or making the Partnership's instructions, requirements, approvals and payments provided for in the agreements with the Apartment Complex architect, general contractor, and other contractors, professionals and consultants retained for the Apartment Complex; and

(L) at the Partnership's expense, filing on behalf of, and as the attorney-in-fact for, the Partnership, any notices of completion required or permitted to be filed upon the completion of any improvement(s) and taking such actions as may be required to obtain any certificates of occupancy or equivalent documents (if available) required to permit the occupancy of dwelling units and other space in the Apartment Complex;

(iv) Assist the Partnership in obtaining required zoning approvals;

(v) Inspect the progress of the course of construction, development and rehabilitation of the Apartment Complex, including verification of the materials and labor being furnished to and on such construction so as to be fully competent to approve or disapprove requests for payment made by the Apartment Complex architect and the general contractor, or by any other parties with respect to the construction of the Apartment Complex, and in addition to verify that the same is being carried out substantially in accordance with the plans and specifications approved by the Partnership or, in the event that the same is not being so carried out, to promptly so notify the Partnership;

(vi) If requested to do so by the Partnership, perform on behalf of the Partnership all obligations of the Partnership with respect to the construction, development and rehabilitation of the Apartment Complex contained in any loan agreement or security

agreement entered into in connection with any financing for the Apartment Complex, or in any lease or rental agreement relating to space in the Apartment Complex, or in any agreement entered into with any governmental body or agency relating to the terms and conditions of such construction, provided that copies of such agreements have been provided by the Partnership to the Developer or the Partnership has otherwise notified the Developer in writing of such obligations;

(vii) To the extent requested to do so by the Partnership, prepare and distribute, or cause the general contractor for the Project to prepare and distribute, to the Partnership a critical path schedule, and periodic updates thereto as necessary to reflect any material changes, but in any event not less frequently than quarterly, other design or construction cost estimates as required by the Partnership, and financial accounting reports, including monthly progress reports on the quality, progress and cost of construction and recommendations as to the drawing of funds from any loans arranged by the Partnership to cover the cost of constructing the Apartment Complex;

(viii) Assist the Partnership in obtaining and maintaining insurance coverage for the Apartment Complex, the Partnership and its employees during the construction of the Apartment Complex in accordance with the construction period insurance requirements set forth in the Partnership Agreement;

(ix) During the construction and development period of the Apartment Complex, comply with all applicable present and future laws, ordinances, orders, rules, regulations and requirements (hereinafter called "Laws") of all Federal, state and municipal governments, courts, departments, commissions, boards and offices, any national or local Board of Fire Underwriters or Insurance Services Offices having jurisdiction in the county in which the Apartment Complex is located or any other body exercising functions similar to those of any of the foregoing, or any insurance carriers providing any insurance coverage for the Partnership or the Apartment Complex, which may be applicable to the Apartment Complex or any part thereof. Any such compliance undertaken by the Developer on behalf of and in the name of the Partnership, in accordance with the provisions of this Agreement, shall be at the Partnership's expense. The Developer shall likewise use commercially reasonable efforts to ensure that all agreements between the Partnership and independent contractors comply with all such applicable Laws;

(x) Assemble and retain all contracts, agreements and other records and data as may be necessary to carry out the Developer's functions hereunder;

(xi) Use its best efforts to accomplish the timely completion of the construction of the Apartment Complex in accordance with the approved plans and specifications and the time schedules for such completion approved by the Partnership;

(xii) At the direction of the Partnership, implement any decisions of the Partnership made in connection with the development and construction of the Apartment Complex or any policies and procedures relating thereto, exclusive of leasing activities; and

(xiii) Perform and administer any and all other services and responsibilities of the Developer which are set forth in any other provisions of this Agreement, or which are requested to be performed by the Partnership and are within the general scope of the services described herein.

Section 3. Obligation to Complete Construction/Rehabilitation and to Pay Development

The Developer shall complete the construction, development and rehabilitation of the Apartment Complex or cause the same to be completed in a good and workmanlike manner, free and clear of all mechanics', materialmen's or similar liens, and shall equip the Apartment Complex or cause the same to be equipped with all necessary and appropriate fixtures, equipment and articles of personal property, including refrigerators and ranges, all in accordance with the plans and specifications.

Section 4. Limitations and Restrictions

Notwithstanding any provisions of this Agreement, the Developer shall not take any action, expend any sum, make any decision, give any consent, approval, or authorization or incur any obligation with respect to any of the following matters unless and until the same has been approved by the General Partner:

(a) Approval of all construction and architectural contracts and all architectural plans, specifications and drawings prior to the rehabilitation and/or alteration of any improvements contemplated thereby, except for such matters as may be expressly delegated in writing to the Developer by the General Partner;

(b) Any proposed change in the work of the construction, development and rehabilitation of the Apartment Complex, or in the plans and specifications therefor as previously approved by the General Partner, or in the cost thereof, or any change which would affect the design, cost, value or quality of the Apartment Complex, except for such matters as may be expressly delegated in writing to the Developer by the General Partner; or

(c) Expending an amount greater than the amount which the Developer in good faith believes to be the fair and reasonable market value at the time and place of contracting for any goods purchased or leased or services engaged on behalf of the Partnership or otherwise in connection with the Apartment Complex.

Section 5. Accounts and Records.

(a) The Developer, on behalf of the Partnership, shall keep such books of account and other records as may be required and approved by the General Partner, including, but not limited to, records relating to the costs for which construction advances have been requested and/or received. The Developer shall keep vouchers, statements, receipted bills and invoices and all other records, in the form approved by the General Partner, covering all

collections, if any, disbursements and other data in connection with the Apartment Complex prior to final completion of construction. All accounts and records relating to the Apartment Complex, including all correspondence, shall be surrendered to the Partnership upon demand without charge therefor.

(b) All books and records prepared or maintained by the Developer shall be kept and maintained at all times at the place or places approved by the General Partner, and shall be available for and subject to audit, inspection and copying by the management agent for the Apartment Complex the General Partner or any representative or auditor therefor or supervisory or regulatory authority, at the times and in the manner set forth in the Partnership Agreement.

Section 6. Waiver of Compensation (None)

For its services in connection with the construction, development and rehabilitation of the Apartment Complex, the Developer shall NOT be entitled to receive a development fee, as this fee does not serve the interests of the Partnership.

Section 7. Applicable Law

This Agreement, and the application or interpretation hereof, shall be governed by and construed in accordance with the laws of the State.

Section 8. Binding Agreement

This Agreement shall be binding on the parties hereto, their heirs, executors, personal representatives, successors and assigns and supersedes any prior agreement for the development of the Apartment Complex between the parties hereto.

Section 9. Headings

All section headings in this Agreement are for convenience of reference only and are not intended to qualify the meaning of any section.

Section 10. Terminology

All personal pronouns used in this Agreement, whether used in the masculine, feminine or neuter gender, shall include all other genders, the singular shall include the plural, and vice versa as the context may require.

Section 11. Benefit of Agreement

The obligations and undertakings of the Developer set forth in this Agreement are made for the benefit of the Partnership and its partners and shall not inure to the benefit of any creditor of the Partnership other than a Partner, notwithstanding any pledge or assignment by the Partnership of this Agreement or any rights hereunder.

Section 12. Amendment

This Agreement may be amended only in a writing executed by the Parties thereto; provided, however, that no such amendment shall be effective without the prior written consent of the Limited Partner.

Section 13. Subcontracting

The Developer may enter into one or more subcontracts with third parties who may provide some or all of the services called for herein, but no such subcontracts shall relieve Developer of its duties under this Agreement or result in any additional obligations or expense to the Partnership.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties have caused this Development Services Agreement to be duly executed as of the date first written above.

PARTNERSHIP:

Name
Title
HAVEN Violence Prevention and Supportive Services

DEVELOPER:

RYAN M. CROSBY
Executive Director
Dover Housing Authority

HAVEN AT THE FALLS
RESIDENTIAL DWELLING LEASE

1. RESIDENT NAME:

ADDITIONAL HOUSEHOLD MEMBERS:

APARTMENT ADDRESS:

LANDLORD: DOVER HOUSING AUTHORITY

2. TERM: The initial term shall be one (1) year. The initial term shall begin on

_____ and end on _____. After the initial term, the Agreement may continue for successive terms of one year.

3. RENT: The Resident shall pay rent of $ per month. The rent is due on the first day of the month at 62 Whittier Street, Dover, NH 03820. The Resident and members of the household listed on this lease are renting the living space in the apartment located at , Dover, NH 03820.

4. CHARGES FOR LATE PAYMENTS: Rent not paid in full on or before the fifth day of the month at 4 PM shall be delinquent and a Demand for Rent and a Notice to Vacate shall issue. A Late Charge of $15.00 shall apply.

5. UTILITIES AND SERVICES: The Landlord shall provide maintenance and services including: Heat, Hot Water, Cold Water, and Lawn Care. The Resident is responsible for payment of Electricity directly to the Utility Company.

6. SECURITY DEPOSIT: Resident agrees to pay $ _____ as a security deposit to be used by Landlord at termination of this lease toward reimbursement of the cost of repairing any damages to the dwelling unit caused by Resident, his family, dependents, or guests, and any rent or other charges owed by Resident.

7. REGULARLY SCHEDULED RECERTIFICATIONS: The Resident shall fully cooperate with annual or interim recertification of family income. Failure to cooperate is a material violation of the lease and shall result in eviction. A resident's subsidy is calculated using a resident's income. This is reviewed and calculated during certifications conducted annually and any time a resident has a change of income or family composition.

8. OBLIGATIONS OF LANDLORD: The Landlord shall:

- **A. Maintain the premises in decent, safe and sanitary condition.**
- **B. Comply with requirements of applicable building codes, and housing codes, materially affecting health and safety.**
- **C. To maintain the grounds including mowing, but not shoveling of parking**

spaces or walkways

D. Keep building, facilities and common areas, not otherwise assigned to the Resident for maintenance and upkeep, in a clean and safe condition.

E. Maintain in good and safe working condition all electrical, plumbing, sanitary, heating, ventilating, and other facilities and appliances supplied or required to be supplied by the Landlord

F. Maintain the supply of running water and reasonable amounts of hot water and reasonable amounts of heat at appropriate times of the year (according to local custom and usage)

G. Make reasonable accommodations in lease and other policy requirements when requested by a qualified resident with disabilities. The concept of reasonable accommodation involves helping resident meet essential requirements. Accommodations are not reasonable if they require a fundamental alteration in the nature of the program or impose undue financial and administrative burdens.

9. <u>OBLIGATIONS OF THE RESIDENT and ALL HOUSEHOLD MEMBERS:</u>

Residents and all members of the household shall:

A. Notify the Landlord in writing at least thirty (30) days prior to vacancy.

B. Not assign or sub-lease the apartment;

C. Use the residence only as a home for all adults and children listed on the lease and for no other purposes; refrain from allowing guests to stay overnight for more than fourteen (14) nights in a 12-month period;

D. Abide by necessary and reasonable regulations promulgated by the Landlord for the benefit and well being of the housing neighborhood and the residents.

E. Comply with all obligations imposed upon residents by applicable provisions of building and housing codes materially affecting health and safety.

F. Abide by Housekeeping Standards as depicted on the photo display attached.

G. Dispose of rubbish and other waste in a manner consistent with the ordinance of the City of Dover and the regulations of the Landlord. Failure to comply with this clause and the applicable City of Dover ordinance may result in extra clean-up and collection charges and/or fines to the Resident and eviction. Residents shall supply an adequate number (at least one container for trash and one for recycling) of trash and recycling receptacles for storage in the back of the building. Residents shall carry trash and recycling to the street curb for City pick-up on the day for City pick-up.

H. Use all electrical, plumbing, sanitary, heating, ventilating and other facilities and appurtenances in a reasonable manner.

I. Notify the Landlord of need for any repairs:

J. Refrain from, and to cause Resident's household and guest(s) to refrain from, destroying, defacing, damaging, or removing any part of the premises or development.

K. Pay any reasonable charges (other than for wear and tear) for the repair of damages to the premises, buildings, facilities or common areas caused by resident, resident's household or guests in accordance with a schedule of charges.

L. Conduct himself or herself and cause other persons who are on the premises

with Resident's consent to conduct themselves in a manner which will not disturb other resident's peaceful enjoyment of their accommodations, and will be conducive to maintaining the development in a decent, safe and sanitary condition.

M. Refrain from illegal and other activities that impairs the physical or social environment of the development.

N. Refrain from engaging in criminal activity, including drug related criminal activity;

O. Permit management to enter the premises for the purpose of performing periodic inspections, reading utility meters, housekeeping inspections and routine maintenance for making improvements or repairs or to show the premises for re-leasing.

P. Right of Access. Landlord shall have the right to enter the dwelling unit at reasonable hours, after reasonable notice to the Tenant, given either written or orally, in order to inspect the Premises, make necessary or agreed repairs, decorations, alterations, or improvements, supply necessary or agreed services, or exhibit the dwelling unit to prospective or actual purchasers, mortgagees, tenants, workmen or contractors. Landlord may further enter the dwelling unit without the consent of Tenant, in the event of an extreme hazard involving the potential loss of life or severe property damage to property of Landlord or Tenant residing in or upon the Premises. Tenant agrees to further let representatives of Tenant enter the Premises upon reasonable notice with regard to any matter concerning Tenant's Housing Program

Q. Give management notice in writing when the premises are to be vacant for two weeks or more; such notice shall not render management responsible for any personal property of any nature or description left in or on the leased premises during resident's absence.

R. Refrain from discharging any rifle or handgun that operates on compressed air. Compressed air weapons shall include rifles and handguns known as "BB" guns, pellet guns and /or CO2 guns.

S. Leave the dwelling unit upon vacating the premises in a clean condition, normal wear and tear excepted, and to return the keys to the management. Any property left by the resident in or about the premises after he/she vacates will be considered as abandoned and may be disposed of as the management sees fit and in compliance with state law.

T. Pay promptly any utility charges including but not limited to electricity.

U. Notify management of any utility shutoff;

V. Comply with the provisions of any attachment to and incorporated in this lease;

W. Refrain from threatening the health, safety or peaceful enjoyment of the premises by other residents.

10. <u>NOTICE</u>

A. Residents shall notify the Landlord in writing delivered to the Management Office at 62 Whittier Street Dover NH or sent by prepaid first-class mail, properly addressed.

B. Landlord shall notify the Resident must be in writing, delivered to Resident or to any adult member of the household residing in the dwelling unit, or sent by prepaid first-class mail addressed to Resident. Formal notices, demands and communications between the Parties shall be in writing.

C. Unopened, canceled, first class mail returned by the Post Office shall be sufficient evidence that notice was given, whether signed or unsigned.

D. If Resident is visually impaired, all notices shall be in an accessible format.

11. <u>TERMINATION OF LEASE:</u>

A. This Lease may be terminated for violations of material terms of the Lease and for other good cause. The following list of material terms and other grounds constituting good cause is a partial list, but includes the following:

(1) The failure to pay rent or other payments when due.

(2) Repeated late payment, which shall be defined as failure to pay the amount of rent or other charges due by the first of the month. Four (4) such late payments within a 12-month period shall constitute a repeated late payment.

(3) Failure to pay utility bills when Resident is responsible for paying such bills directly to the supplier of utilities.

(4) Misrepresentation of family income, assets, or composition.

(5) Failure to supply, in a timely fashion, any certification, release, information, or documentation on Family income or composition needed to process annual or interim reexaminations.

(6) Failure to qualify within the guidelines of LIHTC.

(7) Serious or repeated damage to the dwelling unit, creation of physical hazards in the unit, common areas, grounds, or parking areas.

(8) Criminal activity by Resident, household member, guest, or other person under Resident's control, including criminal activity that threatens the health, safety or right to peaceful enjoyment of Haven at the Falls Housing by other residents or employees, or any drug related criminal activity on or off the premises.

(9) Alcohol or other drug abuse interfering with the health, safety, or right to peaceful enjoyment of the premises by other residents.

(10) Weapons or illegal drugs seized on Haven at the Falls Housing property by a law enforcement officer.

(11) Any fire caused by the resident, household members or guests' actions or neglect.

(12) Keeping an animal in or on the property in violation of the pet policy.

(13) The presence of a banned person in the apartment or within 25 feet of the entrance to the apartment

(14) Failure to abide by House Rules as posted in the offices of the Landlord and as amended from time to time

(15) Failure to relocate to another apartment after notification

B. The Management shall give written notice of the proposed termination of the Lease of:

(1) Seven (7) days in the case of failure to pay rent;

(2) Thirty (30) days in any other case.

C. The Notice of Termination:

(1) The notice of termination to Resident shall state specific reasons for the termination.

(2) The notice of termination will be provided in writing to the resident and their supported services provider.

D. This lease may be terminated by the resident or resident's estate at any time by giving thirty (30) days written advance written notice. If no notice is given, resident or resident's estate shall be responsible for rent unless management rents the dwelling unit.

E. Notwithstanding anything else in this lease, including any attachments, HUD requires INFORMAL REVIEWS AND HEARINGS PROCEDURE to be included as part of this lease and no other provisions, including any that purport to control in the event of a conflict, may supersede or negate them.

12. <u>VACATED UNITS:</u> If the resident for any reason, including but not limited to sickness and placement in a convalescent institution, vacates the property for a period in excess of thirty (30) consecutive days, unless special written arrangements have been made with the Landlord.

13. <u>RELOCATION:</u> The Landlord reserves the right to relocate the resident and all members of the household to another apartment at any time at the discretion of the Landlord. The Landlord will provide thirty (30) days written notice of a relocation.

14. <u>DOCUMENTS ATTACHED TO THE LEASE:</u> The following documents are attached to the lease and incorporated into this lease:

A. Haven at the Falls Housing House Rules
B. Violence Against Women Act (VAWA)
C. Informal Hearings Review Procedure
C. HUD 52530.c
E. Housekeeping Standards Photo Display
F. DHA Emergency Transfer Plan
G. HAVEN at the Falls Supportive Services

OWNER **DATE**

RESIDENT **DATE**

RESIDENT **DATE**

RESIDENT **DATE**

RESIDENT **DATE**

October 20, 2021

HAVEN AT THE FALLS HOUSING

DOVER HOUSING AUTHORITY

HOUSE RULES of the APARTMENT LEASE

1. **<u>Garbage/Trash:</u> All residents shall place garbage bags in Dover green bags on the street curb by 7 AM on the day of the City of Dover pick-up day.**
    a. **Garbage shall be stored in a covered plastic barrel, in the rear of the unit while waiting for garbage day.**
    b. **No garbage/trash shall be placed on the curb without a tag or Dover green bag.**

2. **<u>Parking:</u> The following parking rules shall be observed at all times:**
    a. **All vehicles parked on Haven at the Falls Housing property shall be registered, have a current inspection sticker, and be suitable for use on the road.**
        i. **Any inoperable or non-roadworthy vehicle parked on Haven at the Falls Housing property is subject to towing at the vehicle owner's expense.**
    b. **Automotive repair work, aside from routine maintenance, is prohibited on Haven at the Falls Housing property.**
    c. **All residents and guests shall abide by the Winter Parking rules of the City of Dover.**
    d. **All residents shall register cars with the Management Agent and shall display stickers issued by the Management Agent in the rear window.**

3. **<u>Toys and Bikes:</u> All toys and bikes may be stored outside overnight, from May 1st to October 31st, but ONLY in the rear of the unit. No toys or bikes shall be stored outside during the winter months of November through April.**

4. **<u>Outside Storage:</u> No personal property may be stored outside in the front of the apartment. Items designed for indoor use, including but not limited to couches, chairs and other furniture may not be stored anywhere outside the apartment for any reason. Items designed for outdoor use such as plastic chairs and a gas grill may be stored outside ONLY in the rear of the apartment. Gas grills and one propane tank must be stored at least fifteen (15) feet from the rear of the building. Items stored outside the front of the apartment, or otherwise in violation of this House Rule shall be considered abandoned and may be removed by Dover Housing Authority Staff.**

5. **<u>Combustible or Flammable Fuel:</u> No combustible or flammable fuel, or any device that contains such fuel, shall be stored within fifteen (15) feet of any building. This includes but is not limited to grill propane tanks, dirt bikes, and motorcycles.**

6. **<u>Smoke and Carbon Monoxide Devices:</u> Residents shall not disable any smoke and/or carbon monoxide devices.**

7. **<u>Snow Removal:</u> Residents are responsible for keeping all steps and walkways leading to their apartment free of snow and ice.**

8. **<u>No Painting:</u> Residents are not permitted to paint walls or woodwork.**

9. **<u>No Changing Locks:</u> Residents are not permitted to change the locks.**

10. **<u>No Smoking:</u> There is no smoking allowed on Haven at the Falls Housing Property, including but not limited to, inside and outside of apartments and common areas.**

11. **<u>No "sticky" Tiles on the Floor:</u> No flooring with adhesive should be placed on any flooring.**

12. **<u>No tampering with Thermostats.</u> Thermostats are not to be tampered with or changed in any way.**

13. **<u>Pet Policy:</u> No dogs are allowed on property unless approved by management. This applies to visitors' dogs as well.**

    Dogs are not allowed on Dover Housing Authority property unless there is an accommodation due to a disability, the proper documentation has been provided to, and written permission has been received from Dover Housing Authority.

    If you are permitted to have a dog, you must abide by the following rules:

    a) **A Veterinarian's Certificate stating the dog has been neutered or spayed, has received current rabies shots, and the dog is in good health.**
    b) **Resident must register the dog with management before move-in and update registration annually at the time of recertification. A current license, photo, and proof of current shot records will need to be provided at annual recertification.**
    c) **Resident is responsible for the care and cleanliness of the dog. Any dog waste must be cleaned up immediately.**
    d) **Resident must abide by all city laws regarding dog ownership licensing, including but not limited to leash laws, vaccinations, etc**

    One (1) cat is allowed if all the following requirements are met:

    a) **A Veterinarian's Certificate stating the cat has been neutered or spayed, has received current rabies shots, and the cat is in good health.**
    b) **Resident must register cat with management before move-in and update registration annually at the time of recertification. A current photo, and**

proof of current shot records will need to be provided at annual recertification.

c) **Resident is responsible for the care and cleanliness of the cat. Litter boxes must be kept clean and sanitary.**

Any other pets must be approved by management.

14. **<u>Washers and Dryers:</u> These appliances have been provided by DHA and will be maintained by DHA Maintenance. The washers and dryers are not part of the rent charged to the resident. Any repairs of the appliances beyond normal wear and tear shall be charged to the Resident.**

It is the resident's responsibility to:

a) **Report a problem with the appliance immediately. You will be charged if the delay causes more damage to the appliance or surrounding area.**
b) **Use the appliance accordingly. Do not overload the machines.**
c) **Refrain from abusing the appliance; do not punch, kick or damage the appliance in any way.**
d) **Pay any repairs charged to a resident due to the damages caused by the resident.**

HAVEN AT THE FALLS HOUSING RESIDENTIAL DWELLING LEASE

INTERNATIONAL OCD FOUNDATION

Hoarding Center

Clutter Image Rating

In our work on hoarding, we've found that people have very different ideas about what it means to have a cluttered home. For some, a small pile of things in the corner of an otherwise well-ordered room constitutes serious clutter. For others, only when the narrow pathways make it hard to get through a room does the clutter register. To make sure we get an accurate sense of a clutter problem, we created a series of pictures of rooms in various stages of clutter – from completely clutter-free to very severely cluttered. People can just pick out the picture in each sequence comes closest to the clutter in their own living room, kitchen, and bedroom. This requires some degree of judgment because no two homes look exactly alike, and clutter can be higher in some parts of the room than others. Still, this rating works pretty well as a measure of clutter. In general, clutter that reaches the level of picture # 4 or higher impinges enough on people's lives that we would encourage them to get help for their hoarding problem. These pictures are published in our treatment manual (Compulsive Hoarding and Acquiring: Therapist Guide, Oxford University Press) and in our self-help book (Buried in Treasures: Help for Compulsive Acquiring, Saving, and Hoarding, Oxford University Press).

HAVEN AT THE FALLS HOUSING RESIDENTIAL DWELLING LEASE

Clutter Image Rating Scale: Kitchen

Please select the photo below that most accurately reflects the amount of clutter in your room.

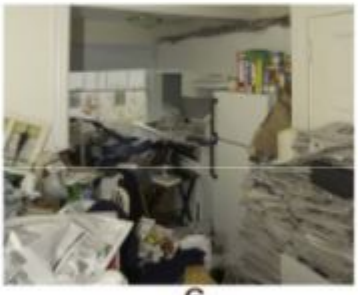

1


2


3


4


5

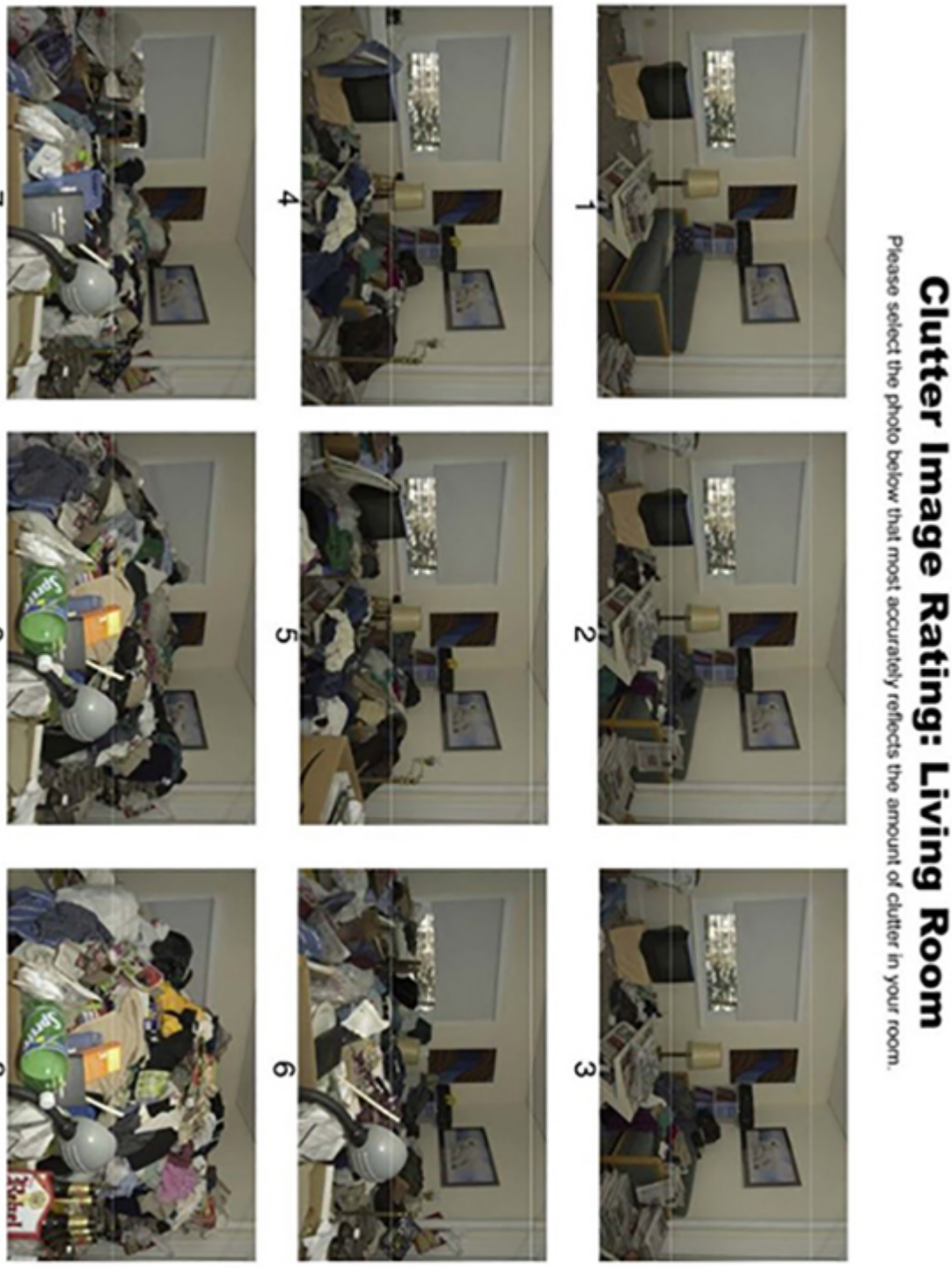

6


7


8


9

HAVEN AT THE FALLS HOUSING RESIDENTIAL DWELLING LEASE



HAVEN AT THE FALLS HOUSING RESIDENTIAL DWELLING LEASE



EXHIBIT 16-1: NOTICE OF OCCUPANCY RIGHTS UNDER THE VIOLENCE AGAINST WOMEN ACT, FORM HUD-5380

Dover HousingAuthority
Notice of Occupancy Rights under the Violence Against Women Act[1]

To all Tenants and Applicants

The Violence Against Women Act (VAWA) provides protections for victims of domestic violence, dating violence, sexual assault, or stalking. VAWA protections are not only available to women, but are available equally to all individuals regardless of sex, gender identity, or sexual orientation.[2] The U.S. Department of Housing and Urban Development (HUD) is the federal agency that oversees that the housing choice voucher program is in compliance with VAWA. This notice explains your rights under VAWA. A HUD-approved certification form is attached to this notice. You can fill out this form to show that you are or have been a victim of domestic violence, dating violence, sexual assault, or stalking, and that you wish to use your rights under VAWA."

Protections for Applicants

If you otherwise qualify for assistance under the housing choice voucher program**,** you cannot be denied admission or denied assistance because you are or have been a victim of domestic violence, dating violence, sexual assault, or stalking.

Protections for Tenants

If you are receiving assistance under the housing choice voucher program**,** you may not be denied assistance, terminated from participation, or be evicted from your rental housing because you are or have been a victim of domestic violence, dating violence, sexual assault, or stalking.

Also, if you or an affiliated individual of yours is or has been the victim of domestic violence, dating violence, sexual assault, or stalking by a member of your household or any guest, you may not be denied rental assistance or occupancy rights under the housing choice voucher program solely on the basis of criminal activity directly relating to that domestic violence, dating violence, sexual assault, or stalking.

Affiliated individual means your spouse, parent, brother, sister, or child, or a person to whom you stand in the place of a parent or guardian (for example, the affiliated individual is in your care, custody, or control); or any individual, tenant, or lawful occupant living in your household.

---

[1] Despite the name of this law, VAWA protection is available regardless of sex, gender identity, or sexual orientation.

[2] Housing providers cannot discriminate on the basis of any protected characteristic, including race, color, national origin, religion, sex, familial status, disability, or age. HUD-assisted and HUD-insured housing must be made available to all otherwise eligible individuals regardless of actual or perceived sexual orientation, gender identity, or marital status.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Removing the Abuser or Perpetrator from the Household

The PHA may divide (bifurcate) your lease in order to evict the individual or terminate the assistance of the individual who has engaged in criminal activity (the abuser or perpetrator) directly relating to domestic violence, dating violence, sexual assault, or stalking.

If the PHA chooses to remove the abuser or perpetrator, the PHA may not take away the rights of eligible tenants to the unit or otherwise punish the remaining tenants. If the evicted abuser or perpetrator was the sole tenant to have established eligibility for assistance under the program, the PHA must allow the tenant who is or has been a victim and other household members to remain in the unit for a period of time, in order to establish eligibility under the program or under another HUD housing program covered by VAWA, or, find alternative housing.

In removing the abuser or perpetrator from the household, the PHA must follow federal, state, and local eviction procedures. In order to divide a lease, the PHA may, but is not required to, ask you for documentation or certification of the incidences of domestic violence, dating violence, sexual assault, or stalking.

Moving to Another Unit

Upon your request, the PHA may permit you to move to another unit, subject to the availability of other units, and still keep your assistance. In order to approve a request, the PHA may ask you to provide documentation that you are requesting to move because of an incidence of domestic violence, dating violence, sexual assault, or stalking. If the request is a request for emergency transfer, the housing provider may ask you to submit a written request or fill out a form where you certify that you meet the criteria for an emergency transfer under VAWA. The criteria are:

1. **You are a victim of domestic violence, dating violence, sexual assault, or stalking.** If your housing provider does not already have documentation that you are a victim of domestic violence, dating violence, sexual assault, or stalking, your housing provider may ask you for such documentation, as described in the documentation section below.
2. **You expressly request the emergency transfer.** Your housing provider may choose to require that you submit a form, or may accept another written or oral request.
3. **You reasonably believe you are threatened with imminent harm from further violence if you remain in your current unit.** This means you have a reason to fear that if you do not receive a transfer you would suffer violence in the very near future.

   OR

   You are a victim of sexual assault and the assault occurred on the premises during the 90-calendar-day period before you request a transfer. If you are a victim of sexual assault, then in addition to qualifying for an emergency transfer because you reasonably believe you are threatened with imminent harm from further violence if you remain in your unit, you may qualify for an emergency transfer if the sexual assault occurred on the premises of the property from which you are seeking your transfer, and that assault happened within the 90-calendar-day period before you expressly request the transfer.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

The PHA will keep confidential requests for emergency transfers by victims of domestic violence, dating violence, sexual assault, or stalking, and the location of any move by such victims and their families.

The PHA's emergency transfer plan provides further information on emergency transfers, and the PHA must make a copy of its emergency transfer plan available to you if you ask to see it.

Documenting You Are or Have Been a Victim of Domestic Violence, Dating Violence, Sexual Assault or Stalking

The PHA can, but is not required to, ask you to provide documentation to "certify" that you are or have been a victim of domestic violence, dating violence, sexual assault, or stalking. Such request from the PHA must be in writing, and the PHA must give you at least 14 business days (Saturdays, Sundays, and federal holidays do not count) from the day you receive the request to provide the documentation. The PHA may, but does not have to, extend the deadline for the submission of documentation upon your request.

You can provide one of the following to the PHA as documentation. It is your choice which of the following to submit if the PHA asks you to provide documentation that you are or have been a victim of domestic violence, dating violence, sexual assault, or stalking.

- A complete HUD-approved certification form given to you by the PHA with this notice, that documents an incident of domestic violence, dating violence, sexual assault, or stalking. The form will ask for your name, the date, time, and location of the incident of domestic violence, dating violence, sexual assault, or stalking, and a description of the incident. The certification form provides for including the name of the abuser or perpetrator if the name of the abuser or perpetrator is known and is safe to provide.
- A record of a Federal, State, tribal, territorial, or local law enforcement agency, court, or administrative agency that documents the incident of domestic violence, dating violence, sexual assault, or stalking. Examples of such records include police reports, protective orders, and restraining orders, among others.
- A statement, which you must sign, along with the signature of an employee, agent, or vounteer of a victim service provider, an attorney, a medical professional or a mental helth professional (collectively, "professional") from whom you sought assistance in addressing domestic violence, dating violence, sexual assault, or stalking, or the effects of abuse, and with the professional selected by you attesting under penalty of perjury that he or she believes that the incident or incidents of domestic violence, dating violence, sexual assault, or stalking are grounds for protection.
- Any other statement or evidence that the PHA has agreed to accept.

If you fail or refuse to provide one of these documents within the 14 business days, the PHA does not have to provide you with the protections contained in this notice.

If the PHA receives conflicting evidence that an incident of domestic violence, dating violence, sexual assault, or stalking has been committed (such as certification forms from two or more members of a household each claiming to be a victim and naming one or more of the other petitioning household members as the abuser or perpetrator), the PHA has the right to request that you provide third-party documentation within thirty 30 calendar days in order to resolve the conflict. If you fail or refuse to provide third-party documentation where there is conflicting evidence, the PHA does not have to provide you with the protections contained in this notice.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Confidentiality

The PHA must keep confidential any information you provide related to the exercise of your rights under VAWA, including the fact that you are exercising your rights under VAWA.

The PHA must not allow any individual administering assistance or other services on behalf of the PHA (for example, employees and contractors) to have access to confidential information unless for reasons that specifically call for these individuals to have access to this information under applicable Federal, State, or local law.

The PHA must not enter your information into any shared database or disclose your information to any other entity or individual. The PHA, however, may disclose the information provided if:

- You give written permission to the PHA to release the information on a time limited basis.
- The PHA needs to use the information in an eviction or termination proceeding, such as to evict your abuser or perpetrator or terminate your abuser or perpetrator from assistance under this program.
- A law requires the PHA or your landlord to release the information.

VAWA does not limit the PHA's duty to honor court orders about access to or control of the property. This includes orders issued to protect a victim and orders dividing property among household members in cases where a family breaks up.

Reasons a Tenant Eligible for Occupancy Rights under VAWA May Be Evicted or Assistance May Be Terminated

You can be evicted and your assistance can be terminated for serious or repeated lease violations that are not related to domestic violence, dating violence, sexual assault, or stalking committed against you. However, the PHA cannot hold tenants who have been victims of domestic violence, dating violence, sexual assault, or stalking to a more demanding set of rules than it applies to tenants who have not been victims of domestic violence, dating violence, sexual assault, or stalking.

The protections described in this notice might not apply, and you could be evicted and your assistance terminated, if the PHA can demonstrate that not evicting you or terminating your assistance would present a real physical danger that:

1. Would occur within an immediate time frame, and
2. Could result in death or serious bodily harm to other tenants or those who work on the property.

If the PHA can demonstrate the above, the PHA should only terminate your assistance or evict you if there are no other actions that could be taken to reduce or eliminate the threat.

Other Laws

VAWA does not replace any federal, state, or local law that provides greater protection for victims of domestic violence, dating violence, sexual assault, or stalking. You may be entitled to additional housing protections for victims of domestic violence, dating violence, sexual assault, or stalking under other Federal laws, as well as under State and local laws.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Non-Compliance with The Requirements of This Notice

You may report a covered housing provider's violations of these rights and seek additional assistance, if needed, by contacting or filing a complaint with

Manchester Field Office
Norris Cotton Federal Building
275 Chestnut Street
4th Floor
Manchester, NH 03101-2487
(603) 666-7510

For Additional Information

You may view a copy of HUD's final VAWA rule at: https://www.gpo.gov/fdsys/pkg/FR-2016-11-16/pdf/2016-25888.pdf.

Additionally, the PHA must make a copy of HUD's VAWA regulations available to you if you ask to see them.

For questions regarding VAWA, please contact **Dover Housing Authority.**

For help regarding an abusive relationship, you may call the National Domestic Violence Hotline at 1-800-799-7233 or, for persons with hearing impairments, 1-800-787-3224 (TTY). You may also contact **NH Helpline 211.**

For tenants who are or have been victims of stalking seeking help may visit the National Center for Victims of Crime's Stalking Resource Center at https://www.victimsofcrime.org/our-programs/stalking-resource-center.

For help regarding sexual assault, you may contact **the 211 NH Helpline**

Victims of stalking seeking help may contact **211 NH Helpline**

Attachment: Certification form HUD-5382 **[form approved for this program to be included]**

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

EXHIBIT 16-2: CERTIFICATION OF DOMESTIC VIOLENCE, DATING VIOLENCE, SEXUAL ASSAULT, OR STALKING AND ALTERNATE DOCUMENTATION, FORM HUD-5382

CERTIFICATION OF DOMESTIC VIOLENCE, DATING VIOLENCE, SEXUAL ASSAULT, OR STALKING, AND ALTERNATE DOCUMENTATION

U.S. Department of Housing and Urban Development

OMB Approval No. 2577-0286
Exp. 06/30/2017

Purpose of Form: The Violence Against Women Act ("VAWA") protects applicants, tenants, and program participants in certain HUD programs from being evicted, denied housing assistance, or terminated from housing assistance based on acts of domestic violence, dating violence, sexual assault, or stalking against them. Despite the name of this law, VAWA protection is available to victims of domestic violence, dating violence, sexual assault, and stalking, regardless of sex, gender identity, or sexual orientation.

Use of This Optional Form: If you are seeking VAWA protections from your housing provider, your housing provider may give you a written request that asks you to submit documentation about the incident or incidents of domestic violence, dating violence, sexual assault, or stalking.

In response to this request, you or someone on your behalf may complete this optional form and submit it to your housing provider, or you may submit one of the following types of third-party documentation:

(1) A document signed by you and an employee, agent, or volunteer of a victim service provider, an attorney, or medical professional, or a mental health professional (collectively, "professional") from whom you have sought assistance relating to domestic violence, dating violence, sexual assault, or stalking, or the effects of abuse. The document must specify, under penalty of perjury, that the professional believes the incident or incidents of domestic violence, dating violence, sexual assault, or stalking occurred and meet the definition of "domestic violence," "dating violence," "sexual assault," or "stalking" in HUD's regulations at 24 CFR 5.2003.

(2) A record of a Federal, State, tribal, territorial or local law enforcement agency, court, or administrative agency; or

(3) At the discretion of the housing provider, a statement or other evidence provided by the applicant or tenant.

Submission of Documentation: The time period to submit documentation is 14 business days from the date that you receive a written request from your housing provider asking that you provide documentation of the occurrence of domestic violence, dating violence, sexual assault, or stalking. Your housing provider may, but is not required to, extend the time period to submit the documentation, if you request an extension of the time period. If the requested information is not received within 14 business days of when you received the request for the documentation, or any extension of the date provided by your housing provider, your housing provider does not need to grant you any of the VAWA protections. Distribution or issuance of this form does not serve as a written request for certification.

Confidentiality: All information provided to your housing provider concerning the incident(s) of domestic violence, dating violence, sexual assault, or stalking shall be kept confidential and such details shall not be entered into any shared database. Employees of your housing provider are not to have access to these details unless to grant or deny VAWA protections to you, and such employees may not disclose this information to any other entity or individual, except to the extent that disclosure is: (i) consented to by you in writing in a time-limited release; (ii) required for use in an eviction proceeding or hearing regarding termination of assistance; or (iii) otherwise required by applicable law.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

TO BE COMPLETED BY OR ON BEHALF OF THE VICTIM OF DOMESTIC VIOLENCE, DATING VIOLENCE, SEXUAL ASSAULT, OR STALKING

1. Date the written request is received by victim: _____

2. Name of victim: _____

3. Your name (if different from victim's):_____

4. Name(s) of other family member(s) listed on the lease:_____

_____

5. Residence of victim: _____

6. Name of the accused perpetrator (if known and can be safely disclosed):_____

_____

7. Relationship of the accused perpetrator to the victim:_____

8. Date(s) and times(s) of incident(s) (if known):_____

_____

10. Location of incident(s):_____

In your own words, briefly describe the incident(s):

_____

_____

_____

This is to certify that the information provided on this form is true and correct to the best of my knowledge and recollection, and that the individual named above in Item 2 is or has been a victim of domestic violence, dating violence, sexual assault, or stalking. I acknowledge that submission of false information could jeopardize program eligibility and could be the basis for denial of admission, termination of assistance, or eviction.

Signature _____Signed on (Date) _____

Public Reporting Burden: The public reporting burden for this collection of information is estimated to average 1 hour per response. This includes the time for collecting, reviewing, and reporting the data. The information provided is to be used by the housing provider to request certification that the applicant or tenant is a victim of domestic violence, dating violence, sexual assault, or stalking. The information is subject to the confidentiality requirements of VAWA. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid Office of Management and Budget control number.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

PART III: INFORMAL REVIEWS AND HEARINGS

16-III.A. OVERVIEW

Both applicants and participants have the right to disagree with, and appeal, certain decisions of the PHA that may adversely affect them. PHA decisions that may be appealed by applicants and participants are discussed in this section.

The process for applicant appeals of PHA decisions is called the "informal review." For participants (or applicants denied admission because of citizenship issues), the appeal process is called an "informal hearing." PHAs are required to include informal review procedures for applicants and informal hearing procedures for participants in their administrative plans [24 CFR 982.54(d)(12) and (13)].

16-III.B. INFORMAL REVIEWS

Informal reviews are provided for program applicants. An applicant is someone who has applied for admission to the program, but is not yet a participant in the program. Informal reviews are intended to provide a "minimum hearing requirement" [24 CFR 982.554], and need not be as elaborate as the informal hearing requirements [*Federal Register* 60, no. 127 (3 July 1995): 34690].

Decisions Subject to Informal Review [24 CFR 982.554(a) and (c)]

The PHA must give an applicant the opportunity for an informal review of a decision denying assistance [24 CFR 982.554(a)]. Denial of assistance may include any or all of the following [24 CFR 982.552(a)(2)]:

- Denying listing on the PHA waiting list
- Denying or withdrawing a voucher
- Refusing to enter into a HAP contract or approve a lease
- Refusing to process or provide assistance under portability procedures

Informal reviews are *not* required for the following reasons [24 CFR 982.554(c)]:

- Discretionary administrative determinations by the PHA
- General policy issues or class grievances
- A determination of the family unit size under the PHA subsidy standards
- A PHA determination not to approve an extension of a voucher term
- A PHA determination not to grant approval of the tenancy
- A PHA determination that the unit is not in compliance with the HQS
- A PHA determination that the unit is not in accordance with the HQS due to family size or composition

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

PHA Policy

The PHA will only offer an informal review to applicants for whom assistance is being denied. Denial of assistance includes: denying listing on the PHA waiting list; denying or withdrawing a voucher; refusing to enter into a HAP contract or approve a lease; refusing to process or provide assistance under portability procedures.

Notice to the Applicant [24 CFR 982.554(a)]

The PHA must give an applicant prompt notice of a decision denying assistance. The notice must contain a brief statement of the reasons for the PHA decision, and must also state that the applicant may request an informal review of the decision. The notice must describe how to obtain the informal review.

Scheduling an Informal Review

PHA Policy

A request for an informal review must be made in writing and delivered to the PHA either in person or by first class mail, by the close of the business day, no later than 10 business days from the date of the PHA's denial of assistance.

The PHA must schedule and send written notice of the informal review within 10 business days of the family's request.

If the informal review will be conducted remotely, at the time the PHA notifies the family of the informal review, the family will be informed:

Regarding the processes to conduct a remote informal review;

That, if needed, the PHA will provide technical assistance prior to and during the informal review; and

That if the family or any individual witness has any technological, resource, or accessibility barriers preventing them from fully accessing the remote informal review, the family may inform the PHA and the PHA will assist the family in either resolving the issues or allow the family to participate in an in-person informal review, as appropriate.

Informal Review Procedures [24 CFR 982.554(b)]

The informal review must be conducted by a person other than the one who made or approved the decision under review, or a subordinate of this person.

The applicant must be provided an opportunity to present written or oral objections to the decision of the PHA.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Remote Informal Reviews [Notice PIH 2020-32]

There is no requirement that informal reviews be conducted in-person and, as such, HUD allows PHAs to conduct all or a portion of their informal review remotely either over the phone, via video conferencing, or through other virtual platforms. If the PHA chooses to conduct remote informal reviews, applicants may still request an in-person informal review, as applicable.

PHA Policy

The PHA has the sole discretion to require that informal reviews be conducted remotely in case of local, state, or national physical distancing orders, and in cases of inclement weather or natural disaster.

In addition, the PHA will conduct an informal review remotely upon request of the applicant as a reasonable accommodation for a person with a disability, if an applicant does not have child care or transportation that would enable them to attend the informal review, or if the applicant believes an in-person informal review would create an undue health risk. The PHA will consider other reasonable requests for a remote informal review on a case-by-case basis.

Ensuring Accessibility for Persons with Disabilities and LEP Individuals

As with in-person informal reviews, the platform for conducting remote informal reviews must be accessible to persons with disabilities and the informal review must be conducted in accordance with Section 504 and accessibility requirements. This includes ensuring any information, websites, emails, digital notifications, and other virtual platforms are accessible for persons with vision, hearing, and other disabilities. Further, providing effective communication in a digital context may require the use of individualized auxiliary aids or services, such as audio description, captioning, sign language and other types of interpreters, keyboard accessibility, accessible documents, screen reader support, and transcripts. Auxiliary aids or services must be provided in accessible formats, in a timely manner, and in such a way to protect the privacy and independence of the individual. PHAs may never request or require that individuals with disabilities provide their own auxiliary aids or services, including for remote informal hearings.

PHAs are required to make reasonable accommodations in policies, practices, and procedures to ensure persons with disabilities have a full and equal opportunity to participate in and benefit from all aspects of the informal review process. See Chapter 2 for a more detailed discussion of reasonable accommodation requirements.

If no method of conducting a remote informal review is available that appropriately accommodates an individual's disability, the PHA may not hold against the individual his or her inability to participate in the remote informal review, and the PHA should consider whether postponing the remote informal review to a later date is appropriate or whether there is a suitable alternative.

Due to the individualized nature of disability, the appropriate auxiliary aid or service necessary, or reasonable accommodation, will depend on the specific circumstances and requirements.

As with in-person reviews, Limited English Proficiency (LEP) requirements also apply to remote informal reviews, including the use of interpretation services and document translation. See Chapter 2 for a more thorough discussion of accessibility and LEP requirements, all of which apply in the context of remote informal reviews.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Conducting Remote Informal Reviews

The PHA must ensure that the lack of technology or inability to use technology for remote informal reviews does not pose a disadvantage to families that may not be apparent to the PHA. The PHA should determine through a survey or other means if these barriers exist prior to conducting the remote informal review and, if the family does not have the proper technology to fully participate, either postpone the informal review or provide an alternative means of access.

As with in-person informal reviews, the PHA must provide all materials presented, whether paper or electronic, to the family prior to the remote informal review. The family must also be provided with an accessible means by which to transmit their own evidence.

The PHA must ensure that the applicant has the right to hear and be heard. All PHA policies and processes for remote informal reviews must be conducted in accordance with due process requirements and be in compliance with HUD regulations at 24 CFR 982.554 and guidance specified in Notice PIH 2020-32.

PHA Policy

The PHA will conduct remote informal reviews via a video conferencing platform, when available. If, after attempting to resolve any barriers, applicants are unable to adequately access the video conferencing platform at any point, or upon applicant request, the informal review will be conducted by telephone conferencing call-in. If the family is unable to adequately access the telephone conferencing call-in at any point, the remote informal review will be postponed, and an in-person alternative will be provided promptly within a reasonable time.

At least five business days prior to scheduling the remote review, the PHA will provide the family with login information and/or conferencing call-in information and an electronic and/or physical copy of all materials being presented via first class mail and/or email. The notice will advise the family of technological requirements for the hearing and request the family notify the PHA of any known barriers. The PHA will resolve any barriers using the guidance in Section 6 of Notice PIH 2020-32, including offering the family the opportunity to attend an in-person hearing.

If the informal review is to be conducted remotely, the PHA will require the family to provide any documents directly relevant to the informal review at least 24 hours before the scheduled review through the mail, via email, or text. The PHA will scan and email copies of these documents to the PHA representative the same day.

Documents will be shared electronically whenever possible.

The PHA will follow up the email with a phone call and/or email to the applicant at least one business day prior to the remote informal review to ensure that the applicant received all information and is comfortable accessing the video conferencing or call-in platform.

The PHA will ensure that all electronic information stored or transmitted with respect to the informal review is secure, including protecting personally identifiable information (PII), and meets the requirements for accessibility for persons with disabilities and persons with LEP.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Informal Review Decision [24 CFR 982.554(b)]

The PHA must notify the applicant of the PHA's final decision, including a brief statement of the reasons for the final decision.

PHA Policy

In rendering a decision, the PHA will evaluate the following matters:

Whether or not the grounds for denial were stated factually in the notice to the family.

The validity of the grounds for denial of assistance. If the grounds for denial are not specified in the regulations, then the decision to deny assistance will be overturned.

The validity of the evidence. The PHA will evaluate whether the facts presented prove the grounds for denial of assistance. If the facts prove that there are grounds for denial, and the denial is required by HUD, the PHA will uphold the decision to deny assistance.

If the facts prove the grounds for denial, and the denial is discretionary, the PHA will consider the recommendation of the person conducting the informal review in making the final decision whether to deny assistance.

The PHA will notify the applicant of the final decision, including a statement explaining the reason(s) for the decision. The notice will be mailed within 10 business days of the informal review, to the applicant and his or her representative, if any, along with proof of mailing.

If the decision to deny is overturned as a result of the informal review, processing for admission will resume.

If the family fails to appear for their informal review, the denial of admission will stand and the family will be so notified.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

16-III.C. INFORMAL HEARINGS FOR PARTICIPANTS [24 CFR 982.555]

PHAs must offer an informal hearing for certain PHA determinations relating to the individual circumstances of a participant family. A participant is defined as a family that has been admitted to the PHA's HCV program and is currently assisted in the program. The purpose of the informal hearing is to consider whether the PHA's decisions related to the family's circumstances are in accordance with the law, HUD regulations and PHA policies.

The PHA is not permitted to terminate a family's assistance until the time allowed for the family to request an informal hearing has elapsed, and any requested hearing has been completed. Termination of assistance for a participant may include any or all of the following:

- Refusing to enter into a HAP contract or approve a lease
- Terminating housing assistance payments under an outstanding HAP contract
- Refusing to process or provide assistance under portability procedures

Decisions Subject to Informal Hearing

Circumstances for which the PHA must give a participant family an opportunity for an informal hearing are as follows:

- A determination of the family's annual or adjusted income, and the use of such income to compute the housing assistance payment
- A determination of the appropriate utility allowance (if any) for tenant-paid utilities from the PHA utility allowance schedule
- A determination of the family unit size under the PHA's subsidy standards
- A determination to terminate assistance for a participant family because of the family's actions or failure to act
- A determination to terminate assistance because the participant has been absent from the assisted unit for longer than the maximum period permitted under PHA policy and HUD rules
- A determination to terminate a family's Family Self Sufficiency contract, withhold supportive services, or propose forfeiture of the family's escrow account [24 CFR 984.303(i)]

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Circumstances for which an informal hearing is not required are as follows:

- Discretionary administrative determinations by the PHA
- General policy issues or class grievances
- Establishment of the PHA schedule of utility allowances for families in the program
- A PHA determination not to approve an extension of a voucher term
- A PHA determination not to approve a unit or tenancy
- A PHA determination that a unit selected by the applicant is not in compliance with the HQS
- A PHA determination that the unit is not in accordance with HQS because of family size
- A determination by the PHA to exercise or not to exercise any right or remedy against an owner under a HAP contract

PHA Policy

The PHA will only offer participants the opportunity for an informal hearing when required to by the regulations, and if the PHA denies a request for a reasonable accommodation (see Chapter 2).

Remote Informal Hearings [Notice PIH 2020-32]

There is no requirement that informal hearings be conducted in-person, and as such, HUD allows PHAs to conduct all or a portion of their informal hearings remotely either over the phone, via video conferencing, or through other virtual platforms. If the PHA chooses to conduct remote informal hearings, applicants may still request an in-person informal hearing, as applicable.

PHA Policy

The PHA has the sole discretion to require that informal hearings be conducted remotely in case of local, state, or national physical distancing orders, and in cases of inclement weather or natural disaster.

In addition, the PHA will conduct an informal hearing remotely upon request as a reasonable accommodation for a person with a disability, if a participant does not have child care or transportation that would enable them to attend the informal hearing, or if the participant believes an in-person hearing would create an undue health risk. The PHA will consider other reasonable requests for a remote informal hearing on a case-by-case basis.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Ensuring Accessibility for Persons with Disabilities and LEP Individuals

As with in-person informal hearings, the platform for conducting remote informal hearings must be accessible to persons with disabilities and the informal hearings must be conducted in accordance with Section 504 and accessibility requirements. This includes ensuring any information, websites, emails, digital notifications, and other virtual platforms are accessible for persons with vision, hearing, and other disabilities. Further, providing effective communication in a digital context may require the use of individualized auxiliary aids or services, such as audio description, captioning, sign language and other types of interpreters, keyboard accessibility, accessible documents, screen reader support, and transcripts. Auxiliary aids or services must be provided in accessible formats, in a timely manner, and in such a way to protect the privacy and independence of the individual. PHAs may never request or require that individuals with disabilities provide their own auxiliary aids or services, including for remote informal hearings.

PHAs are required to make reasonable accommodations in policies, practices, and procedures to ensure persons with disabilities have a full and equal opportunity to participate in and benefit from all aspects of the informal hearing process. See Chapter 2 for a more detailed discussion of reasonable accommodation requirements.

If no method of conducting a remote informal hearings is available that appropriately accommodates an individual's disability, the PHA may not hold against the individual his or her inability to participate in the remote informal hearing, and the PHA should consider whether postponing the remote hearing to a later date is appropriate or whether there is a suitable alternative.

Due to the individualized nature of disability, the appropriate auxiliary aid or service necessary, or reasonable accommodation will depend on the specific circumstances and requirements.

As with in-person reviews, Limited English Proficiency (LEP) requirements also apply to remote informal hearings, including the use of interpretation services and document translation. See Chapter 2 for a more thorough discussion of accessibility and LEP requirements, all of which apply in the context of remote informal hearings.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Conducting Informal Hearings Remotely

The PHA must ensure that the lack of technology or inability to use technology for remote informal hearings does not pose a disadvantage to families that may not be apparent to the PHA. The PHA should determine through a survey or other means if these barriers exist prior to conducting the remote informal hearing and, if the family does not have the proper technology to fully participate, either postpone the informal hearing or provide an alternative means of access.

As with in-person informal hearings, the PHA must provide all materials presented, whether paper or electronic, to the family prior to the remote informal hearing. The family must also be provided with an accessible means by wich to transmit their own evidence.

The PHA's essential responsibility is to ensure informal hearings meet the requirements of due process and comply with HUD regulations. Therefore, all PHA policies and processes for remote informal hearings will be conducted in accordance with due process requirements, and will be in compliance with HUD regulations at 24 CFR 982.555 and the guidance for conducting remote hearings specified in Notice PIH 2020-32.

PHA Policy

The PHA will conduct remote informal hearings via a video conferencing platform, when available. If, after attempting to resolve any barriers, participants are unable to adequately access the video conferencing platform at any point, or upon request, the informal hearing will be conducted by telephone conferencing call-in. If the family is unable to adequately access the telephone conferencing call-in at any point, the remote informal hearing will be postponed, and an in-person alternative will be provided promptly within a reasonable time.

At least five business days prior to scheduling the remote hearing, the PHA will provide the family with login information and/or conferencing call-in information and an electronic copy of all materials being presented via first class mail and/or email. The notice will advise the family of technological requirements for the hearing and request the family notify the PHA of any known barriers. The PHA will resolve any barriers using the guidance in Section 6 of Notice PIH 2020-32, including offering the family the opportunity to attend an in-person hearing.

The PHA will follow up with a phone call and/or email to the family at least one business day prior to the remote informal hearing to ensure that the family received all information and is comfortable accessing the video conferencing or call-in platform.

The PHA will ensure that all electronic information stored or transmitted with respect to the informal hearing is secure, including protecting personally identifiable information (PII), and meets the requirements for accessibility for persons with disabilities and persons with LEP.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Informal Hearing Procedures

Notice to the Family [24 CFR 982.555(c)]

When the PHA makes a decision that is subject to informal hearing procedures, the PHA must inform the family of its right to an informal hearing at the same time that it informs the family of the decision.

For decisions related to the family's annual or adjusted income, the determination of the appropriate utility allowance, and the determination of the family unit size, the PHA must notify the family that they may ask for an explanation of the basis of the determination, and that if they do not agree with the decision, they may request an informal hearing on the decision.

For decisions related to the termination of the family's assistance, or the denial of a family's request for an exception to the PHA's subsidy standards, the notice must contain a brief statement of the reasons for the decision, a statement that if the family does not agree with the decision, the family may request an informal hearing on the decision, and a statement of the deadline for the family to request an informal hearing.

PHA Policy

In cases where the PHA makes a decision for which an informal hearing must be offered, the notice to the family will include all of the following:

The proposed action or decision of the PHA.

A brief statement of the reasons for the decision, including the regulatory reference.

The date the proposed action will take place.

A statement of the family's right to an explanation of the basis for the PHA's decision.

A statement that if the family does not agree with the decision the family may request an informal hearing of the decision.

A deadline for the family to request the informal hearing.

To whom the hearing request should be addressed.

A copy of the PHA's hearing procedures.

That the family may request a remote informal hearing

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Scheduling an Informal Hearing **[24 CFR 982.555(d)]**

When an informal hearing is required, the PHA must proceed with the hearing in a reasonably expeditious manner upon the request of the family.

PHA Policy

A request for an informal hearing must be made in writing and delivered to the PHA either in person or by first class mail, by the close of the business day, no later than 10 business days from the date of the PHA's decision or notice to terminate assistance.

The PHA must schedule and send written notice of the informal hearing to the family within 10 business days of the family's request.

If the PHA hearing will be conducted remotely, at the time the notice is sent to the family, the family will be notified:

Regarding the processes involved in a remote informal hearing;

That the PHA will provide technical assistance prior to and during the informal hearing, if needed; and

That if the family or any individual witness has any technological, resource, or accessibility barriers, the family may inform the PHA and the PHA will assist the family in either resolving the issue or allow the family to participate in an in-person hearing, as appropriate.

The family may request to reschedule a hearing for good cause, or if it is needed as a reasonable accommodation for a person with disabilities. Good cause is defined as an unavoidable conflict which seriously affects the health, safety or welfare of the family. Requests to reschedule a hearing must be made orally or in writing prior to the hearing date. At its discretion, the PHA may request documentation of the "good cause" prior to rescheduling the hearing.

If the family does not appear within 20 minutes of the scheduled time, and was unable to reschedule the hearing in advance due to the nature of the conflict, the family must contact the PHA within 24 hours of the scheduled hearing date, excluding weekends and holidays. The PHA will reschedule the hearing only if the family can show good cause for the failure to appear, or if it is needed as a reasonable accommodation for a person with disabilities. If the family cannot show good cause for the failure to appear, or a rescheduling is not needed as a reasonable accommodation, the PHA's decision will stand.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Pre-Hearing Right to Discovery **[24 CFR 982.555(e)]**

Participants and the PHA are permitted pre-hearing discovery rights. The family must be given the opportunity to examine before the hearing any PHA documents that are directly relevant to the hearing. The family must be allowed to copy any such documents at their own expense. If the PHA does not make the document available for examination on request of the family, the PHA may not rely on the document at the hearing.

For the purpose of informal hearings, *documents* include records and regulations.

PHA Policy

The family will be allowed to copy any documents related to the hearing at no cost to the family. The family must request discovery of PHA documents no later than 12:00 p.m. on the business day prior to the scheduled hearing date.

If the hearing will be conducted remotely, the PHA will compile a hearing packet, consisting of all documents the PHA intends to produce at the informal hearing. The PHA will mail copies of the hearing packet to the family, the family's representatives, if any, and the hearing officer at least three days before the scheduled remote informal hearing. The original hearing packet will be in the possession of the PHA representative and retained by the PHA.

Documents will be shared electronically whenever possible.

The PHA hearing procedures may provide that the PHA must be given the opportunity to examine at the PHA offices before the hearing any family documents that are directly relevant to the hearing. The PHA must be allowed to copy any such document at the PHA's expense. If the family does not make the document available for examination on request of the PHA, the family may not rely on the document at the hearing.

PHA Policy

For in-person hearings, the PHA will not require pre-hearing discovery by the PHA of family documents directly relevant to the hearing.

If the informal hearing is to be conducted remotely, the PHA will require the family to provide any documents directly relevant to the informal hearing at least 24 hours before the scheduled hearing through the mail, via email, or text. The PHA will scan and email copies of these documents to the hearing officer and the PHA representative the same day.

Documents will be shared electronically whenever possible.

Participant's Right to Bring Counsel **[24 CFR 982.555(e)(3)]**

At its own expense, the family may be represented by a lawyer or other representative at the informal hearing.

Informal Hearing Officer **[24 CFR 982.555(e)(4)]**

Informal hearings will be conducted by a person or persons approved by the PHA, other than the person who made or approved the decision or a subordinate of the person who made or approved the decision.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Attendance at the Informal Hearing

PHA Policy

Hearings may be attended by a hearing officer and the following applicable persons:

A PHA representative(s) and any witnesses for the PHA

The participant and any witnesses for the participant

The participant's counsel or other representative

Any other person approved by the PHA as a reasonable accommodation for a person with a disability

Conduct at Hearings

The person who conducts the hearing may regulate the conduct of the hearing in accordance with the PHA's hearing procedures [24 CFR 982.555(4)(ii)].

PHA Policy

The hearing officer is responsible to manage the order of business and to ensure that hearings are conducted in a professional and businesslike manner. Attendees are expected to comply with all hearing procedures established by the hearing officer and guidelines for conduct. Any person demonstrating disruptive, abusive or otherwise inappropriate behavior will be excused from the hearing at the discretion of the hearing officer.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Evidence **[24 CFR 982.555(e)(5)]**

The PHA and the family must be given the opportunity to present evidence and question any witnesses. In general, all evidence is admissible at an informal hearing. Evidence may be considered without regard to admissibility under the rules of evidence applicable to judicial proceedings.

PHA Policy

Any evidence to be considered by the hearing officer must be presented at the time of the hearing. There are four categories of evidence.

Oral evidence: the testimony of witnesses

Documentary evidence: a writing which is relevant to the case, for example, a letter written to the PHA. Writings include all forms of recorded communication or representation, including letters, words, pictures, sounds, videotapes or symbols or combinations thereof.

Demonstrative evidence: Evidence created specifically for the hearing and presented as an illustrative aid to assist the hearing officer, such as a model, a chart or other diagram.

Real evidence: A tangible item relating directly to the case.

Hearsay Evidence is evidence based not on a witness' personal knowledge. In and of itself, hearsay evidence carries no weight when making a finding of fact. The hearing officer may include hearsay evidence when considering their decision if it is corroborated by other evidence. Even though hearsay evidence is generally admissible in a hearing, the hearing officer will not base a hearing decision on hearsay alone unless there is clear probative value and credibility of the evidence, and the party seeking the change has met the burden of proof.

If either the PHA (or the family, if required in a remote hearing) fail to comply with the discovery requirements described above, the hearing officer will refuse to admit such evidence.

Other than the failure of a party to comply with discovery, the hearing officer has the authority to overrule any objections to evidence.

Procedures for Rehearing or Further Hearing

PHA Policy

The hearing officer may ask the family for additional information and/or might adjourn the hearing in order to reconvene at a later date, before reaching a decision. If the family misses an appointment or deadline ordered by the hearing officer, the action of the PHA will take effect and another hearing will not be granted.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Hearing Officer's Decision [24 CFR 982.555(e)(6)]

The person who conducts the hearing must issue a written decision, stating briefly the reasons for the decision. Factual determinations relating to the individual circumstances of the family must be based on a preponderance of evidence presented at the hearing.

PHA Policy

In rendering a decision, the hearing officer will consider the following matters:

PHA Notice to the Family: The hearing officer will determine if the reasons for the PHA's decision are factually stated in the Notice.

Discovery: The hearing officer will determine if the PHA and the family were given the opportunity to examine any relevant documents in accordance with PHA policy.

PHA Evidence to Support the PHA Decision: The evidence consists of the facts presented. Evidence is not conclusion and it is not argument. The hearing officer will evaluate the facts to determine if they support the PHA's conclusion.

Validity of Grounds for Termination of Assistance (when applicable): The hearing officer will determine if the termination of assistance is for one of the grounds specified in the HUD regulations and PHA policies. If the grounds for termination are not specified in the regulations or in compliance with PHA policies, then the decision of the PHA will be overturned.

The hearing officer will issue a written decision to the family and the PHA no later than 10 business days after the hearing. The report will contain the following information:

Hearing information:

Name of the participant;

Date, time and place of the hearing;

Name of the hearing officer;

Name of the PHA representative; and

Name of family representative (if any).

Background: A brief, impartial statement of the reason for the hearing.

Summary of the Evidence: The hearing officer will summarize the testimony of each witness and identify any documents that a witness produced in support of his/her testimony and that are admitted into evidence.

Findings of Fact: The hearing officer will include all findings of fact, based on a preponderance of the evidence. *Preponderance of the evidence* is defined as evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proved is more probable than not. Preponderance of the evidence may not be determined by the number of witnesses, but by the greater weight of all evidence.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Conclusions: The hearing officer will render a conclusion derived from the facts that were found to be true by a preponderance of the evidence. The conclusion will result in a determination of whether these facts uphold the PHA's decision.

Order: The hearing report will include a statement of whether the PHA's decision is upheld or overturned. If it is overturned, the hearing officer will instruct the PHA to change the decision in accordance with the hearing officer's determination. In the case of termination of assistance, the hearing officer will instruct the PHA to restore the participant's program status.

Issuance of Decision **[24 CFR 982.555(e)(6)]**

A copy of the hearing must be furnished promptly to the family.

PHA Policy

The hearing officer will mail a "Notice of Hearing Decision" to the PHA and to the participant on the same day. This notice will be sent by first-class mail. The participant will be mailed the original "Notice of Hearing Decision" and a copy of the proof of mailing. A copy of the "Notice of Hearing Decision" will be maintained in the PHA's file.

Effect of Final Decision **[24 CFR 982.555(f)]**

The PHA is not bound by the decision of the hearing officer for matters in which the PHA is not required to provide an opportunity for a hearing, decisions that exceed the authority of the hearing officer, decisions that conflict with or contradict HUD regulations, requirements, or are otherwise contrary to federal, state, or local laws.

If the PHA determines it is not bound by the hearing officer's decision in accordance with HUD regulations, the PHA must promptly notify the family of the determination and the reason for the determination.

PHA Policy

The Executive Director has the authority to determine that the PHA is not bound by the decision of the hearing officer because the PHA was not required to provide a hearing, the decision exceeded the authority of the hearing officer, the decision conflicted with or contradicted HUD regulations, requirements, or the decision was otherwise contrary to federal, state, or local laws.

In such a case, the PHA will mail a "Notice of Final Decision" to the PHA and the participant on the same day. The "Notice of Final Decision" will be sent by first-class mail. A copy of this notice will be maintained in the PHA's file.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

16-III.D. HEARING AND APPEAL PROVISIONS FOR NONCITIZENS [24 CFR 5.514]

Denial or termination of assistance based on immigration status is subject to special hearing and notice rules. Applicants who are denied assistance due to immigration status are entitled to an informal hearing, not an informal review.

Assistance to a family may not be delayed, denied, or terminated on the basis of immigration status at any time prior to a decision under the United States Citizenship and Immigration Services (USCIS) appeal process. Assistance to a family may not be terminated or denied while the PHA hearing is pending, but assistance to an applicant may be delayed pending the completion of the informal hearing.

A decision against a family member, issued in accordance with the USCIS appeal process or the PHA informal hearing process, does not preclude the family from exercising the right, that may otherwise be available, to seek redress directly through judicial procedures.

Notice of Denial or Termination of Assistance [24 CFR 5.514(d)]

The notice of denial or termination of assistance for noncitizens must advise the family:

- That financial assistance will be denied or terminated, and provide a brief explanation of the reasons for the proposed denial or termination of assistance.
- The family may be eligible for proration of assistance.
- In the case of a participant, the criteria and procedures for obtaining relief under the provisions for preservation of families [24 CFR 5.514 and 5.518].
- That the family has a right to request an appeal to the USCIS of the results of secondary verification of immigration status and to submit additional documentation or explanation in support of the appeal.
- That the family has a right to request an informal hearing with the PHA either upon completion of the USCIS appeal or in lieu of the USCIS appeal.
- For applicants, assistance may not be delayed until the conclusion of the USCIS appeal process, but assistance may be delayed during the period of the informal hearing process.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

USCIS Appeal Process [24 CFR 5.514(e)]

When the PHA receives notification that the USCIS secondary verification failed to confirm eligible immigration status, the PHA must notify the family of the results of the USCIS verification. The family will have 30 days from the date of the notification to request an appeal of the USCIS results. The request for appeal must be made by the family in writing directly to the USCIS. The family must provide the PHA with a copy of the written request for appeal and the proof of mailing.

PHA Policy

The PHA will notify the family in writing of the results of the USCIS secondary verification within 10 business days of receiving the results.

The family must provide the PHA with a copy of the written request for appeal and proof of mailing within 10 business days of sending the request to the USCIS.

The family must forward to the designated USCIS office any additional documentation or written explanation in support of the appeal. This material must include a copy of the USCIS document verification request (used to process the secondary request) or such other form specified by the USCIS, and a letter indicating that the family is requesting an appeal of the USCIS immigration status verification results.

The USCIS will notify the family, with a copy to the PHA, of its decision. When the USCIS notifies the PHA of the decision, the PHA must notify the family of its right to request an informal hearing.

PHA Policy

The PHA will send written notice to the family of its right to request an informal hearing within 10 business days of receiving notice of the USCIS decision regarding the family's immigration status.

Informal Hearing Procedures for Applicants [24 CFR 5.514(f)]

After notification of the USCIS decision on appeal, or in lieu of an appeal to the USCIS, the family may request that the PHA provide a hearing. The request for a hearing must be made either within 30 days of receipt of the PHA notice of denial, or within 30 days of receipt of the USCIS appeal decision.

The informal hearing procedures for applicant families are described below.

Informal Hearing Officer

The PHA must provide an informal hearing before an impartial individual, other than a person who made or approved the decision under review, and other than a person who is a subordinate of the person who made or approved the decision. See Section 16-III.C. for a listing of positions that serve as informal hearing officers.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Evidence

The family must be provided the opportunity to examine and copy at the family's expense, at a reasonable time in advance of the hearing, any documents in the possession of the PHA pertaining to the family's eligibility status, or in the possession of the USCIS (as permitted by USCIS requirements), including any records and regulations that may be relevant to the hearing.

PHA Policy

The family will be allowed to copy any documents related to the hearing at a cost of $.25 per page. The family must request discovery of PHA documents no later than 12:00 p.m. on the business day prior to the hearing.

The family must be provided the opportunity to present evidence and arguments in support of eligible status. Evidence may be considered without regard to admissibility under the rules of evidence applicable to judicial proceedings.

The family must also be provided the opportunity to refute evidence relied upon by the PHA, and to confront and cross-examine all witnesses on whose testimony or information the PHA relies.

Representation and Interpretive Services

The family is entitled to be represented by an attorney or other designee, at the family's expense, and to have such person make statements on the family's behalf.

The family is entitled to request an interpreter. Upon request, the PHA will provide competent interpretation services, free of charge.

Recording of the Hearing

The family is entitled to have the hearing recorded by audiotape. The PHA may, but is not required to provide a transcript of the hearing.

PHA Policy

The PHA will not provide a transcript of an audio taped hearing.

Hearing Decision

The PHA must provide the family with a written final decision, based solely on the facts presented at the hearing, within 14 calendar days of the date of the informal hearing. The decision must state the basis for the decision.

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.

Informal Hearing Procedures for Residents [24 CFR 5.514(f)]

After notification of the USCIS decision on appeal, or in lieu of an appeal to the USCIS, the family may request that the PHA provide a hearing. The request for a hearing must be made either within 30 days of receipt of the PHA notice of termination, or within 30 days of receipt of the USCIS appeal decision.

For the informal hearing procedures that apply to participant families whose assistance is being terminated based on immigration status, see Section 16-III.C.

Retention of Documents [24 CFR 5.514(h)]

The PHA must retain for a minimum of 5 years the following documents that may have been submitted to the PHA by the family, or provided to the PHA as part of the USCIS appeal or the PHA informal hearing process:

- The application for assistance
- The form completed by the family for income reexamination
- Photocopies of any original documents, including original USCIS documents
- The signed verification consent form
- The USCIS verification results
- The request for a USCIS appeal
- The final USCIS determination
- The request for an informal hearing
- The final informal hearing decision

© Copyright 2021 Nan McKay & Associates, Inc.
Unlimited copies may be made for internal use.



NOTE:
PLANS DESIGNED TO THE
2015 INTERNATIONAL
BUILDING CODE.

LIFE SAFETY & BUILDING CODE ANALYSIS FOR MAPLE STREET PROJECT DECEMBER 31, 2019

1. APPLICABLE CODES:
   - a. INTERNATIONAL BUILDING CODE - 2015 (IBC)
   - b. INTERNATIONAL ENERGY CONSERVATION CODE 2015 (IBC)
   - c. NATIONAL ELECTRICAL CODE 2017
   - d. ICC/ANSI A 117.1 - LATEST EDITION ACCESSIBLE & USABLE BUILDINGS & FACILITIES
   - e. FAIR HOUSING ACT DESIGN MANUAL, US DEPT OF HOUSING AND URBAN DEVELOPMENT (HUD) REV. APRIL 1998
   - f. ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADA - AG) 2010
   - g. NFPA 10, FIRE EXTINGUISHER, 2009
   - h. NFPA 13R, SPRINKLER SYSTEMS, 2009
   - j. NFPA 101, LIFE SAFETY CODE, 2009
2. USE GROUP CLASSIFICATION: IBC CHAPTER 3:

AREA	IBC (CHAPTER 3)
RESIDENTIAL	RESIDENTIAL (R-2) 310.4-2015 IBC

3. MINIMUM OCCUPANCY SEPARATION - IBC TABLE 508.4 RATING 1 HOUR:

   NOTE: BUILDINGS ARE EQUIPPED THROUGHOUT WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH NFPA 13R
4. CONSTRUCTION TYPE: IBC CHAPTER 6, TABLE 601:

   TYPE 5A
5. FIRE RESISTIVE RATING REQUIREMENTS FOR EXTERIOR WALLS - IBC CHAPTER 6, TABLE 602
6. ADJUSTED PERMISSIBLE SQUARE FOOTAGE WITH NFPA SPRINKLER SYSTEM:

   RESIDENTIAL - 24,000 S.F.
7. ACTUAL SQUARE FOOTAGE:

   FIRST LIVING LEVEL: 1,768 SF
   SECOND LIVING LEVEL: 1,768 SF BUILDING TOTAL: 5,304
   THIRD LIVING LEVEL: 1,768 SF
8. UNADJUSTED ALLOWABLE HEIGHTS:

   RESIDENTIAL (R-2) - 3 STORIES, 50 FEET
9. ACTUAL HEIGHTS OF BUILDING:

   37 FEET 8 INCHES
10. FIRE RESISTIVE RATINGS OF STRUCTURAL ELEMENTS (HOURS): (IBC) 601
    - a. BUILDINGS CONFORM TO TABLE 601 FOR BUILDING ELEMENTS
11. MAXIMUM LENGTH OF EXIT ACCESS TRAVEL - 2015 IBC - TABLE 1006.3.2(1):
    - a. ALL UNITS MEET THE CODE REQUIRED DISTANCE. GREATEST TRAVEL DISTANCE IS 125 FEET.
12. NUMBER OF EXITS IS MET PER CODE - SECTION 1006 AND SECT. 1006.2.1 EX. 1 FOR USE GROUP R-2.

    EGRESS DOORS ARE ALL 3'-0"
    GROUND LEVEL, 2 EXIT DOORS; 1ST ABOVE GRADE LEVEL, 1 EXIT DOOR AND SLEEPING ROOMS WITH WINDOWS COMPLING TO SECTION 1030 IBC 2015
13. PLUMBING FIXTURES (IBC CODE):
    - a. PLUMBING FIXTURES AND INSTALLATION WILL MEET THE IBC PLUMBING CODE



FRONT ELEVATION

SCALE: 1/4" = 1'-0"

REFER TO SECTIONS 1015.8 OF THE 2015 I.B.C. WINDOW SILL HEIGHT ABOVE GROUND (OR SURFACE BELOW) AND FOR EGRESS WINDOWS & BASEMENTS PRIOR TO PLACING WINDOW ORDER

REFER TO SECTION 311 OF THE 2015 I.R.C. FOR MEANS OF EGRESS PRIOR TO ORDERING DOORS AND SECT. 2406 (I.B.C.) FOR GLAZING IN HAZARDOUS LOCATIONS DOORS ADJACENT TO DOOR AND, ADJACENT TO STAIRS, AND OTHERS PRIOR TO ORDERING DOORS.

NOTES:
1. DECK(S) NOT SHOWN FOR CLARITY - CONSULT CONTRACTOR IN FIELD FOR EXACT SIZE & LOCATION
2. REFER TO FLOOR PLANS FOR EXACT LOCATION OF WINDOWS & DOORS - DO NOT SCALE FROM ELEVATIONS



REAR ELEVATION

SCALE: 1/4" = 1'-0"

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERRORS, OMISSIONS AND/OR OVERSIGHTS, WE RECOGNIZE THAT HUMAN AND THEREFORE FSM DRAWINGS LLC ACTING SOLELY AS A DESIGNER AND NOT AS A CONTRACTOR OR BUILDER OF THE CONSTRUCTION USING THESE PLANS IS THOROUGHLY REVIEW THEM FOR CORRECTNESS, ACCURACY AND COMPLETENESS. FSM DRAWINGS LLC ASSUMES NO RESPONSIBILITY FOR THEM AND WILL NOT BE RESPONSIBLE FOR ANY ERRORS, OMISSIONS AND/OR OVERSIGHTS IF THEY ARE NOT BROUGHT TO OUR ATTENTION BY A LICENSED PROFESSIONAL ENGINEER TO ASSIST IN THE REVIEW.

FSM DRAWINGS
271 OWELL ST. STE 501 MANCHESTER NH
O:603.339.3660 FAX:208.DIRECT 603-315-8383

VORBACH ARCHITECTURE
ADDRESS:
58 MANCHESTER ST
CONCORD, NH
VORBACHARCHITECTURE@GMAIL.COM
TEL: 603-496-7338

PROJECT: 48 Whittier St.Dover NH
PREPARED FOR: DOVER HOUSING AUTHORITY

REVISIONS		
NO.	DATE	REVISION
4	7/7/21	PERMIT SET FOR REVIEW
5	8/1/21	TRC COMMENTS
6	9/8/21	BOS REVIEW
7	3/9/22	RELEASED FOR PERMIT

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

1

NOTE:
PLANS DESIGNED TO THE
2015 INTERNATIONAL
BUILDING CODE.

REFER TO SECTIONS 1015.8 OF THE 2015 I.B.C. FOR WINDOW SILL HEIGHT ABOVE GROUND (OR SURFACE BELOW) AND FOR EGRESS WINDOWS & BASEMENTS PRIOR TO PLACING WINDOW ORDER

REFER TO CHAPTER 10 OF THE 2015 I.B.C. FOR MEANS OF EGRESS PRIOR TO ORDERING DOORS

EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE, AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS.
IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW, AND THE TOP OF THE SILL IS LOCATED LESS THAN 36" ABOVE THE FINISHED FLOOR, WINDOWS TO COMPLY WITH SECTION 1015.8 OF THE 2015 I.B.C.

SQUARE FOOTAGE TABLE

TOTALS EXCLUDE UNFINISHED/STORAGE, GARAGE & OPEN AREAS

RESIDENTIAL UNITS

UNIT # 1	SQ. FTG.
GROUND FLOOR	790
TOTAL:	790

UNIT # 2	SQ. FTG.
GROUND FLOOR	790
TOTAL:	790

UNIT # 3	SQ. FTG.
FIRST FLOOR	442
SECOND FLOOR	442
TOTAL:	884

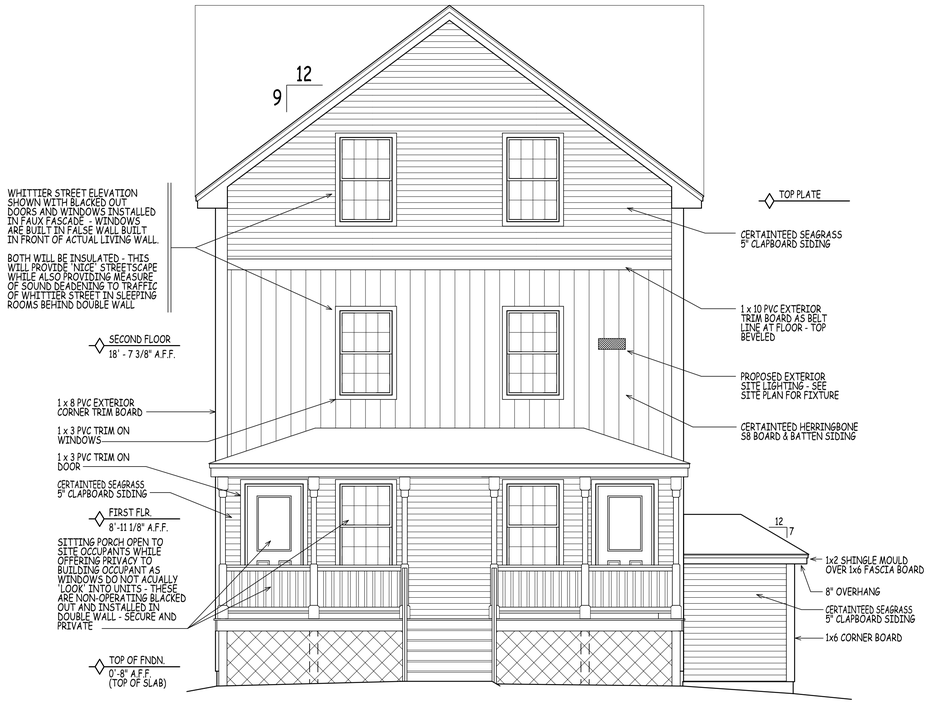
UNIT # 4	SQ. FTG.
FIRST FLOOR	442
SECOND FLOOR	442
TOTAL:	884

UNIT # 5	SQ. FTG.
FIRST FLOOR	442
SECOND FLOOR	442
TOTAL:	884

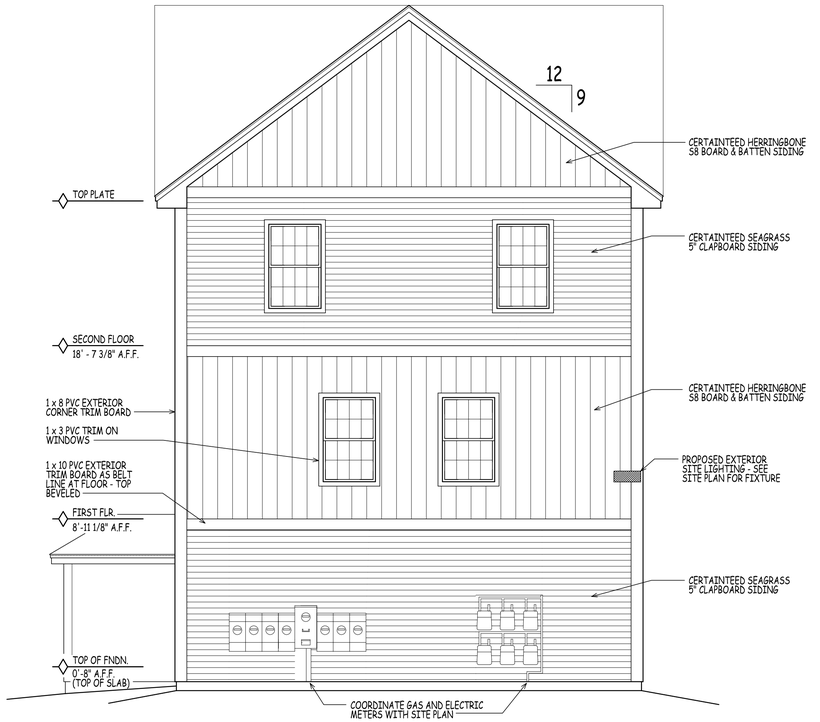
UNIT # 6	SQ. FTG.
FIRST FLOOR	442
SECOND FLOOR	442
TOTAL:	884

NOTE:
SQUARE FOOTAGE INCLUDES ALL WALL STRUCTURE, LIVING SPACE, CLOSETS, & STAIRS, HOWEVER, DOES NOT INCLUDE GARAGE SPACE, DECKS, PATIO'S OR OPEN AREAS.

TAKE NOTE THAT BUILDER'S SQUARE FOOTAGE CALCULATIONS MAY VARY FROM DRAFTER'S.



RIGHT SIDE (WHITTEIR ST) ELEV
SCALE: 1/4" = 1'-0"



LEFT SIDE ELEVATION
SCALE: 1/4" = 1'-0"

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERRORS, OMISSIONS AND/OR OVERSIGHT, WE ARE ONLY HUMAN AND THEREFORE FSM DRAWINGS LLC ATTRIBUTES SOLELY CONSTRUCTION USING THESE PLANS TO THOROUGHLY REVIEW THEM FOR CORRECTNESS, ACCURACY AND COMPLETENESS PRIOR TO CONSTRUCTION. ANY CONSTRUCTION USING THESE PLANS WILL BE DEEMED AS ASSUMING ALL RESPONSIBILITY FOR THEM AND WILL RELEASE FSM DRAWINGS LLC FROM ANY AND ALL LIABILITIES. WE ENCOURAGE ALL OWNERS TO HIRE PROFESSIONAL BUILDERS TO ASSIST IN THE REVIEW.

FSM DRAWINGS
27 LOWELL ST. STE 503 MANCHESTER NH
O:603.339.3660 7ATTICK DIRECT 603-315-8188

VORBACH ARCHITECTURE
ADDRESS:
58 MANCHESTER ST
MANCHESTER, NH
VORBACHARCHITECTURE@AOL.COM
TEL: 603-386-7738

PROJECT: 48 Whittier St.Dover NH
PREPARED FOR: DOVER HOUSING AUTHORITY

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

REVISIONS

NO.	DATE	REVISION
4	7/7/21	PERMIT SET FOR REVIEW
5	8/1/21	TRC COMMENTS
6	9/8/21	85% REVIEW
7	3/9/22	RELEASED FOR PERMIT

2

NOTE:
SQUARE FOOTAGE INCLUDES ALL WALL STRUCTURE, LIVING SPACE CLOSETS, & STAIRS, HOWEVER, DOES NOT INCLUDE GARAGE SPACE, DECKS, PATIO'S OR OPEN AREAS.

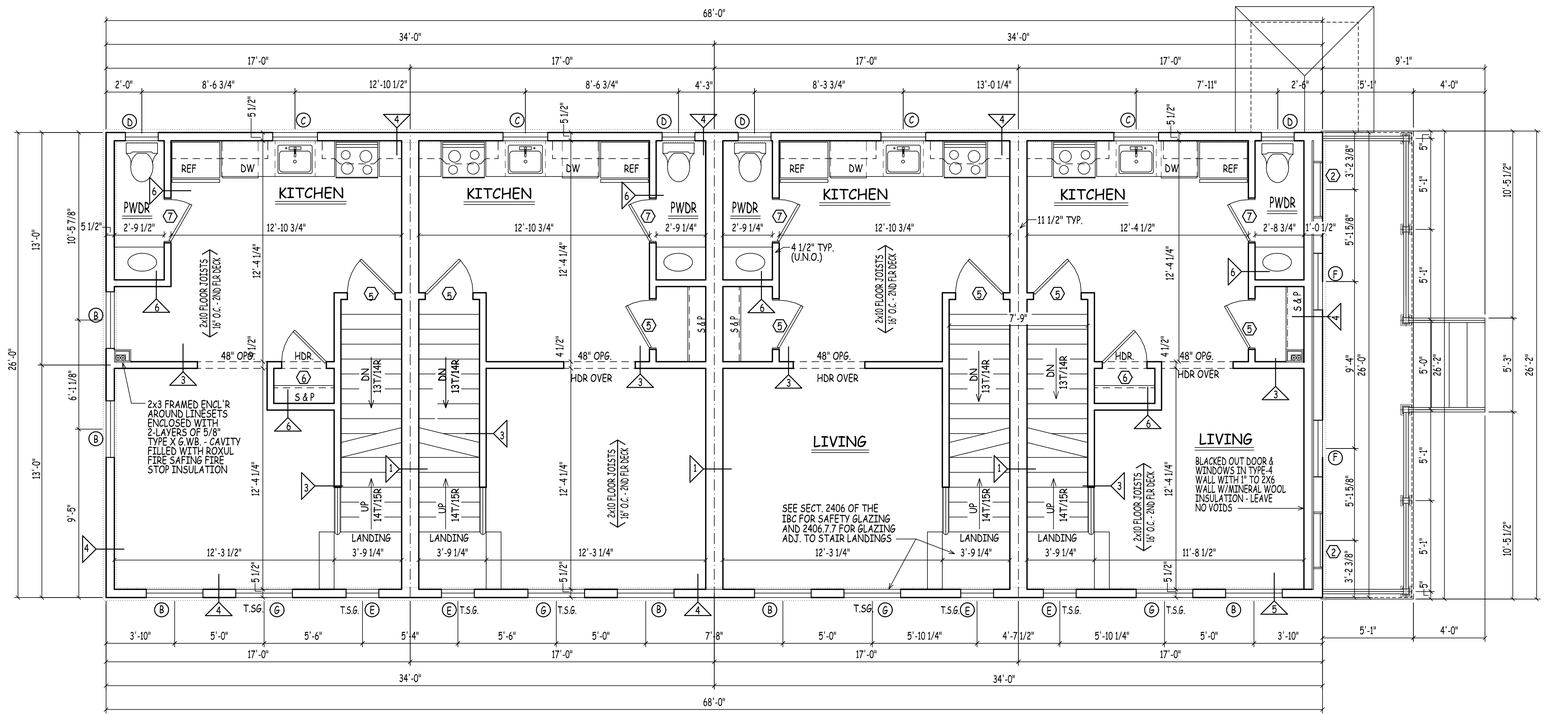
TAKE NOTE THAT BUILDER'S SQUARE FOOTAGE CALCULATIONS MAY VARY FROM DRAFTER'S.

703.7 2015 IBC MARKING AND IDENTIFICATION

AT FIRE BARRIERS, HORIZONTAL BARRIERS, SMOKE BARRIERS AND FIRE PARTITIONS REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS IT IS REQUIRED TO PERMANENTLY MARK WITH SIGNS OR STENCILING USING 3" LETTERING IN 3/8" STROKE OF CONTRASTING COLOR THE SUGGESTED WORDING: "FIRE AND OR SMOKE BARRIER - PROTECT ALL OPENINGS" OR OTHER WORDING

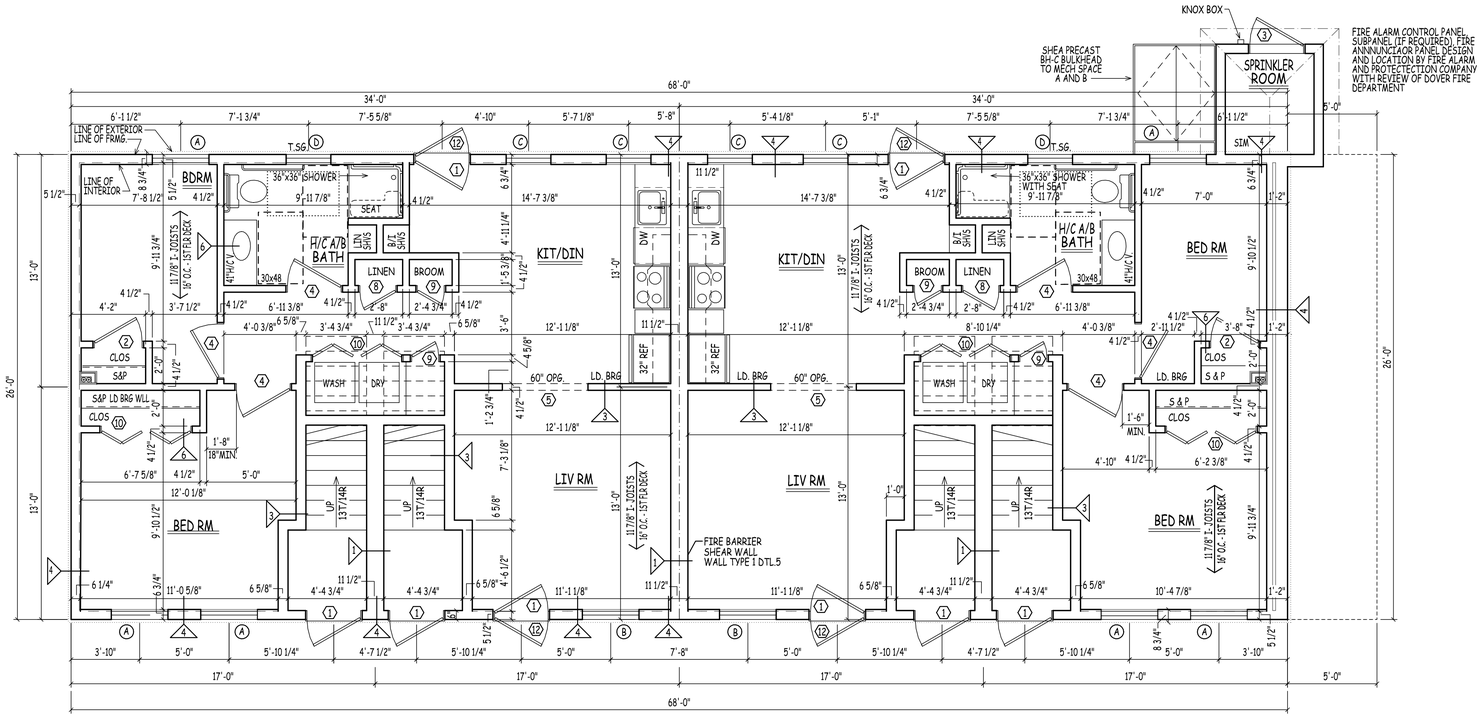
NOTE:
PLANS DESIGNED TO THE 2015 INTERNATIONAL BUILDING CODE.

A.F.F. 0"-0"	(HEIGHT) ABOVE FIRST FLOOR
AMSV	ADHERED MANUFACTURED STONE VENEER
A.W.C.	AMERICAN WOOD COUNCIL
B.F.F. -(0"-"0)	(DEPTH) BELOW FIRST FLOOR
BM. OVER	BEAM OVER
B.O.	BOTTOM OF
CHAP.	CHAPTER
CLG.	CEILING
CONC.	CONCRETE
CONT.	CONTINUOUS
DW	DISH WASHER
ENGR/ENGR'G	ENGINEER/ENGINEERING
F.R.T.	FIRE RETARDANT TREATED
FNDN	FOUNDATION
FTG.	FOOTING
H/C A/B	HANDICAP ACCESIBLE (TYPE A, B AND A/B)
HDR.	HEADER
JST.	JOIST
I.A.W.	IN ACCORDANCE WITH
LD. BRG.	LOAD BEARING
MIN.	MINIMUM
MAX.	MAXIMUM
MVMA	MASONRY VENEER MANUFACTURERS ASSOCIATION
OPG.	OPENING
PLT.	PLATE
POLY.	POLYETHYLENE
PWDR	POWDER (TOILET ROOM)
REF	REFRIGERATOR
SECT.	SECTION
S & P	SHELF & POLE
T.S.G.	TEMPERED SAFETY GLAZING
T.O.	TOP OF
TYP.	TYPICAL
U/S	UNDERSIDE
V/B	VAPOR BARRIER
W/C	WATER CLOSET (TOILET CLOSET)
W.I.C.	WALK IN CLOSET



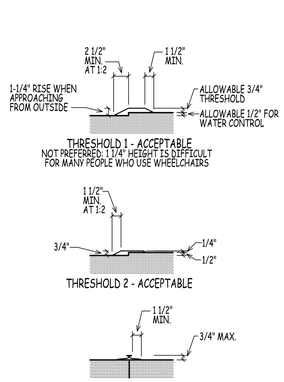
FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"



GROUND FLOOR PLAN

SCALE: 1/4" = 1'-0"



THRESHOLD DETAILS AT PRIMARY ENTRIES WITH IMPERVIOUS LANDING SURFACES (4.12)
N.T.S.

MAX. ALLOWABLE HT DIFFERENCE BETWEEN INTERIOR FLOOR LEVEL AND EXTERIOR FLOOR LEVEL (4.11):

LEVEL DIFF.	AT PRIMARY ENTRY DOOR
0"	PERVIOUS CONSTRUCTION (E.G., WOOD DECKING W/ SPACES)
1/2"	IMPERVIOUS CONSTRUCTION (E.G. CONCRETE, BRICK, OR FLAGSTONE)
LEVEL DIFF.	AT SECONDARY DOOR
1/2"	PERVIOUS CONSTRUCTION
4"	IMPERVIOUS CONSTRUCTION (E.G. CONCRETE, BRICK, OR FLAGSTONE)

FROM FAIR HOUSING ACT, PART 2: CHAPTER 4: ACCESSIBLE ROUTES TO AND THROUGH UNITS
THE FHA DOES ALLOW, TO PREVENT WATER DAMAGE, THE FINISHED SURFACE OUTSIDE THE PRIMARY ENTRY DOOR TO BE SLOPED 1/8" PER FOOT (4.11)

DOOR SCHEDULE

MARK	QTY	SIZE	RSO	NOTES
1		3'-0" x 6'8"		ENTRY DOOR
2		3'-0" x 6'8"		BLACKED OOT FIXED DOOR
3		3'-0" x 7'0"		EXT.STEEL DOOR
4		3'-0" x 6'8"		INTERIOR
5		2'-8" x 6'8"		INTERIOR
6		2'-6" x 6'8"		INTERIOR
7		2'-4" x 6'8"		INTERIOR
8		2'-0" x 6'8"		INTERIOR
9		1'-6" x 6'8"		INTERIOR
10		5'-0" x 6'8"		INT.BI-FOLD
11		4'-0" x 6'8"		INT.BI-FOLD
12		3'-0" x 6'8"		FULL VIEW STROM
13		2'-6" x 8'2"		INT.DBL.DOOR

RSO TO BE DETERMINED BY WINDOW MANUFACTURE-CONTRACTOR TO DETERMINE FINAL WINDOW COUNT

WINDOW SCHEDULE

MARK	QTY	SIZE	RSO	NOTES
A		30410		DBL-HUNG-EGRESS
B		30410		DBL-HUNG
C		2432		DBL-HUNG
D		AWN-21		AWNING
E		AWN-21		FIXED
F		30410		BLACKED OUT FIXED
G		30410		DH TEMPERED
H				SAFETY GLASS
J				

RSO TO BE DETERMINED BY WINDOW MANUFACTURE-CONTRACTOR TO DETERMINE FINAL WINDOW COUNT

(NOTE: HARVEY TRIBUTE OR MAJESTY MODEL ARE GIVEN ABOVE ONLY FOR THE PURPOSE OF PROVIDING A REFERENCE FOR COMPARING ROUGH OPENING SIZES WITH ANOTHER MANUFACTURER. CONSULT OWNER FOR THE EXACT WINDOW MANUFACTURER CHOSEN FOR THIS HOME)

EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE, AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS - (SECT. 1030 IBC 2015) IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW AND THE TOP OF THE SILL IS LOCATED LESS THAN 36" ABOVE THE FINISHED FLOOR, WINDOWS TO COMPLY WITH SECTION 1015.8 OF THE 2015 I.B.C.

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERRORS, OMISSIONS AND/OR OVERSIGHTS, WE ARE ONLY HUMAN, AND THEREFORE FAR FROM INFALLIBLE. ACCEPTANCE OF THESE PLANS BY THE BUILDING INSPECTOR OR OTHER CONSTRUCTION USING THESE PLANS IS TO THOROUGHLY REVIEW THEM FOR CORRECTNESS AND COMPLETENESS. WE ASSUME NO RESPONSIBILITY FOR ERRORS, OMISSIONS AND/OR OVERSIGHTS RESULTING FROM THE USE OF THESE PLANS. ASSUMES ALL RESPONSIBILITY FOR THEIR ACCURACY AND WILL REVISE AS NECESSARY TO ASSIST IN THE REVIEW.

FSM DRAWINGS
271 LOWELL ST. STE 500 MANCHESTER NH
(O)603.836.3660 7470X DIRECT 603-315-8188

VORBACH ARCHITECTURE
ADDRESS:
58 MANCHESTER ST
MANCHESTER, NH
VORBACHARCHITECTURE@GMAIL.COM
TEL: 603-386-7738

PROJECT: 48 Whittier St.Dover NH
PREPARED FOR: DOVER HOUSING AUTHORITY

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

REVISIONS

NO.	DATE	REVISION
3	6/14/21	50% PLAN REVIEW
4	7/7/21	PERMIT-SET FOR REVIEW
5	8/1/21	TRC COMMENTS
6	9/8/31	85% REVIEW

3

ROOF CONSTRUCTION:

PREMANUFACTERED ROOF TRUSSES - BY OTHERS

235# CLASS B OR BTR, ASPHALT SHINGLES ON 15# BUILDING PAPER ON HUBER ZIP ROOF EXC. WHERE NOTED FOR FIRE BARRIERS

POST JOBSITE POSTER ZIP SYSTEM ROOF SHEATHING INSTALL/DETAILS

ICE & WEATHER SHIELD AT RAFTER TAILS & VALLEYS

EAVE/RAKE: METAL DRIP EDGE
1x4 PINE BLOCKING (SUB-FASCIA)
1x8 PINE BD. FASCIA
3/8" AC EXT. GD. PLYWD SOFFIT W/2" CONT. LOUVERED VENT (SOFFIT ONLY)

EXTERIOR WALL CONSTRUCTION:

2 x 6 WOOD STUDS @ 16" O.C. - ZIP SYSTEM R-6.6 SHEATHING

POST JOBSITE POSTER FOR ZIP SYSTEM-R SHEATHING DETAILS

2 x 6 DOUBLE TOP PLATE

2 x 6 SINGLE BOTTOM PLATE ON P.T. SILL PLATE ON SILL SEAL

INTERIOR CONSTRUCTION:

2 x 4 & 2x6 WOOD STUDS @ 16" O.C.

2 x 4 OR 2x6 DOUBLE TOP PLATE

2 x 4 OR 2x6 SINGLE BOTTOM PLATE

WALL- 5/8" GYPSUM WALL BOARD EA. SIDE STUD - MOISTURE-RESISTANT / FIRE-RATED WHERE REQUIRED - SEE WALL TYPES

CLG.- 5/8" G.W.B. CONSTRUTED PER FLOOR/CEILINGS DETAILS SHOWN IN RATED ASSEMBLIES

2x12 STAIR STRINGERS @ 12" O.C. - SEE DETAILS AND INSTALL STOP. PREMANUFACTURED HANGERS/STRAPS AND ALL FASTERS PER SCHEDULE BY ENGINEER/MANUFACTURER

FLOOR CONSTRUCTION:

2x WOOD FLOOR JOISTS (SIZE & SPACING BY OTHERS) W/ 3/4" TONGUE & GROOVE PLYWOOD GLUED & NAILED (TYP. U.O.N.); I-JOISTS, WHERE USED, PER MANUF. PLACED PER LAYOUT PLAN BY MANUF - HAVE INSTALLATION JOBSHEET POSTER POSTED

BEAMS & BUILT-UP BEAMS - BY OTHERS

FOUNDATION CONSTRUCTION:

8" CONCRETE FOUNDATION WALL WITH DBL. 2x6 P.T. SILL WITH SILL SEAL (UNLESS OTHERWISE NOTED)

8" CONC. FROST WALLS (WHERE SHOWN) TO 48" BELOW GD.

CONTINUOUS CONCRETE FOOTING - SIZE BY ENGINEER

REINFORCEMENT SCHEDULES BY ENGINEER

PROVIDE MATCHING CORNER DOWELS LAP 50 BAR DIAMETERS (TYPICAL)

PROVIDE 3 1/2" DIA. STEEL COLUMNS OVER CONCRETE FOOTINGS AS REQ'D FOR BEAMS SHOWN ON PLAN

INSULATION

WALLS: R-20 CAVITY INSULATION OR R-13 PLUS R-5 (ZONE 5)
R-20 CAVITY INSULATION PLUS R-5 OR R-13 PLUS R-10 (ZONE 6)

FLOOR: R-30 OR INSULATION SUFFICIENT TO FILL JOIST CAVITY

CEILING: R-49 (ZONE 5 & 6) - HOWEVER, IF MAINTAINING THE FULL R VALUE OVER THE PLATES (RAISED) R-38 (ZONE 5 & 6)

MOISTURE VAPOR RETARDERS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE 2015 I.B.C.

GEOTECHNICAL ENGINEERING SERVICES (ON EXISTING CONDITIONS AND PROPOSED CONSTRUCTION) TO BE BY OTHERS

CONTRACTOR TO PROVIDE ADEQUATE VAPOR BARRIERS UNDER ALL CONCRETE SLABS

CONTRACTOR TO PROVIDE ADEQUATE HEADERS OVER ALL WINDOWS AND DOORS ON EXTERIOR LOAD-BEARING WALLS (TYP.)

LIFE SAFETY CODES, AND WHERE APPLICABLE THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT AND FAIR HOUSING ACT

DOUBLE UP FLOOR JOISTS @ LOCATIONS OF NON-LOAD BEARING WALLS AND UNDER ALL BATHROOMS (I.E. BATHING TUBS/WHIRLPOOLS), KITCHENS, LAUNDRY ROOMS, ETC. (TYPICAL)

CONTRACTOR TO PROVIDE ADEQUATE BLOCKING AND BRIDGING BETWEEN FLOOR JOISTS AS REQUIRED (TYPICAL)

NOTE:
SEE THE NEW HAMPSHIRE BUILDING CODE (IBC, IPC, IMC, IECC, IRC, & IEBC) AS PUBLISHED BY THE ICC AND THE NATIONAL ELECTRICAL CODE AS PUBLISHED BY THE NFPA FOR IN DEPTH DETAILS ON BUILDING IN ACCORDANCE WITH CITY BUILDING REGULATIONS

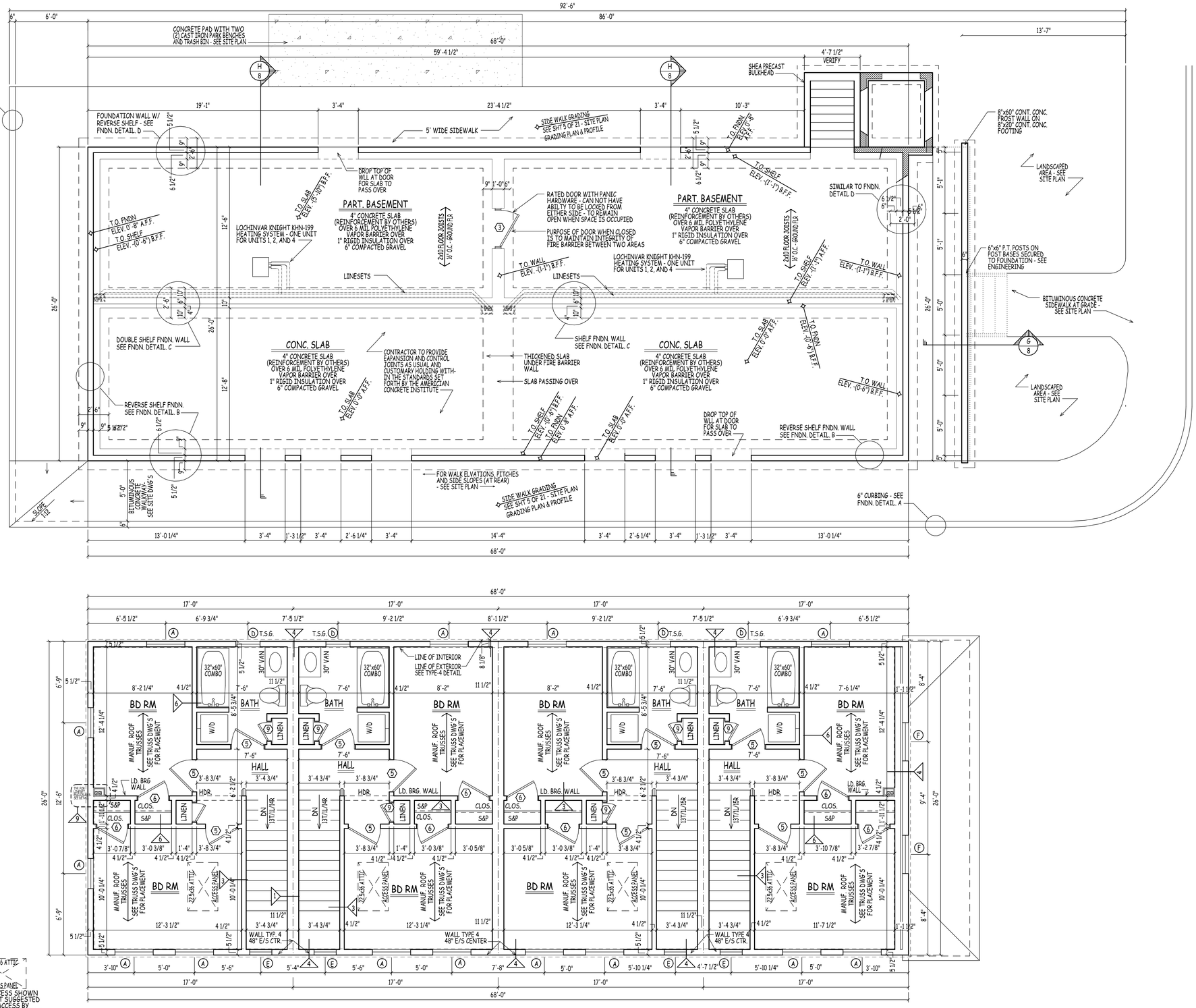
IBC INTERNATIONAL BUILDING CODE
IPC INTERNATIONAL PLUMBING CODE
IMC INTERNATIONAL MECHANICAL CODE
IECC INTERNATIONAL ENERGY CONSERVATION CODE
IRC INTERNATIONAL RESIDENTIAL CODE
IEBC INTERNATIONAL EXISTING BUILDING CODE
ICC INTERNATIONAL CODE COUNCIL
NFPA NATIONAL FIRE PROTECTION ASSOCIATION
NEC NATIONAL ELECTRICAL CODE

FABRICATION AND MATERIALS SUPPLIED AND INSTALLED SHALL CONFORM TO ALL APPLICABLE LOCAL, STATE & NATIONAL BUILDING CODES, INCLUDING ENERGY CODES, LIFE SAFETY CODES, AND WHERE APPLICABLE THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT.

ALL ENGINEERED STEEL/WOOD BEAMS TO BE CHECKED AND VERIFIED FOR LOCATION AND SPAN PRIOR TO START OF CONSTRUCTION BY CONTRACTOR AND OR BEAM MANUFACTURER (TYPICAL)

THE CONTRACTOR IS TO ENSURE WINDOWS MEET PREVAILING BUILDING AND LIFESAFETY CODES FOR MINIMUM EGRESS CLEAR OPENING HEIGHT, WIDTH, AND AREA - THE CONTRACTOR WILL ADJUST WINDOW SCHEDULE ACCORDINGLY.

ENERGY EFFICIENCY NOTE:
COMPLIANCE SHALL BE DEMONSTRATED BY EITHER MEETING THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE 2015



PLANS DESIGNED TO THE 2015 INTERNATIONAL BUILDING CODE.

EGRESS NOTE:
AT LEAST ONE WINDOW PER SLEEPING ROOM TO MEET MINIMUM LOCAL, STATE AND NATIONAL REQUIREMENTS OF NET CLEAR OPENING WIDTH, HEIGHT, AREA AND SILL HEIGHT FOR EGRESS. (SEC. 1030 IBC 2015) IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72" ABOVE FINISHED GRADE OR SURFACE BELOW AND THE TOP OF THE SILL IS LOCATED LESS THAN 36" ABOVE THE FINISHED FLOOR, WINDOWS TO COMPLY WITH SECTION 1015.8 OF THE 2015 I.B.C.

703.7 2015 IBC MARKING AND IDENTIFICATION

AT FIRE BARRIERS, HORIZONTAL BARRIERS, SMOKE BARRIERS AND FIRE PARTITIONS REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS IT IS REQUIRED TO PERMANENTLY MARK WITH SIGNS OR STENCILING USING 3" LETTERING IN 3/8" STROKE OF CONTRASTING COLOR THE SUGGESTED WORDING: "FIRE AND OR SMOKE BARRIER - PROTECT ALL OPENINGS" OR OTHER WORDING

22.5x36 ATTIC ACCESS PANEL

ATTIC ACCESS SHOWN EACH UNIT SUGGESTED LIMITED ACCESS BY D.H.A. AND D.F.D. - FINAL PANEL DESIGN/CHOICE BY OWNER

SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERROR, OMISSION AND/OR OVERSIGHT, WE ARE ONLY HUMAN AND THEREFORE FAIL OCCASIONALLY. ACCEPTANCE OF THESE PLANS IS TO THOROUGHLY REVIEW THEM FOR CORRECTNESS AND TO NOTIFY US OF ANY ERRORS, OMISSIONS AND/OR OVERSIGHTS. ACCEPTANCE OF THESE PLANS ASSUMES ALL RESPONSIBILITY FOR THEM AND WILL RELIEVE US OF ANY RESPONSIBILITY. WE RECOMMEND HIRING A LICENSED PROFESSIONAL TO ASSIST IN THE REVIEW.

FSM DRAWINGS
271 LOWELL ST. STE 501 MANCHESTER NH
O:603.339.3660 FAX:208 DIRECT:603.315.8583

VORBACH ARCHITECTURE

ADDRESS:
58 MANCHESTER ST
MANCHESTER, NH
VORBACHARCHITECTURE@GMAIL.COM
TEL: 603-386-7708

PROJECT: 48 Whittier St.Dover NH

PREPARED FOR: DOVER HOUSING AUTHORITY

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

REVISIONS

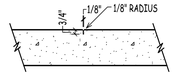
NO.	DATE	REVISION
3	6/14/21	50% PLAN REVIEW
4	7/7/21	PERMIT SET FOR REVIEW
5	8/1/21	TAC COMMENTS
6	9/8/31	85% REVIEW

4

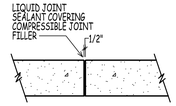
SEE SITE PLAN SHEET C-101 FOR
CURB DTL. W/ BITUMOUS CONCRETE

FOUNDATION DETAIL (A)

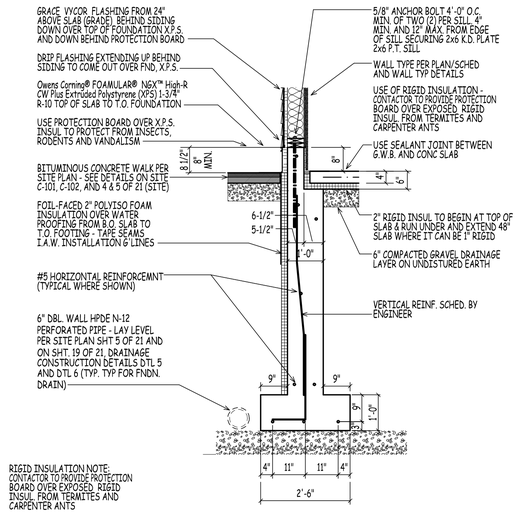
SCALE: 1" = 1'-0"



CONTROL JOINT (N.T.S.)

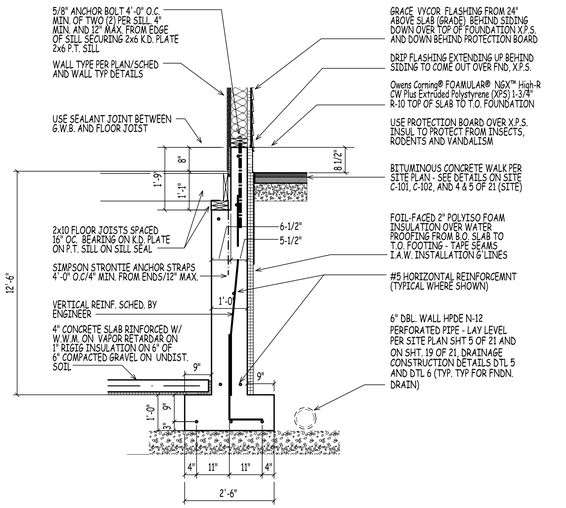


EXPANSION JOINT (N.T.S.)



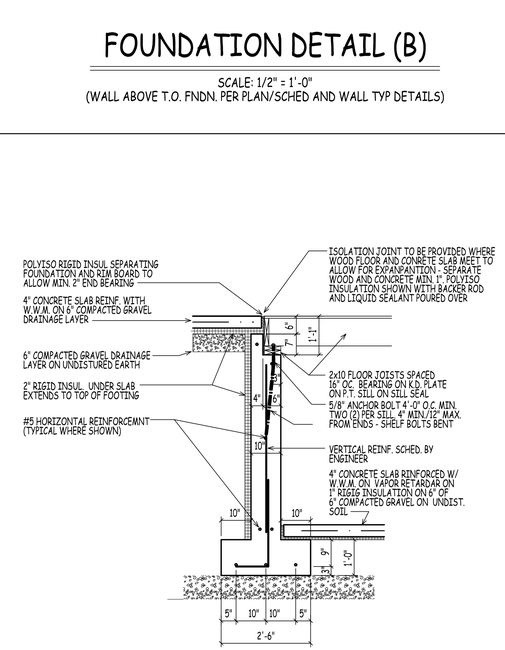
FOUNDATION DETAIL (B)

SCALE: 1/2" = 1'-0"
(WALL ABOVE T.O. FNDN. PER PLAN/SCHED AND WALL TYP DETAILS)



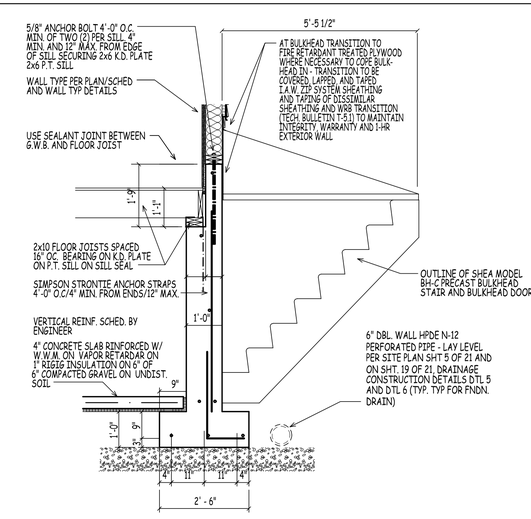
FOUNDATION DETAIL (D)

SCALE: 1/2" = 1'-0"
(WALL ABOVE T.O. FNDN. PER PLAN/SCHED AND WALL TYP DETAILS)



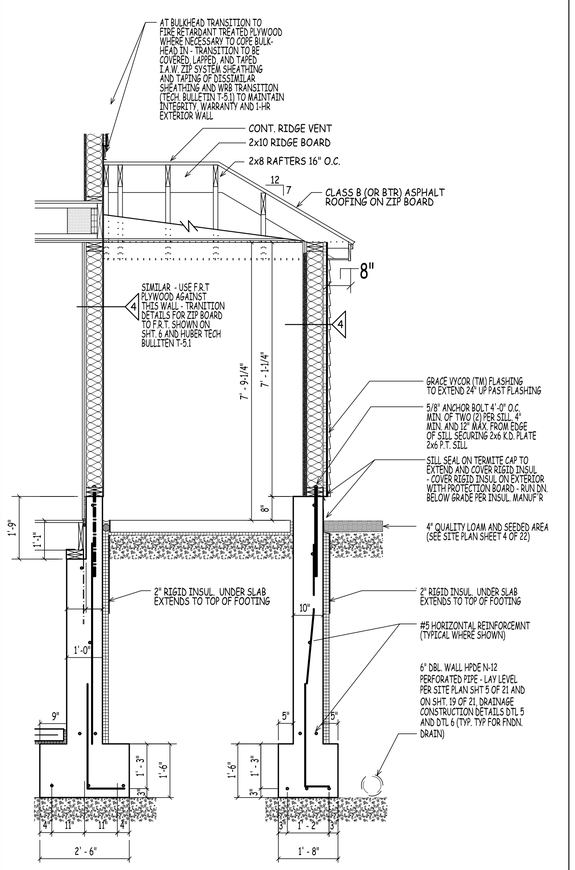
FOUNDATION DETAIL (C)

SCALE: 1/2" = 1'-0"
(WALL ABOVE T.O. FNDN. PER PLAN/SCHED AND WALL TYP DETAILS)



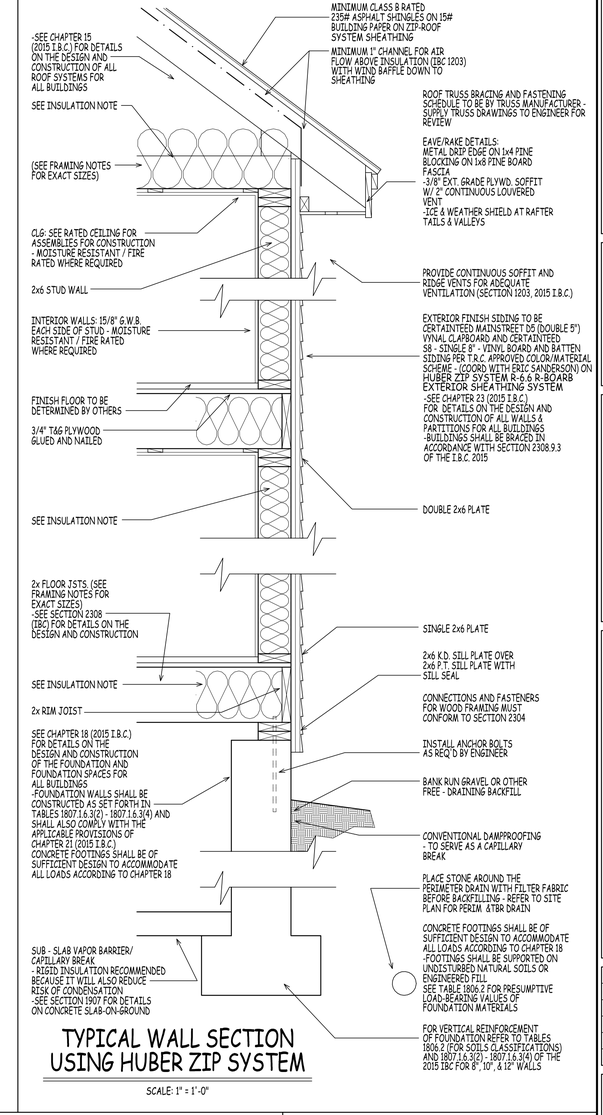
FOUNDATION DTL. D (SIM.) AT BULKHEAD

SCALE: 1/2" = 1'-0"
(WALL ABOVE T.O. FNDN. PER PLAN/SCHED AND WALL TYP DETAILS)



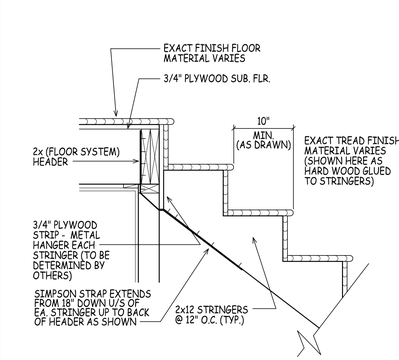
SPRINKLER ROOM CROSS SECTION

SCALE: 1/2" = 1'-0"



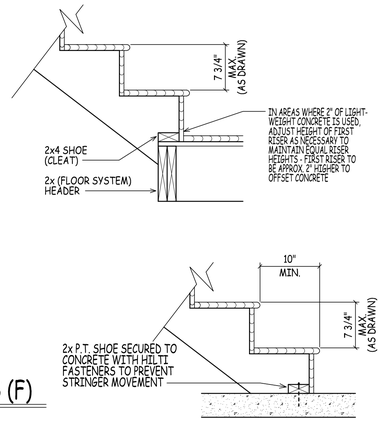
TYPICAL WALL SECTION USING HUBER ZIP SYSTEM

SCALE: 1" = 1'-0"

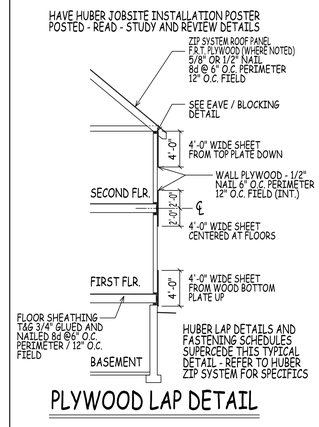


STAIR DETAILS (F)

SCALE: 1" = 1'-0"



HAVE HUBER JOBSITE INSTALLATION POSTER POSTED - READ - STUDY AND REVIEW DETAILS



PLYWOOD LAP DETAIL

SCALE: 1/8" = 1'-0"

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERRORS, OMISSIONS AND OVERSIGHTS, WE ARE ONLY HUMAN AND THEREFORE FEEL IT NECESSARY TO CLARIFY OUR CONTRACTUAL RELATIONSHIP WITH YOU IN REGARD TO CONSTRUCTION USING THESE PLANS TO THOROUGHLY REVIEW THEM FOR ACCURACY AND COMPLETENESS. ANY ERRORS, OMISSIONS OR OVERSIGHTS DISCOVERED AFTER CONSTRUCTION HAS BEGUN WILL BE CHARGED AT OUR STANDARD HOURLY RATES. WE ASSUME ALL RESPONSIBILITY FOR THOSE ITEMS NOT BROUGHT TO OUR ATTENTION BY THE CONTRACTOR OR OTHERS WHO HAVE REVIEWED THESE PLANS TO ASSIST IN THE REVIEW.

FSM DRAWINGS
271 LOWELL ST. STE 500 MANCHESTER NH
(603) 836-3660 FAX (603) 836-3688 DIRECT (603) 315-8188

VORBACH ARCHITECTURE
ADDRESS:
58 MANCHESTER ST
MERRIMACK, NH 03054
VORBACHARCHITECTURE@GMAIL.COM
TEL: (603) 886-7738

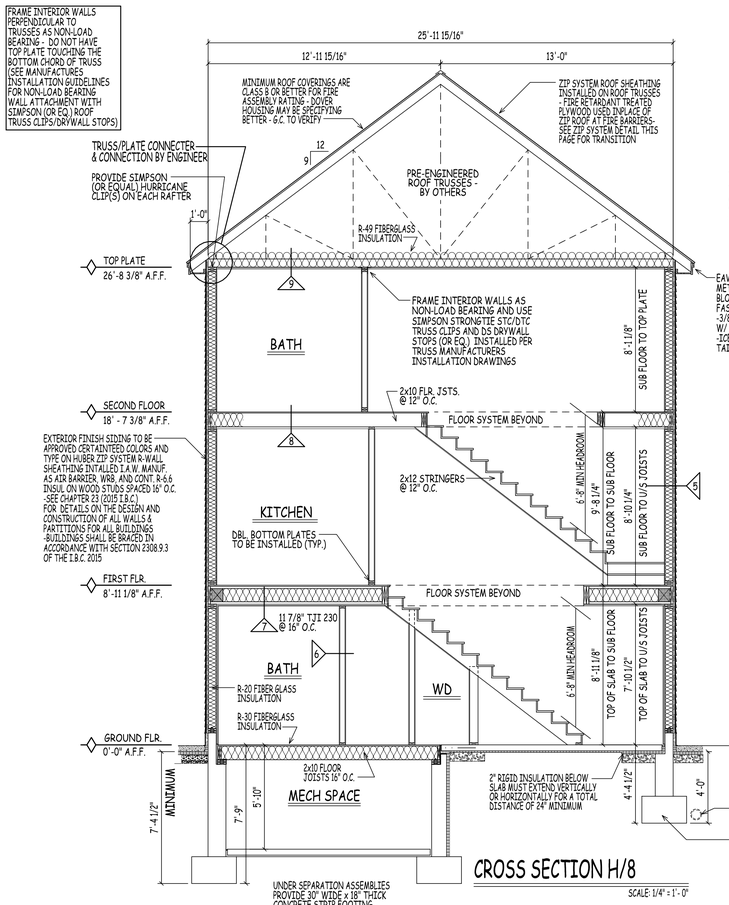
PROJECT: 48 Whittier St.Dover NH
PREPARED FOR: DOVER HOUSING AUTHORITY

REVISIONS		
NO.	DATE	REVISION
3	6/14/21	90% PLAN REVIEW
4	7/7/21	PERMIT SET FOR REVIEW
5	8/1/21	TRC COMMENTS
6	9/8/31	95% REVIEW

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

5

FRAME INTERIOR WALLS PERPENDICULAR TO TRUSSES AS NON-LOAD BEARING - DO NOT HAVE TOP PLATE TOUCHING THE BOTTOM CHORD OF TRUSS (SEE MANUFACTURES INSTALLATION GUIDELINES FOR NON-LOAD BEARING WALL ATTACHMENT WITH SIMPSON (OR EQ.) ROOF TRUSS CLIPS/DRYWALL STOPS)



UNDER SEPARATION ASSEMBLIES PROVIDE 30" WIDE x 18" THICK CONCRETE STRIP FOOTING UNDER POINT LOADS AND LOAD BEARING WALLS AS REQUIRED

CROSS SECTION H/8

SCALE: 1/4" = 1'-0"

7 1 HOUR FLOOR / CEILING ASSEMBLY GA FILE NO. FC 5011 (PROPRIETARY*)

WOOD I-JOISTS, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS FIBER BATT OR LOOSE FILL INSULATION, GYPSUM WALLBOARD

BASE LAYER 1/2" PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO RESILIENT FURRING CHANNELS 24" O.C. (16" O.C. WHEN INSULATION IS USED) WITH 1" TYPE S DRYWALL SCREWS 16" O.C. GYPSUM BOARD END JOINTS LOCATED MIDWAY BETWEEN CONTINUOUS CHANNELS AND ATTACHED WITH SCREWS 8" TO ADDITIONAL PIECES OF CHANNEL 60" LONG LOCATED 3" BACK ON EITHER SIDE OF END JOINT. RESILIENT CHANNELS APPLIED AT RIGHT ANGLES TO MINIMUM 10" DEEP WOOD I JOISTS SPACED A MAXIMUM OF 19" O.C. WITH 11/4" TYPE S DRYWALL SCREWS. FACE LAYER 1/2" PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO RESILIENT FURRING CHANNELS 15/8" TYPE S DRYWALL SCREWS 8" O.C. AND 11/2" TYPE G SCREWS 8" O.C. AT THE BUTT JOINTS LOCTAED MID SPAN BETWEEN THE RESILIENT CHANNELS. GLASS FIBER INSULATION SECURED TO SUBFLOOR OR LOOSE FILL INSULATION APPLIED DIRECTLY OVER GYPSUM BOARD. WOOD I JOISTS SUPPORTING 19/32" WOOD STRUCTURAL PANEL SUBFLOOR APPLIED AT RIGHT ANGLES TO JOISTS WITH CONSTRUCTION ADHESIVE AND 6D RING SHANK NAILS 12" O.C. MINIMUM 1/2" PROPRIETARY GYPSUM FLOOR TOPPING APPLIED OVER SUBFLOOR. STC RATED WITH I JOISTS SPACED 24" O.C., 31/2" GLASS FIBER INSULATION IN JOIST SPACES, 3/4" PROPRIETARY GYPSUM FLOOR TOPPING POURED OVER 1/4" PROPRIETARY SOUND REDUCTION MAT, AND WITH FINISH FLOORING OF SHEET VINYL, ENGINEERED WOOD LAMINATE, AND CERAMIC TILE (STC 64 WHEN SHEET VINYL OR ENGINEERED WOOD LAMINATE IS APPLIED TO FLOOR. STC 66 WHEN TESTED WITH CERAMIC TILE APPLIED TO FLOOR.)

PROPRIETARY GYPSUM COMPONENTS
UNITED STATES GYPSUM COMPANY - 1/2" SHEETROCK® BRAND FIRECODE® C CORE GYPSUM PANELS
- LEVELROCK® BRAND FLOOR UNDERLAYMENT

APPROX. CEILING WEIGHT: 3 PSF

FIRE TEST: UL R1319, 09NK04589, 2-4-05; UL R1319, 09NK09496, 3-31-05; UL DESIGN L570

SOUND TEST: RAL 07O3-05, 4-22-03; RAL 07O3-07, 4-29-03; RAL 07O3-09, 6-18-03

IIC & TEST: (58 SHEET VINYL), RAL 07O3-06, 4-22-03; (62 ENGINEERED WOOD LAMINATE) RAL 07O3-08, 4-29-03; (54 CERAMIC TILE) RAL 07O3-10, 6-18-03

NOTE ON USE OF "GA" (GYPSUM ASSOCIATION) RATED ASSEMBLIES SHOWN HEREIN:

©2018 BY THE GYPSUM ASSOCIATION. GYPSUM ASSOCIATION, 962 WAYNE AVE. SUITE 620, SILVER SPRING MD. 20910 WWW.GYPSUM.ORG USED WITH LIMITED PERMISSION GRANTED DESIGN PROFESSIONALS TO SELECTIVELY REPRODUCE INDIVUAL DESIGN SYSTEMS IN THE ROUTINE COURSE OF THEIR DESIGN WORK FOR INCLUSION ON PLANS AND SPECIFICATIONS OF SPECIFIC PROJECTS

3 1 HOUR WALL ASSEMBLY GA FILE NO. WP 3605

UL R1319-4, -6, 6-17-52; UL R2717-39, 1-20-66; UL R3501-52, 3-15-66; UL DESIGN U305

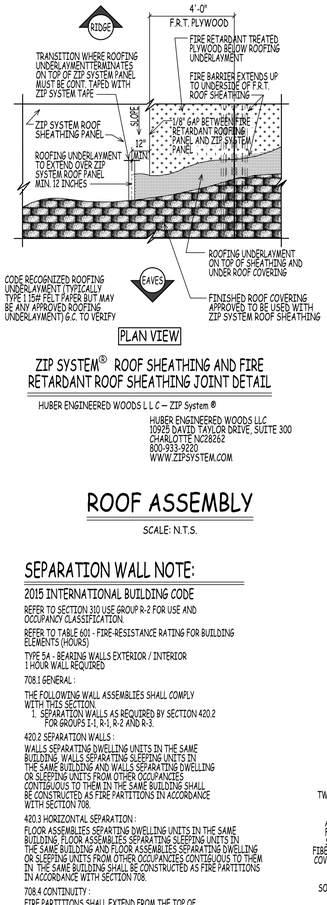
ONE LAYER 5/8" TYPE-X GYPSUM WALLBOARD APPLIED PARALLEL OR AT RIGHT TO EACH SIDE OF 2x WALL STUDS 16" O.C. WITH 6d COATED NAILS, 17/8" LONG, 0.0915" SHANK, 1/4" HEADS, 7" O.C. JOINTS STAGGERED 16" ON OPPOSITE SIDES.

6 INTERIOR WALL

5/8" GYP. BD. ON EACH SIDE OF 2x4 OR 2x6 WOOD STUDS

INTERIOR WALL TYPES

SCALE: 1" = 1'-0"



PLAN VIEW

ZIP SYSTEM® ROOF SHEATHING AND FIRE RETARDANT ROOF SHEATHING JOINT DETAIL

HUBER ENGINEERED WOODS L L C – ZIP System ®

HUBER ENGINEERED WOODS LLC
10925 DAVID TAYLOR DRIVE, SUITE 300
CHARLOTTE NC28262
800-933-9220
WWW.ZIPSYSTEM.COM

ROOF ASSEMBLY

SCALE: N.T.S.

SEPARATION WALL NOTE:

2015 INTERNATIONAL BUILDING CODE

REFER TO SECTION 310 USE GROUP R-2 FOR USE AND OCCUPANCY CLASSIFICATION.

REFER TO TABLE 601 - FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS (HOURS)

TYPE 5A - BEARING WALLS EXTERIOR / INTERIOR
1 HOUR WALL REQUIRED

708.1 GENERAL :

THE FOLLOWING WALL ASSEMBLIES SHALL COMPLY WITH THIS SECTION.
1. SEPARATION WALLS AS REQUIRED BY SECTION 420.2 FOR GROUPS I-1, R-1, R-2 AND R-3.

420.2 SEPARATION WALLS :
WALLS SEPARATING DWELLING UNITS IN THE SAME BUILDING, WALLS SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND, WALLS SEPARATING DWELLING OR SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH SECTION 708.

420.3 HORIZONTAL SEPARATION :
FLOOR ASSEMBLIES SEPARTING DWELLING UNITS IN THE SAME BUILDING, FLOOR ASSEMBLIES SEPARATING SLEEPING UNITS IN THE SAME BUILDING AND FLOOR ASSEMBLIES SEPARATING DWELLING OR SLEEPING UNITS FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN THE SAME BUILDING SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH SECTION 708.

708.4 CONTINUITY :
FIRE PARTITIONS SHALL EXTEND FROM THE TOP OF THE FOUNDATION OR FLOOR/CEILING ASSEMBLY BELOW TO THE UNDERSIDE OF THE FLOOR OR ROOF SHEATHING, SLAB OR DECK ABOVE OR TO THE FIRE-RESISTANCE-RATED FLOOR / CEILING OR ROOF / CEILING ASSEMBLY ABOVE, AND SHALL BE SECURELY ATTACHED THERETO. IN COMBUSTIBLE CONSTRUCTION WHERE THE FIRE PARTITIONS ARE NOT REQUIRED TO BE CONTINUOUS TO THE SHEATHING, DECK OR SLAB, AND THE SPACE BETWEEN THE CEILING AND THE SHEATHING, DECK OR SLAB ABOVE SHALL BE FIREBLOCKED OR DRAFTSTOPPED IN ACCORDANCE WITH SECTIONS 718.2 AND 718.3 AT THE PARTITION LINE. THE SUPPORTING CONSTRUCTION SHALL BE PROTECTED TO AFFORD THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL SUPPORTED, EXCEPT FOR WALLS SEPARATING TENANT SPACES IN COVERED MALL BUILDINGS, WALLS SEPARATING DWELLING UNITS, WALLS SEPARATING SLEEPING UNITS AND CORRIDOR WALLS, IN BUILDINGS OF TYPE IIB, IIIB, AND VB CONSTRUCTION

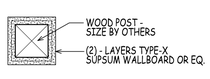
EXCEPTIONS:
5. ATTIC FIREBLOCKING OR DRAFTSTOPPING IS NOT REQUIRED AT THE PARTITION LINE IN GROUP R-2 BUILDINGS THAT DO NOT EXCEED FOUR STORIES ABOVE GRADE PLANE, PROVIDED THE ATTIC SPACE IS SUBDIVIDED BY DRAFTSTOPPING INTO AREAS NOT EXCEEDING 3,000 SQUARE FEET OR ABOVE EVERY TWO DWELLING UNITS, WHICHEVER IS SMALLER.

SECTION 705 EXTERIOR WALLS

705.2 PROJECTIONS
TBL. 705.2 MINIMUM DISTANCE OF PROJECTION (FROM SEPARATION DISTANCE)

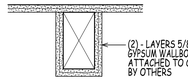
705.5 FIRE-RESISTANCE RATINGS
REFER TO TABLES 601 AND 602, FOR FIRE SEPARATION DISTANE GREATER THAN 10'. RATING FOR EXPOSURE FROM INSIDE LESS THAN 10'. RATE FROM BOTH SIDES

705.8 OPENING; ALLOWANCE, PROTECTION AND SEPARATION



TYPICAL WOOD COLUMN WRAP DETAIL "N"

SCALE : 2" = 1'-0"



WRAPPED BEAM DETAIL "P"

SCALE : 2" = 1'-0"

1 HOUR RATING COLUMN/BEAM PROTECTION

THERE IS NO WIDELY ACCEPTED METHOD OF CALCULATING THE FIRE-RESISTANCE OF AN INDIVIDUAL STRUCTURAL WOOD COLUMN OR BEAM PROTECTED WITH GYPSUM PANELS APPLIED TO ITS EXPOSED SURFACES. IN GENERAL, FIRE RESISTANCE OF THE PROTECTED COLUMN OR BEAM IS ESTIMATED BY ADDING 30 MINUTES PER LAYER OF TYPE-X GYPSUM PANELS.

GYPSUM ASSOCIATION - FIRE RESISTANCE AND SOUND CONTROL DESIGN MANUAL - 22nd EDITION, GA-600-2018

8 1 HOUR FLOOR / CEILING ASSEMBLY GA FILE NO. FC 5507 - PROPRIETARY

WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS

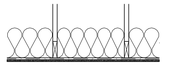
ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO RESILIENT FURRING CHANNELS 12" O.C. WITH 1" TYPE S DRYWALL SCREWS 8" O.C. GYPSUM BOARD END JOINTS LOCATED MIDWAY BETWEEN CONTINUOUS CHANNELS AND ATTACHED TO ADDITIONAL PIECES OF CHANNEL 72" LONG WITH SCREWS 8" O.C. RESILIENT FURRING CHANNELS APPLIED AT RIGHT ANGLES TO 2 X 10 WOOD JOISTS 24" O.C. WITH 11/4" TYPE S DRYWALL SCREWS. 31/2" GLASS OR MINERAL FIBER INSULATION LOOSE-LAID ON RESILIENT CHANNELS. WOOD JOISTS SUPPORTING 3/4" NOMINAL INTERIOR PLYWOOD WITH EXTERIOR GLUE T & G SUBFLOOR APPLIED AT RIGHT ANGLES TO JOISTS WITH JOINTS STAGGERED. UNDERSIDE OF T & G JOINTS COVERED BETWEEN JOIST SPACES WITH 6" X 22 1/2" X 5/8" TYPE X GYPSUM WALLBOARD BATTENS ATTACHED TO FLOORING WITH 16 GAGE X 11/8" LESS X 1/2" CROWN STAPLES SPACED 7" O.C. ALONG EACH EDGE

PROPRIETARY GYPSUM BOARD
CERTAINTEED GYPSUM INC. - 5/8" PROROC® TYPE C GYPSUM PANELS

APPROX. CEILING WEIGHT: 3 PSF
FIRE TEST: UL R1587, 08NK13220, 7-30-08, UL DESIGN L513

FLOOR/CEILING PROTECTION

SCALE: N.T.S.



9 1 HOUR ROOF / CEILING ASSEMBLY GA FILE NO. RC 2608 (PROPRIETARY*)

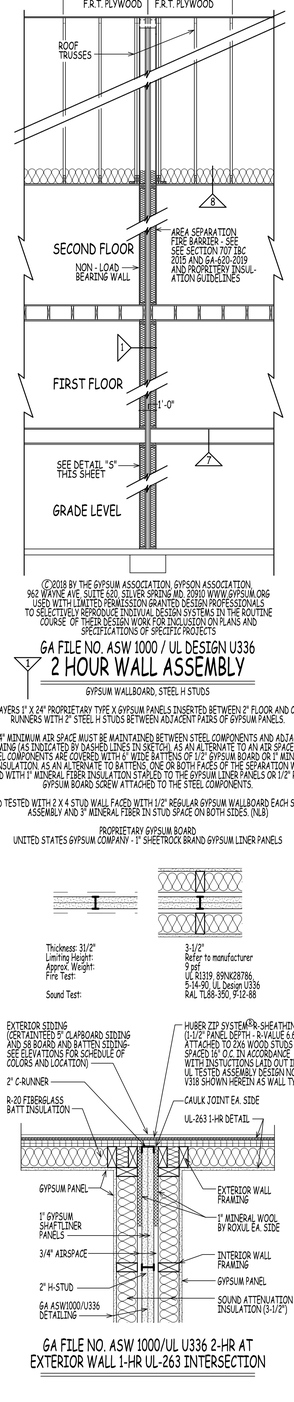
WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS OR MINERAL FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD

ONE LAYER 5/8" PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO RESILIENT FURRING CHANNELS 16" O.C. (12" O.C. WHEN INSULATION IS DRAPED OVER CHANNELS) WITH 1" TYPE S DRYWALL SCREWS 12" O.C. (9/8" O.C. WHEN INSULATION IS DRAPED OVER CHANNELS). GYPSUM BOARD END JOINTS ATTACHED WITH SCREWS 8" O.C. TO ADDITIONAL PIECES OF CHANNEL 60" LONG LOCATED 3" BACK ON EITHER SIDE OF END JOINT. RESILIENT CHANNELS APPLIED AT RIGHT ANGLES TO BOTTOM CHORD OF PITCHED WOOD TRUSSES 24" O.C. WITH 11/4" TYPE S OR W SCREWS. OPTIONAL GLASS FIBER OR MINERAL FIBER BATT INSULATION SECURED TO WOOD STRUCTURAL PANELS OR APPLIED DIRECTLY OVER GYPSUM BOARD. TRUSSES SUPPORTING 23/32" WOOD STRUCTURAL PANELS APPLIED AT RIGHT ANGLES TO TRUSSES WITH EITHER 6D RING SHANK NAILS OR STAPLES HAVING EQUAL OR GREATER WITHDRAWAL AND LATERAL RESISTANCE STRENGTH. OPTIONAL CEILING DAMPER (REFER TO MANUFACTURER FOR INFORMATION ON THE TYPE OF DAMPER).

PROPRIETARY GYPSUM BOARD
PABCO GYPSUM - 5/8" FLAMECURB® TYPE C

APPROX. CEILING WEIGHT: 3 PSF
FIRE TEST: UL R7094, 07NK11121, 11-27-07, UL DESIGN P549; WFCI 07002C/07048, 8-3-07

1 HOUR SEPARATION ASSEMBLY TO BE CONSTRUCTED FROM TOP OF FOUNDATION WALL TO UNDERSIDE OF PLYWOOD ROOF SHEATHING - USE FIRE-RETARDANT TREATED PLYWOOD TO 4'-0" (MIN) EACH SIDE OF ASSEMBLY - CONSULT USG CORP AREA SEPARATION WALL SYSTEMS SPECIFICATIONS FOR FURTHER DESCRIPTION OF ASSEMBLY CONSTRUCTION DETAILS



©2018 BY THE GYPSUM ASSOCIATION. GYPSON ASSOCIATION. 962 WAYNE AVE. SUITE 620, SILVER SPRING MD. 20910 WWW.GYPSUM.ORG USED WITH LIMITED PERMISSION GRANTED DESIGN PROFESSIONALS TO SELECTIVELY REPRODUCE INDIVUAL DESIGN SYSTEMS IN THE ROUTINE COURSE OF THEIR DESIGN WORK FOR INCLUSION ON PLANS AND SPECIFICATIONS OF SPECIFIC PROJECTS

GA FILE NO. ASW 1000 / UL DESIGN U336 2 HOUR WALL ASSEMBLY

GYPSUM WALLBOARD, STEEL H STUDS

TWO LAYERS 1" X 24" PROPRIETARY TYPE X GYPSUM PANELS INSERTED BETWEEN 2" FLOOR AND CEILING RUNNERS WITH 2" STEEL H STUDS BETWEEN ADJACENT PAIRS OF GYPSUM PANELS.

A 3/4" MINIMUM AIR SPACE MUST BE MAINTAINED BETWEEN STEEL COMPONENTS AND ADJACENT FRAMING (AS INDICATED BY DASHED LINES IN SKETCH), AS AN ALTERNATE TO AN AIR SPACE, THE STEEL COMPONENTS ARE COVERED WITH 6" WIDE BATTENS OF 1/2" GYPSUM BOARD OR 1" MINERAL FIBER INSULATION. AS AN ALTERNATE TO BATTENS, ONE OR BOTH FACES OF THE SEPARATION WALL ARE COVERED WITH 1" MINERAL FIBER INSULATION STAPLED TO THE GYPSUM LINER PANELS OR 1/2" REGULAR GYPSUM BOARD SCREW ATTACHED TO THE STEEL COMPONENTS.

SOUND TESTED WITH 2 X 4 STUD WALL FACED WITH 1/2" REGULAR GYPSUM WALLBOARD EACH SIDE OF ASSEMBLY AND 3" MINERAL FIBER IN STUD SPACE ON BOTH SIDES. (NLB)

PROPRIETARY GYPSUM BOARD
UNITED STATES GYPSUM COMPANY - 1" SHEETROCK BRAND GYPSUM LINER PANELS

Thickness: 31/2"
Limiting Height:
Approx. Weight:
Fire Test:

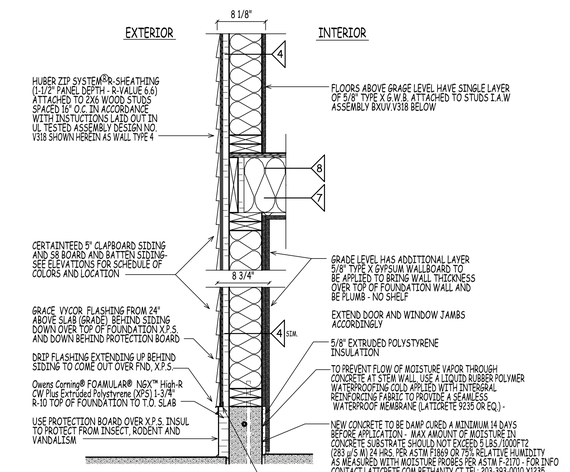
Sound Test:

3-1/2"
Refer to manufacturer
9 psf
UL R1319, 89NK28786
5-14-90, UL Design U336
RAL TL88-350, 9-12-88

GA FILE NO. ASW 1000/UL U336 2-HR AT EXTERIOR WALL 1-HR UL-263 INTERSECTION

FIRE BARRIER

SCALE: N.T.S.



4 1 HOUR EXTERIOR WALL ASSEMBLY BXUV.V318 FIRE-RESISTANCE RATINGS - ANSI/UL 263

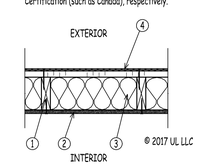
*Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2017 UL LLC"

BXUV.V318
Fire-resistance Ratings - ANSI/UL 263

See General Information for Fire-resistance Ratings - ANSI/UL 263
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. V318

June 13, 2017
(Exposed to Fire on Interior Face Only)
Bearing Wall Rating — 1 Hr.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method).
For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Wood Studs — Nom 2 by 6 in., spaced 16 in. OC.

2. Gypsum Board* — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. U501, U512 or U305. Nom. 5/8 in. thick (min) 4 ft. wide bearing the UL Classification Marking for Fire Resistance applied vertically. Attached to studs with 6d cement coated nails spaced 7 in. OC at the edges and in the field. Vertical joints located over studs. Joints covered with paper and joint compound. Nail heads covered with joint compound.
ACADIA DRYWALL SUPPLIES LTD (View Classification) — CKNX.R25370
AMERICAN GYPSUM CO (View Classification) — CKNX.R14196
BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374
CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660
GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717
GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R6937
LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094
PANEL REY S A (View Classification) — CKNX.R21796
SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262
THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517
UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319
USG MEXICO S A DE C V (View Classification) — CKNX.R16089

3. Fiber, Sprayed* — Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

4. Building Units* — Consisting of 7/16-in. thick PS-2 rated oriented strand board (OSB) as cover board bonded to rigid 1/2 in. to 2 in. thick polyisocyanurate insulation, installed vertically with vertical joints located over studs. Fastened to studs with min. 10d galvanized nails, 2-7/8 in. long, spaced 6 in. OC at edges and 12 in. OC in the field. Length of nails to be such that they engage with studs minimum 1-3/8 in.

HUBER ENGINEERED WOODS L L C – ZIP System ® R Sheathing

© 2017 UL LLC

EXTERIOR WALL

SCALE: N.T.S.

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERRORS, OMISSIONS AND/OR OVERSIGHT, IT IS UNREALISTIC TO EXPECT HUMAN AND THEREFORE FAR FROM PERFECT. ATTENTION IS DRAWN TO THE FACT THAT IT IS THE RESPONSIBILITY OF THE CONTRACTOR USING THESE PLANS TO THOROUGHLY REVIEW THEM FOR DIMENSIONS, MATERIALS, AND CONSTRUCTION METHODS PRIOR TO CONSTRUCTION. FSM DRAWINGS ASSUMES ALL RESPONSIBILITY FOR THE PLANS AS WELL AS ERRORS AND OMISSIONS ONCE CONSTRUCTION HAS BEGUN. CONTRACTORS ARE ENCOURAGED TO CONTACT FSM DRAWINGS AT ANY TIME DURING THE PROCESS TO ASSIST IN THE REVIEW.

FSM DRAWINGS

VORBACH ARCHITECTURE

ADDRESS:
58 MANCHESTER ST
MANCHESTER, NH
03104
VORBACHARCHITECTURE@GMAIL.COM
TEL: 603-386-7738

PROJECT: 48 Whittier St.Dover NH

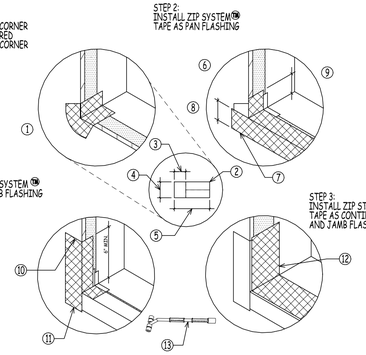
PREPARED FOR: DOVER HOUSING AUTHORITY

REVISIONS			
NO.	DATE	REVISION	
4	7/7/21	PERMIT SET FOR REVIEW	
5	8/3/21	TRC COMMENTS	
6	9/8/21	85% REVIEW	
7	3/9/22	RELEASED FOR PERMIT	

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

6

THESE DETAILS REFENCE ONLY - OBTAIN FULL SCALE
ZIP SYSTEM® INSTALATION DRAWINGS AND DETAILS
FROM HUBER SUPPLIER OR ZIPSYSTEM.COM
QUESTIONS - CALL 800.933.9220 EXT. 2716



HUBER ENGINEERED WOODS L L C – ZIP System ® R Sheathing

© 2018 UL LLC

10-29-2018

ZIP SYSTEM® R-SHEATHING AT TYPICAL FLANGED WINDOW WITH FLASHING TAPE

RW-1.2

NOT TO SCALE

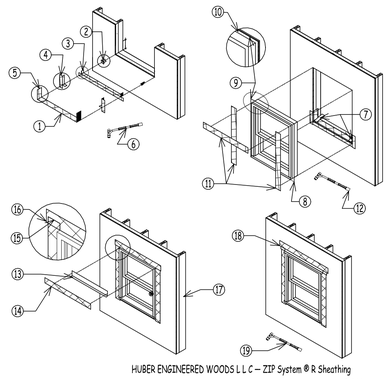
THESE CONSTRUCTION DETAILS ARE INCLUDED AS REFERENCE ONLY - CONTRACTOR IS TO OBTAIN INSTALATION DETAIL RW - 1.2 AT FULL SCALE FROM HUBER SUPPLIER OR HUBER WEBSITE AT ZIPSYTEMS.COM - QUESTIONS? CALL ZIP SYSTEMS AT 800.933.9220 EXT. 2716

ZIPSystem SHEATHING & TAPE

HUBER ENGINEERED WOODS

1. ZIP SYSTEM TAPE® OR CODE APPROVED FLASHING TAPE (MEETING AAMA 711 ORAC148)
2. THE CORNER PATCH IS A RECTANGULAR STRIP OF ZIP SYSTEM® TAPE PLACE INTO THE CORNER OF THE WINDOW OPENING AND FOLDED ONTO THE FACE OF ZIP SYSTEM SHEATHING
3. 1-1/2 INCH MINIMUM
4. 3 INCH MINIMUM
5. 3-3/4 INCH MINIMUM
6. END DAM - TURN UP AT JAMB A MINIMUM 2 INCHES
7. EXTEND SILL END PIECE PAST JAMB A MINIMUM 2 INCHES
8. 2 INCH MINIMUM
9. 2 INCH MINIMUM
10. JAMB SIDE FLANGE - TURN TURN DOWN OVER SILL AND EXTEND PAST SILL END PIECE
11. TURN JAMB SIDE FLASHING DOWN OVER SILL AND EXTEND PAST SILL END PIECE
12. INSTALL ZIP STSYEM® TAPE AS PAN FLASHING, TURN UP JAMB A MINIMUM OF 6 INCHES.
13. ZIP SYSTEM® ROLLER. ROLL ALL TAPE

THESE DETAILS REFENCE ONLY - OBTAIN FULL SCALE
ZIP SYSTEM® INSTALATION DRAWINGS AND DETAILS
FROM HUBER SUPPLIER OR ZIPSYSTEM.COM
QUESTIONS - CALL 800.933.9220 EXT. 2716



HUBER ENGINEERED WOODS L L C – ZIP System ® R Sheathing

© 2018 UL LLC

10-29-2018

ZIP SYSTEM® R-SHEATHING AT TYPICAL FLANGED WINDOW WITH FLASHING TAPE

RW-1.2

NOT TO SCALE

THESE CONSTRUCTION DETAILS ARE INCLUDED ON THIS SET AS BACK UP - CONTRACTOR IS TO OBTAIN INSTALATION DETAIL RW - 1.2 AT FULL SCALE FROM HUBER SUPPLIER OR HUBER WEBSITE AT ZIPSYTEMS.COM - QUESTIONS? CALL ZIP SYSTEMS AT 800.933.9220 EXT. 2716

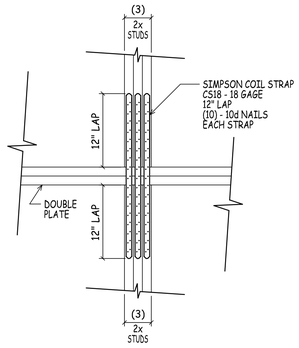
ZIPSystem SHEATHING & TAPE

HUBER ENGINEERED WOODS

1. ZIP SYSTEM TAPE® OR CODE APPROVED FLASHING TAPE (MEETING AAMA 711 ORAC148)
2. INSTALL ZIP SYSTEM® TAPE CORNER PATCH CENTERED ON OUTSIDE CORNER
3. INSTALL ZIP SYSTEM® TAPE AS PAN FLASHING
4. INSTALL ZIP SYSTEM® TAPE AT THE JAMBS
5. PLACE A CONTINUOUS PIECE OF ZIP SYSTEM® TAPE ON THE PAN AND JAMBS

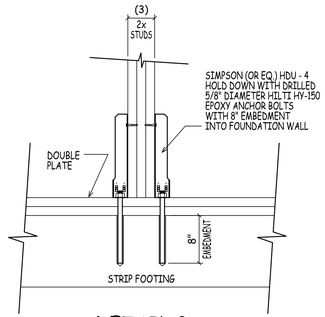
   FOR MORE DETAIL AND INSTRUCTIONS ON INSTALLING THE SILL PAN USING ZIP SYSTEM® TAPE FOR STEPS 2-5, PLEASE SEE PAGE 2
6. ZIP SYSTEM® ROLLER. ROLL ALL TAPE.
7. SHIMS AS REQUIRED BY THE WINDOW MANUFACTURER
9. INSTALL GAPS IN THE SEALANT PER WINDOW MANUFACTURER
10. APPLY A CONTINUOUS BEAD OF SEALANT* AROUND THE BACK SIDE (INTERIOR SURFACE) OF THE WINDOW MOUNTING FLANGE
11. ZIP SYSYTEM® TAPE OR ADHESIVE BACKED FLASHING MEETING (MEETING AAMA 711 OR AC148)
12. ZIP SYSTEM® ROLLER. ROLL ALL TAPE.
13. CODE APPROVE FLASHING (ONLY REQUIRED WHEN BUILT IN DRAINAGE CHANNELS ARE NOT A PART OF THE WINDOW DESIGN
14. ZIP SYSYTEM® TAPE OR ADHESIVE BACKED FLASHING MEETING (MEETING AAMA 711 OR AC148)
15. ENSURE JAMB FLASHING DOES NOT EXTEND MORE THAN HALF WAY THROUGH THE HEAD FLASHING
16. EXTEND THE HEAD FLASHING BEYOND THE JAMB FLASHING A MINIMUM OF 1-INCH
17. FROM THE INTERIOR, INTSALL A LOWPRESSURE POLYURETHANE BETWEEN THE WINDOW AND THE ROUGH OPENING TO MAINTAIN CONTINUITY OF THE AIR BARRIER IF GAP IS TOO NARROW TO USE A COMPATIBLE CAULK SEALANT *
18. EXTEND THE HEAD FLASHING BEYOND THE JAMB FLASHING A MINIMUM OF 1-INCH
19. ZIP SYSTEM® ROLLER. ROLL ALL TAPE.

    * WHEN APPLYING A SEALANT TO ZIP SYSTEM TAPE USE A BUTYL, 100% SILICONE OR POLYURETHANE SEALANT.



DETAIL 1

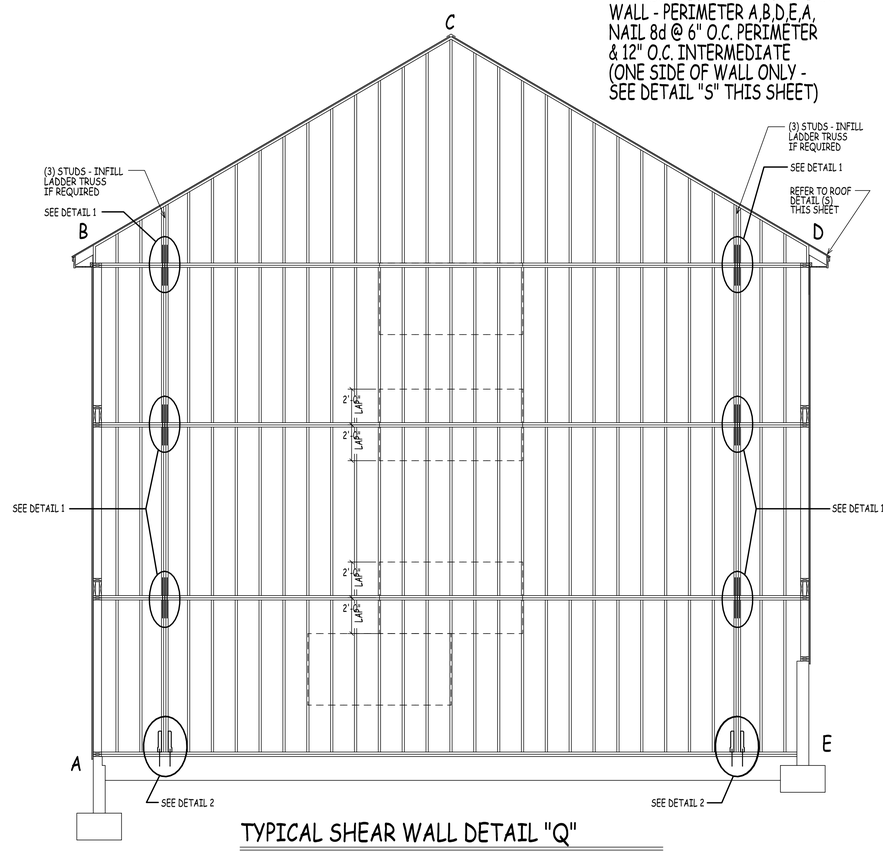
SCALE: 1" = 1'-0"



DETAIL 2

SCALE: 1" = 1'-0"

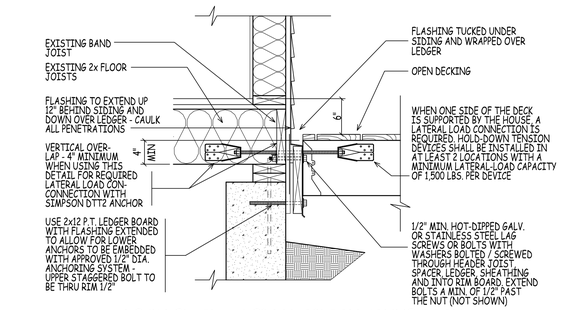
1/2" BLOCKED PLYWOOD SHEAR WALL - PERIMETER A,B,D,E,A, NAIL 8d @ 6" O.C. PERIMETER & 12" O.C. INTERMEDIATE (ONE SIDE OF WALL ONLY - SEE DETAIL "S" THIS SHEET)



TYPICAL SHEAR WALL DETAIL "Q"

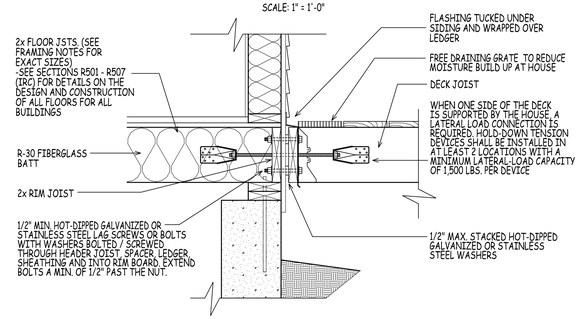
TYPICAL OF BUILDINGS 1 & 2

SCALE: 1/4" = 1'-0"



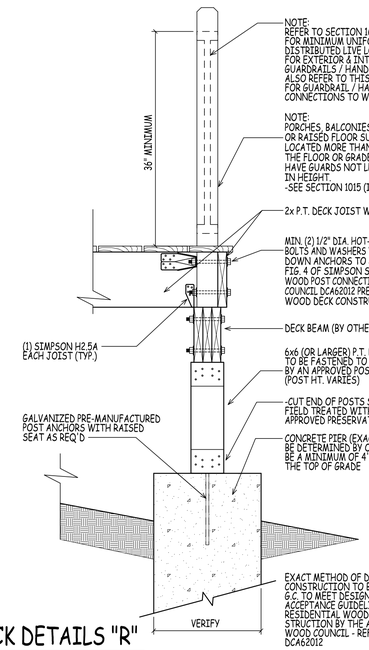
DECK DETAIL - STEP DN. OPTION CONNECTION

SCALE: 1" = 1'-0"



DECK DETAIL - NO STEP OPTION CONNECTION

SCALE: 1" = 1'-0"



TYPICAL DECK DETAILS "R"

SCALE: 1" = 1'-0"

ADMISSION OF ERROR, OMISSION AND/OR OVERSIGHT:
WHILE IT IS OUR INTENT TO DELIVER OUR SERVICES FREE OF ERROR, OMISSION AND/OR OVERSIGHT, WE ARE ALL HUMAN AND THEREFORE FAR FROM INFALLIBLE. ACCORDINGLY, WE REQUIRE THAT YOU REVIEW OUR WORK PRODUCT AND REPORT TO US ANY ERRORS, OMISSIONS AND/OR OVERSIGHTS YOU DISCOVER IN OUR DRAWINGS, SPECIFICATIONS, AND/OR CONSTRUCTION USING THESE PLANS TO THOROUGHLY REVIEW THEM FOR CORRECTNESS AND COMPLETENESS BEFORE YOU RELY UPON THEM FOR CONSTRUCTION, FABRICATION, OR ANY OTHER PURPOSE. YOU ASSUME ALL RESPONSIBILITY FOR THOSE ACTIVITIES AND WILL INDEMNIFY US FOR ANY CLAIMS ARISING FROM YOUR FAILURE TO DISCOVER AND REPORT ERRORS, OMISSIONS AND/OR OVERSIGHTS TO US SO THAT WE HAVE AN OPPORTUNITY TO ASSIST IN THE REVIEW.

FSM DRAWINGS
271 LOWELL ST. STE 200 MANCHESTER NH
O (603) 836-3660 FAX (508) 747-1200 DIRECT (603) 315-8188

VORBACH ARCHITECTURE
ADDRESS:
58 MANCHESTER ST
MANCHESTER, NH
VORBACHARCHITECTURE@GMAIL.COM
TEL: (603) 386-7338

PROJECT: 48 Whittier St.Dover NH

PREPARED FOR: DOVER HOUSING AUTHORITY

DRAWN BY:	PD
CHECKED BY:	AD
DATE DRAWN:	3/20/21
DATE ISSUED:	2/14/20
SCALE:	1/4" = 1'-0"
JOB NO.:	FSM21-007MF

REVISIONS

NO.	DATE	REVISION
3	6/14/21	90% PLAN REVIEW
4	7/7/21	PERMIT SET FOR REVIEW
5	8/1/21	TRC COMMENTS
6	9/8/31	95% REVIEW

7

RESIDENTIAL TDR SITE PLAN
FOR
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

TABLE OF CONTENTS:

SHEET 1 ~ NEIGHBORHOOD PLAN
SHEET 2 ~ EXISTING CONDITIONS PLAN
SHEET 3 ~ SITE SPECIFIC SOILS MAP (SSSM)
SHEET 4 ~ SITE PLAN
SHEET 5 ~ GRADING PLAN & PROFILE
SHEET 6 ~ P101-RAIN GARDEN PLAN
SHEET 7 ~ P102-STORMTECH CHAMBER DETAILS
SHEET 8 ~ EROSION & SEDIMENT CONTROL PLAN
SHEET 9 ~ UTILITY PLAN
SHEET 10 ~ LANDSCAPING PLAN
SHEET 11 ~ LIGHTING PLAN
SHEET 12 ~ CROSS SECTIONS
SHEET 13 ~ SIGHT DISTANCE PLAN
SHEET 14 ~ FIRE TRUCK TURNING TEMPLATE
SHEET 15 ~ E101-SEDIMENT & EROSION DETAILS
SHEET 16 ~ E102-SEDIMENT & EROSION DETAILS
SHEET 17 ~ C101-CONSTRUCTION DETAILS
SHEET 18 ~ C102-CONSTRUCTION DETAILS
SHEET 19 ~ C103-CONSTRUCTION DETAILS
SHEET 20 ~ D101-DRAINAGE CONSTRUCTION DETAILS
SHEET 21 ~ U101-UTILITY CONSTRUCTION DETAILS
SHEET 22 ~ L101-LANDSCAPING CONSTRUCTION DETAILS

NOTE:

BERRY SURVEYING & ENGINEERING HAS PREPARED AN INSPECTION & MAINTENANCE MANUAL AS PART OF THIS PROJECTS DOCUMENTATION. ALL USERS ARE BOUND TO THIS DOCUMENT AS PART OF THE APPROVAL OF THE PLANNING BOARD. COPIES OF THE YEARLY INSPECTIONS ARE TO BE DELIVERED TO THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT.

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

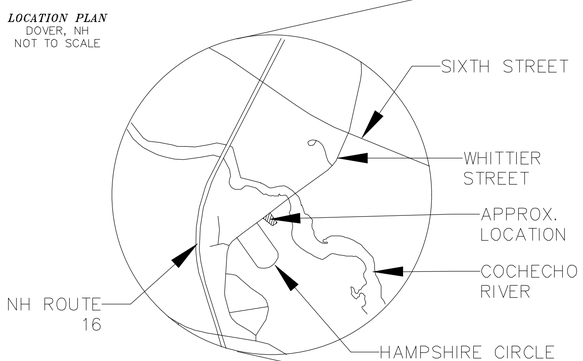
SURVEYOR OF RECORD: KENNETH A. BERRY, PE, LLS
CPSWQ, CPESC, CESSWI
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825
(603) 332-2863

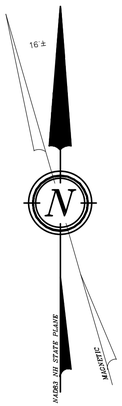
ENGINEER OF RECORD: KENNETH A. BERRY, PE, LLS
CPSWQ, CPESC, CESSWI
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825
(603) 332-2863

WETLAND SCIENTIST: DEIDRA BENJAMIN, CWS
100 LEAVITT ROAD
PITTSFIELD, NH 03263
(603)-496-3307

SOIL SCIENTIST: JOHN P. HAYES, III CWS, CSS
7 LIMESTONE WAY
NORTH HAMPTON, NH 03862
(603)-205-4396

LOCATION PLAN
DOVER, NH
NOT TO SCALE





VICINITY SKETCH
DOVER, NH
SCALE: 1" = 200' ±



REQUIRED PERMITS:

1.) NHDES SHORELAND PERMIT

GENERAL PLAN SET NOTES:

1.) 11x17" PLANS ARE HALF THE PUBLISHED SCALE.

2.) ALL PLANS ARE CONSIDERED TO BE NOT FOR CONSTRUCTION UNLESS THEY CONTAIN THE APPROVAL STAMP OF THE CITY OF DOVER.

WHETHER OR NOT OTHERWISE EXPRESSLY RECITED ON THIS SITE PLAN, THE SITE PLAN APPROVAL GRANTED IS CONDITIONED ON FAITHFUL AND DILIGENT ADHERENCE BY THE OWNER/DEVELOPER OF ALL TERMS, CONDITIONS, PROVISIONS AND SPECIFICATIONS OF THE CITY OF DOVER LAND SITE PLAN REGULATIONS AS AMENDED OR AS MAY LATER BE AMENDED, IN EFFECT ON THE DATE OF APPROVAL, UNLESS OR EXCEPT INSOFAR AS EXPRESSLY WAIVED, IN ANY PARTICULAR, BELOW. NON – ADHERENCE MAY RESULT IN A REVOCATION OF APPROVAL. ANY VARIATION FROM THE APPROVED PLAN WILL REQUIRE A RESUBMISSION FOR SITE PLAN APPROVAL.

OWNER'S SIGNATURE DATE

APPROVED DOVER

STATE OF NEW HAMPSHIRE – LICENSED LAND SURVEYOR – NO. 805 – KENNETH A. BERRY – SIGNATURE

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

RESIDENTIAL TDR SITE PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE – KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER

ABBREVIATION LEGEND:

BITUM.	BITUMINOUS
E.O.P.	EDGE OF PAVEMENT
V.G.C.	VERTICAL GRANITE CURB
E.S.H.W.T	ESTIMATED SEASONAL HIGH WATER TABLE
TYP.	TYPICAL
U.G.E.	UNDER GROUND ELECTRIC / UTILITY
U.D.	UNDER DRAIN
C.O.	CLEAN OUT
INV.	INVERT
ELEV.	ELEVATION
F.E.S.	FLARED END SECTION
HDPE	HIGH DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
C.L.D.I.	CONCRETE LINED DUCTILE IRON
RECB	ROLLED EROSION CONTROL BLANKET
F.G.	FINISHED GRADE
E.G.	EXISTING GRADE
E.T.W.	EDGE OF TRAVELED WAY
T.B.R.	TO BE REMOVED
PL	PROPERTY LINE
EL	EASEMENT LINE
R.O.W.	RIGHT OF WAY
CL	CENTER LINE
CF	CUBIC FEET
P.C.	POINT OF CURVATURE
P.T.	POINT OF TANGENCY
P.V.C.	POINT OF VERTICAL CURVATURE
P.V.I.	POINT OF VERTICAL INTERSECTION
P.V.T.	POINT OF VERTICAL TANGENCY
EX.	EXISTING
PROP.	PROPOSED
R&R	REMOVE AND REPLACE
STA.	STATION
'/,	FOOT / FOOT

{ } SSL ( ) ~ {SIZE} SINGLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ } DSL ( ) ~ {SIZE} DOUBLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ } SSB ( ) ~ {SIZE} SINGLE SOLID W/ BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ } SBL ( ) ~ {SIZE} SINGLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ } DBL ( ) ~ {SIZE} DOUBLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)

EXISTING LEGEND:

- IRON BOUND ~FND~
- IRON PIPE ~FND~
- DRILL HOLE ~FND~
- STEEL STAKE ~FND~
- UTILITY POLE / GUY WIRE
- SINGLE POST SIGN
- CURB STOP
- GATE VALVE
- FIRE HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- DRAIN MANHOLE
- EXISTING SPOT ELEVATION
- 250' NHDES SHORELAND ZONE
- ZONE LINE
- BUILDING SETBACK LINE
- PERIMETER BOUNDARY
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN LINE
- EXISTING GAS LINE
- OVERHEAD UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- NRCS SOIL DELINEATION
- SOIL TYPE
- TEST PIT

PROPOSED LEGEND:

- UTILITY POLE
- LIGHT TYPE "A" MOUNTED ON BUILDING
- DRAIN MANHOLE W/STRUCTURE
- SEWER MANHOLE W/STRUCTURE
- CATCH BASIN W/STRUCTURE
- SIGNAGE
- CHECK DAM-MATERIAL AS SPECIFIED
- FLOW ARROW
- TEMPORARY BENCHMARK (T.B.M.)
- DETAIL SHEET / DETAIL
- MATCH POINT
- MATCH LINE
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- DRAIN CULVERT W/ FLARED END SECTION (F.E.S.)
- SHOULDER
- CENTER LINE
- BUILDING SETBACK LINE
- TRANSFORMER / J.BOX
- UNDERGROUND UTILITY
- UNDER DRAIN
- SILT FENCE / EROSION MIX BERM
- FILTREXX 8" - 12" SILT SOXX AS SPECIFIED
- ORANGE CONSTRUCTION PERIMETER FENCE
- RIP RAP
- STORMWATER BEST MANAGEMENT PRACTICE
- BERM
- GATE VALVE
- GAS VALVE
- CURB STOP
- HYDRANT
- THRUST BLOCKS
- PROPOSED SPOT ELEVATION
- PROPOSED GAS LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE

GIS SKETCH
DOVER, NH
SCALE: 1" = 200' ±



SIGN ID NUMBER	SIGN SIZE (WIDTH x HEIGHT)	SIGN	TEXT DIMENSIONS	NO. OF SIGNS	BACKGROUND	LEGEND	BORDER	POST SIZE & QUANTITY
R1-1	30"x30"	STOP	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT - FHWA	1	RED	WHITE	WHITE	SQUARE (1)
R7-8	12"x18"	RESERVED PARKING	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT - FHWA	1	WHITE	GREEN W/ WHITE SYMBOL ON BLUE	RED	SQUARE (1)
R7-8a	12"x6"	VAN ACCESSIBLE	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT - FHWA	1	WHITE	GREEN	GREEN	SQUARE (0)
R8-31	12"x18"	NO PARKING FIRE LANE	SEE STANDARD HIGHWAY SIGNS 2004 EDITION PUBLISHED BY USDOT - FHWA	1	WHITE	RED	RED	SQUARE (1)

ABUTTERS WITHIN 200':

N/F 1623 SETTLEMENT DOVER
LIMITED PARTNERSHIP
62 WHITTIER STREET
DOVER, NH 03820
TAX MAP 33, LOT 2
S.C.R.D. BOOK 4536, PAGE 715

N/F GAGNON, JEANNINE & ROBERT
46 WHITTER STREET
DOVER, NH 03820
TAX MAP 33, LOT 1
S.C.R.D. BOOK 3237, PAGE 971

N/F CEDAR RIVER DEVELOPMENT, LLC
35 THIRD STREET
DOVER, NH 03820-3316
TAX MAP E, LOT 66
S.C.R.D. BOOK 3648, PAGE 730

16' ±
N
NADB3 NH STATE PLANE
MAGNETIC

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 805 — KENNETH A. BERRY — SIGNATURE

DOVER PLANNING FILE #P21-37

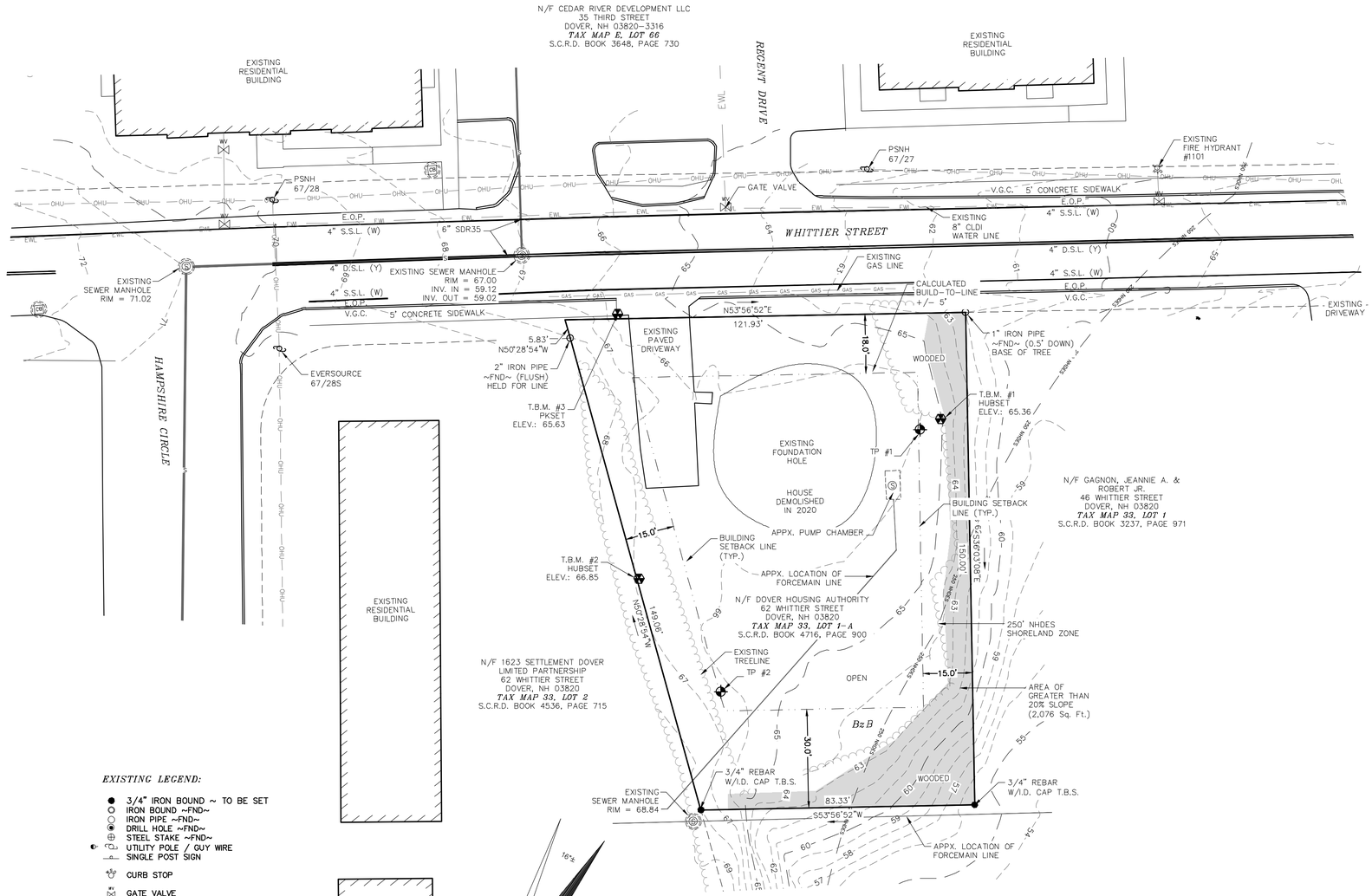
REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

NEIGHBORHOOD PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS SHOWN
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

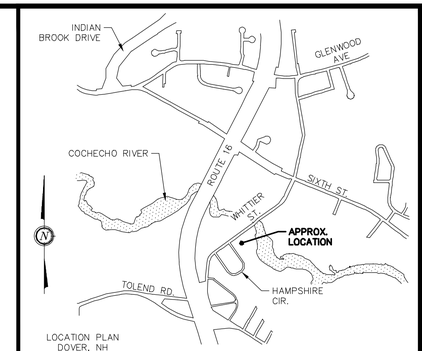
STATE OF NEW HAMPSHIRE — KENNETH A. BERRY No. 12243 LICENSED PROFESSIONAL ENGINEER



SOIL DATA:

BzB ~ BUXTON SILT LOAM, 3 TO 8% SLOPES

NRCS, SEE WEBSOIL



LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1-A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. ZONING: RM-U
   PRINCIPAL BUILDING:
   LOT SIZE: 10,000 Sq. Ft.
   MAX. LOT COVERAGE: 40%
   MINIMUM FRONTAGE: 80 Ft.
   FRONT BUILD-TO ~ +/- 5' (AVG. OF NEIGHBORHOOD)
   SIDE SETBACK: 15 Ft.
   REAR SETBACK: 15 Ft.
   PRINCIPAL BUILDING: 40 Ft. MAX

   ZONING: TRANSFER OF DEVELOPMENT RIGHTS (TDR)
   LOT SIZE: N/A Sq. Ft.
   MAX. LOT COVERAGE: N/A
   MINIMUM FRONTAGE: 40'
   FRONT SETBACK: 20'
   ABUT A STREET SETBACK: 20'
   SIDE SETBACK: 10'
   REAR SETBACK: 30'
   PERIMETER BUFFER: 30'
6. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING BOUNDARIES AND CONDITIONS OF TAX MAP 33, LOT 1-A, LOCATED IN DOVER, N.H., AS OF THE TIME OF SURVEY, DATE: NOVEMBER 2020
7. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE & BELIEF, THIS PARCEL DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF.: FEMA COMMUNITY #330150, MAP #33017C0310E, DATED: SEPTEMBER 30, 2015.
8. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.
9. THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN NOVEMBER OF 2020, WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 77,000.
10. A TOPOGRAPHICAL SURVEY WAS PERFORMED BY THIS OFFICE NOVEMBER OF 2020. TOPOGRAPHY SHOWN IN 1' INTERVALS.
11. EXISTING PAVED IMPERVIOUS: 924.9 SF (6.0%), PRE-EXISTING BUILDING IMPERVIOUS: 1,237.6 SF (8.0%), TOTAL EXISTING IMPERVIOUS: 2162.5 SF (14.0%),
12. NO CEMETERIES OR WETLANDS WERE FOUND ON SITE
13. THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER

PLAN REFERENCES:

1. "PLAN OF LOT, PAUL N. VERRETTE. DOVER. NEW HAMPSHIRE"
   BY: G.L. DAVIS & ASSOCIATES
   DATED: DECEMBER 1970
   NOT RECORDED
2. "LOT LINE ADJUSTMENT PLAN, DOVER HOUSING AUTHORITY, TOLEND ROAD AND WHITTIER STREET, DOVER, NEW HAMPSHIRE, STRAFFORD COUNTY"
   BY: TRITECH ENGINEERING CORPORATION
   DATED: JUNE 19, 2017
   S.C.R.D. PLAN #114-017 THROUGH 114-21
3. "LAND OF DOVER HOUSING AUTHORITY, WHITTIER STREET, DOVER, N.H."
   BY: BERRY SURVEYING & ENGINEERING
   DATED: JUNE 13, 1988 (REV. 5-21-90)
   NOT RECORDED
   FILE NO. DB 1988-71

EXISTING LEGEND:

- 3/4" IRON BOUND ~ TO BE SET
- IRON BOUND ~FND~
- IRON PIPE ~FND~
- DRILL HOLE ~FND~
- STEEL STAKE ~FND~
- UTILITY POLE / GUY WIRE
- SINGLE POST SIGN
- CURB STOP
- GATE VALVE
- FIRE HYDRANT
- CATCH BASIN W/ STRUCTURE
- SEWER MANHOLE W/ STRUCTURE
- E248.60 EXISTING SPOT ELEVATION
- BUILDING SETBACK LINE
- PERIMETER BOUNDARY
- APPROXIMATE ABUTTING PROPERTY LINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING DRAIN LINE
- EXISTING GAS LINE
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- 250' NHDES SHORELAND ZONE
- NRCS SOIL DELINEATION
- HgB SOIL TYPE
- TEST PIT
- TEMPORARY BENCHMARK
- AREA OF GREATER THAN 20% SLOPE

TEST PIT DATA:

TEST PIT #1
0-32 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
32-36 10YR 2/2 VERY DARK BROWN, FINE SANDY LOAM, MASSIVE, FRIABLE
36-40 10YR 4/4 DARK YELLOWISH BROWN, SILT LOAM, MASSIVE, FRIABLE
40-45 2.5Y 5/4 LIGHT OLIVE BROWN, SILT LOAM, BLOCKY, FIRM
45-68 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 40"
RESTRICTIVE LAYER @ 45"
GROUND WATER @ N/A
TERMINATED @ 68"
REFUSAL @ N/A
NOTE: 0-32" IS FILL MATERIAL

TEST PIT #2
0-36 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
36-72 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 36"
RESTRICTIVE LAYER @ 36"
GROUND WATER @ NONE
TERMINATED @ 72"
REFUSAL @ N/A

WETLAND NOTES:

THE SITE WAS EVALUATED FOR WETLANDS BY DEIDRA BENJAMIN IN OCTOBER 2020 UTILIZING THE FOLLOWING STANDARDS: NO WETLANDS WERE FOUND

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE DEIDRA L. BENJAMIN No. 295 CERTIFIED WETLAND SCIENTIST

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

I CERTIFY THAT THIS PLAT EXCEEDS THE MINIMUM REQUIREMENT FOR ACCURACY AND COMPLETENESS OF THE STATE OF N.H. AND OF THE CITY OF DOVER, N.H. – 1:10,000 –

KENNETH A. BERRY LLS 805 DATE

DOVER PLANNING FILE #P21-37

#	REVISION	DATE	DESCRIPTION
1	REVISED PER DOVER TRC COMMENT	7-20-21	

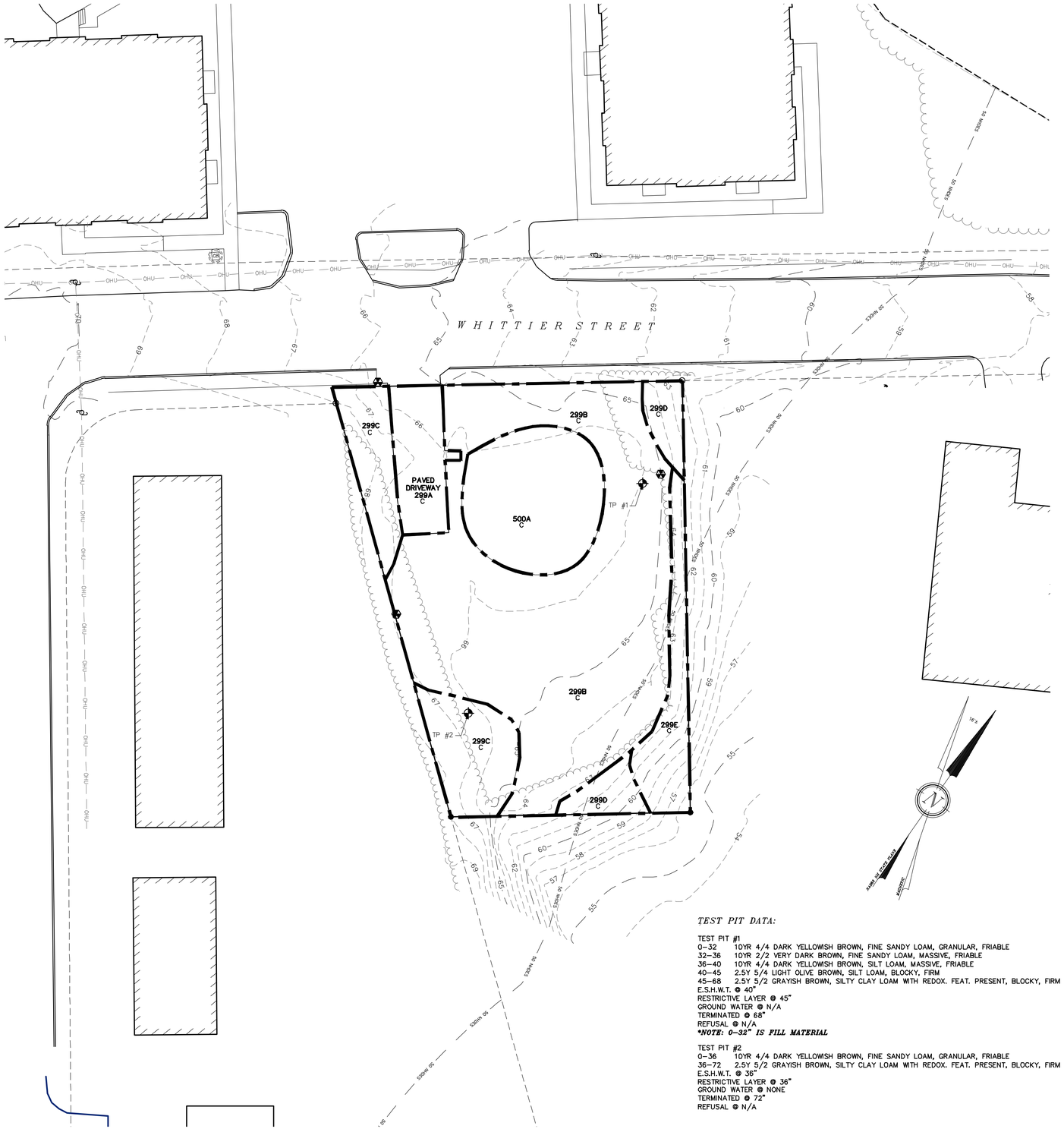
EXISTING CONDITIONS PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

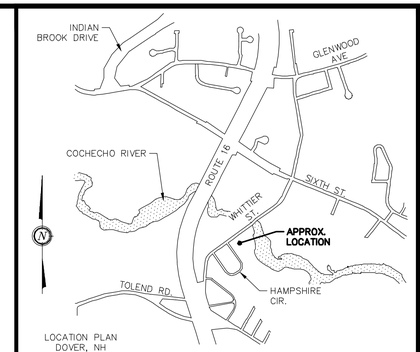
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 805 KENNETH A. BERRY

SIGNATURE





LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1–A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SOILS CONDITIONS OF TAX MAP 33, LOT 1–A, LOCATED IN DOVER, N.H., AS OF THE SOIL SURVEY. SEE REPORT DATED MARCH 2021.
6. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330150, MAP 33017C0310D, DATED: MAY 17, 2005.
7. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS.
8. TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED JULY 2020.

SITE SPECIFIC SOILS LEGEND

SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
#299B	UDORTHENTS (SMOOTHED)	C
#299C	UDORTHENTS (SMOOTHED)	C
#299D	UDORTHENTS (SMOOTHED)	C
#299E	UDORTHENTS (SMOOTHED)	C
#500A	UDORTHENTS (LOAMY)	C

SLOPE: A = 0–3% B = 3–8% C = 8–15% D = 15–25% E = 25–50% F = 50%+

DENOMINATOR: /VPD = VERY POORLY DRAINED /PD = POORLY DRAINED /SWPD = SOMEWHAT POORLY DRAINED /MWD = MODERATELY WELL DRAINED

SOIL DATA:

BzB ~ BUXTON SILT LOAM, 3 TO 8% SLOPES

NRCS, SEE WEBSOIL

TEST PIT DATA:

TEST PIT #1
0–32 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
32–36 10YR 2/2 VERY DARK BROWN, FINE SANDY LOAM, MASSIVE, FRIABLE
36–40 10YR 4/4 DARK YELLOWISH BROWN, SILT LOAM, MASSIVE, FRIABLE
40–45 2.5Y 5/4 LIGHT OLIVE BROWN, SILT LOAM, BLOCKY, FIRM
45–68 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 40"
RESTRICTIVE LAYER @ 45"
GROUND WATER @ N/A
TERMINATED @ 68"
REFUSAL @ N/A
NOTE: 0–32" IS FILL MATERIAL

TEST PIT #2
0–36 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
36–72 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 36"
RESTRICTIVE LAYER @ 36"
GROUND WATER @ NONE
TERMINATED @ 72"
REFUSAL @ N/A

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE
DEIDRA L. BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, CSS #87

STATE OF NEW HAMPSHIRE
JOHN P. HAYES III
No. 087
CERTIFIED SOIL SCIENTIST

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER PLANNING FILE #P21–37

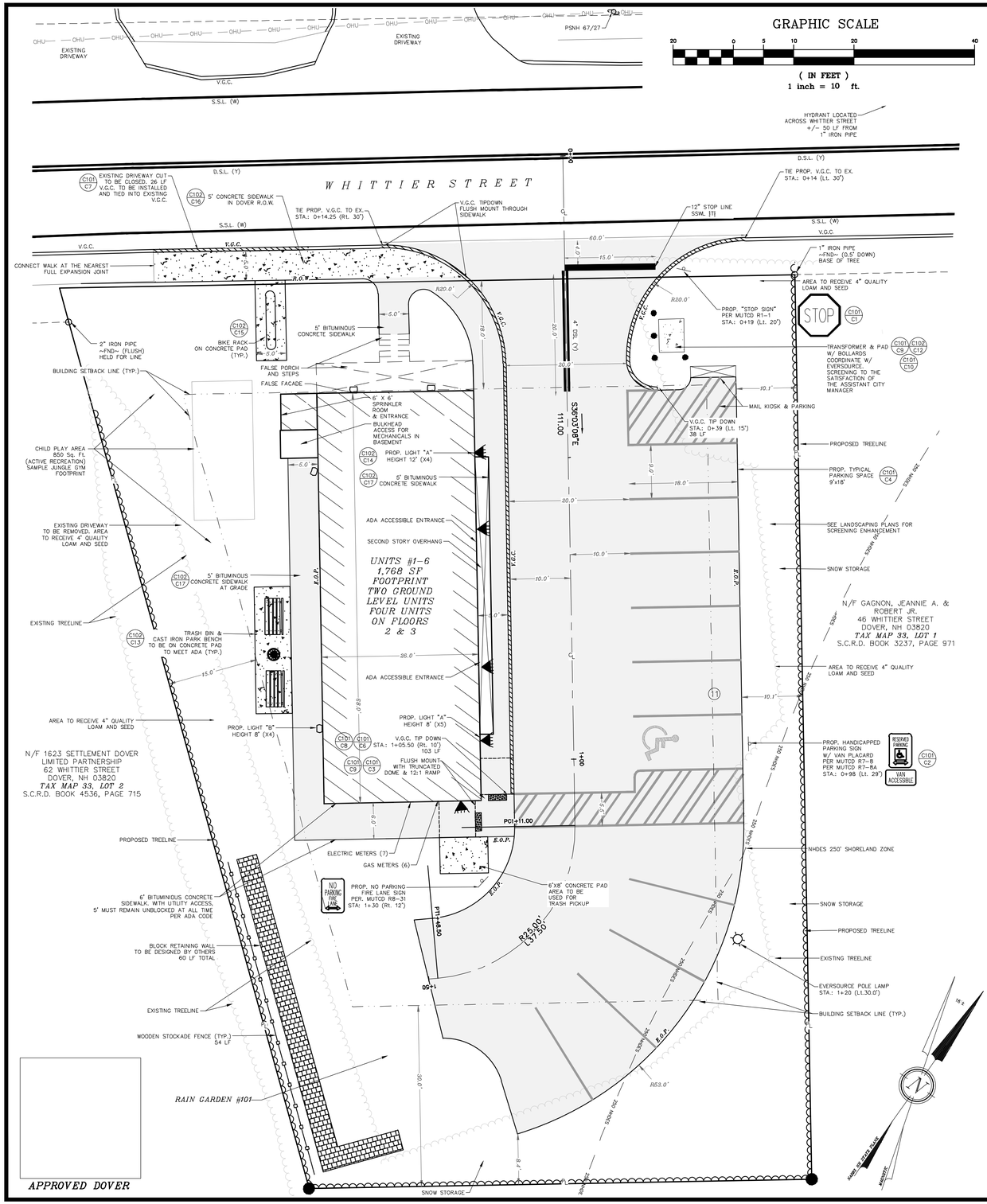
REVISION	DATE	DESCRIPTION
#1	7–20–21	REVISED PER DOVER TRC COMMENT

SITE SPECIFIC SOILS MAP
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14042
LICENSED PROFESSIONAL ENGINEER



NOTES:

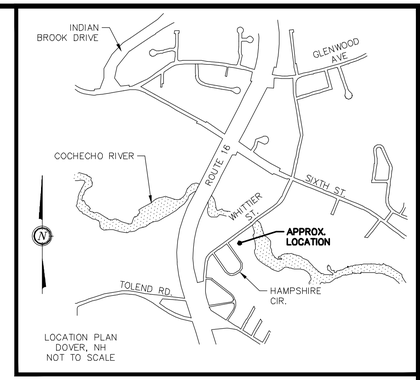
OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1–A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. ZONING: RM–U
   PRINCIPAL BUILDING:
   LOT SIZE: 10,000 Sq. Ft.
   MAX LOT COVERAGE: 40%
   MINIMUM FRONTAGE: 80 Ft.
   FRONT BUILD–TO –- +/– 5' (AVG. OF NEIGHBORHOOD)
   SIDE SETBACK: 15 Ft.
   REAR SETBACK: 15 Ft.
   PRINCIPAL BUILDING: 40 Ft. MAX

   TRANSFER OF DEVELOPMENT RIGHTS (TDR)
   LOT SIZE: N/A Sq. Ft.
   MAX. LOT COVERAGE: N/A
   MINIMUM FRONTAGE: 40'
   FRONT SETBACK: 20'
   ABUT A STREET SETBACK: 20'
   SIDE SETBACK: 10'
   REAR SETBACK: 30'
   PERIMETER BUFFER: 30'

   PROVIDED ZONING
   PRINCIPAL BUILDING:
   LOT SIZE: 15,394 Sq. Ft.
   LOT COVERAGE: 13.6%
   FRONTAGE: 121.93 Ft.
   FRONT BUILD–TO: 18 Ft.
   SIDE SETBACK: 15 Ft.
   REAR SETBACK: 15 Ft.
   PRINCIPAL BUILDING: 36.5 Ft.
6. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE & BELIEF, THIS PARCEL DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF.: FEMA COMMUNITY #330145, MAP #33017C0310E, DATED: SEPTEMBER 30, 2015.
7. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.
8. THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN NOVEMBER OF 2020, WITH AN ERROR OF CLOSURE OF 1 PART IN 77,000.
9. THE INTENT OF THIS PLAN IS TO SHOW THE SITE PLAN ELEMENTS ON TAX MAP 33, LOT 1–A FOR A 6–UNIT RESIDENTIAL BUILDING
10. THE PRE–EXISTING LOT COVERAGE IS 1,238 SQ. FT. (8.0%)
11. AS–BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON A REPRODUCIBLE MYLAR MEDIUM AND IN A DIGITAL DXF FORMAT ON DISK 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.
12. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEMS AS REQUIRED UNDER CHAPTER 81 ARTICLE IV OF THE CODE OF THE CITY OF DOVER AND THE 2015 STATE BUILDING CODES.
13. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIALS AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED.
14. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
15. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER.
16. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
17. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
18. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
19. 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.
20. THE LIMITS OF CONSTRUCTION DISTURBANCE SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO THE COMMENCEMENT OF SITE WORK.
21. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
22. A LETTER OF CREDIT FOR THE COST OF RE–VEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS. COORDINATE WITH CITY OF DOVER, COMMUNITY SERVICES AND ENGINEERING DEPARTMENT.
23. 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.
24. BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING INSPECTOR AT THE TIME OF ISSUANCE OF A BUILDING PERMIT ALONG WITH UNIT NUMBERS.
25. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
    NHDES SHORELAND PERMIT
26. THIS PLAN PROPOSES 15,000 SQ. FT. OF DISTURBANCE.
27. CALL DIG SAFE PRIOR TO BEGINNING WORK (1–888–344–7233)
28. ALL CONSTRUCTION SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. CONSTRUCTION SHALL ALSO CONFORM TO THE CITY OF DOVER POLICIES AND PRACTICES.
29. SEE UTILITY PLAN FOR EXTENTS OF PAVEMENT CONSTRUCTION. CUT AND CAP EXISTING WATER AND SEWER LINE.
30. WRITTEN DIMENSION ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR IS TO CONFIRM ALL ELEVATIONS. CONFLICTS WILL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
31. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE SITE LAYOUT IS COMPLIANT WITH NH RSA 155–A:5.
32. THE PROPOSED USE FOR THE SITE IS A 6 UNIT MULTI–FAMILY STRUCTURE, WITH TWO UNITS ON THE FIRST FLOOR AND 4 TOWNHOUSE STYLE UNITS ABOVE.
33. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD IF
    ADJUSTMENT: NONE
    CONDITIONAL USE PERMITS REQUIRED BY THE PLANNING BOARD: NONE
    WAIVER REQUESTS REQUIRED BY THE PLANNING BOARD: PARKING AISLE WIDTH (22' REQ., 20' PROP.)
34. THE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7AM–6PM, SATURDAY 9 AM–4PM WITH NO SUNDAY HOURS. HOURS OF CONSTRUCTION SHALL BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR.
35. VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
36. 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.
37. FROM GROUND BREAKING THE SITE SHALL REMAIN ACCESSIBLE YEAR ROUND IN ALL WEATHER CONDITIONS.



LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES CONTINUED:

38. WETLANDS WERE SEARCHED FOR BY DEIDRA BENJAMIN, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER 295, IN ACCORDANCE WITH CHAPTER 170–27.1 OF THE ZONING ORDINANCE, IN WINTER OF 2021. NO WETLANDS FOUND ON SITE.
39. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
40. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
41. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL.
42. 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.
43. FIRE DEPARTMENT ACCESS ROAD SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
44. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–24–A AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
45. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
46. FIRST FLOOR UNITS SHALL BE TYPE B ACCESSIBLE UNITS..
47. SNOW STORAGE CALCULATION
    PROPOSED PAVED IMPERVIOUS COVERAGE: 6,088 Sq. Ft.
    PROVIDED SNOW STORAGE AREA: 1,850 Sq. Ft.
    GREATER THAN 6:1 RATIO PROVIDED
48. IMPERVIOUS COVERAGE
    PRE–EXISTING PAVED IMPERVIOUS COVERAGE: 928 Sq. Ft. (6.0%)
    PRE–EXISTING BUILDING IMPERVIOUS COVERAGE: 1,240 Sq. Ft. (8.1%)
    TOTAL PRE–EXISTING IMPERVIOUS COVERAGE: 2,168 Sq. Ft. (14.1%)
    PROPOSED PAVED IMPERVIOUS COVERAGE: 6,088 Sq. Ft. (39.5%)
    PROPOSED BUILDING IMPERVIOUS COVERAGE: 2,090 Sq. Ft. (13.2%)
    TOTAL PROPOSED IMPERVIOUS COVERAGE: 8,178 Sq. Ft. (52.7%)

TDR REQUESTS:
2 UNITS WERE CALCULATED BY RIGHT, 4 UNITS TO BE OBTAINED VIA TDR:
FRONT SETBACK REDUCTION FROM 20' TO 18':
REDUCTION IN 30' PERIMETER BUFFER:

WAIVERS:
PARKING AISLE WIDTH FROM 22' TO 20' (153–15–C):

CONDITIONAL USE PERMITS:
REDUCTION IN 30' PERIMETER BUFFER:
PARKING SPACE REDUCTION FROM 12 TO 11:

PARKING REQUIREMENTS:

CHAPTER 153 PARKING TABLE
- RESIDENTIAL
  - RESIDENTIAL (NON–CBD–G) 1.4 SPACES PER UNIT:
  - VISITOR 0.5 SPACES PER UNIT:
  - 6 UNITS x 1.4 SPACES + 6 UNITS x 0.5 SPACES = 11.4 SPACES
    12 SPACES

TOTAL PROPOSED = 11 SPACES, WAIVER REQUESTED

RECREATION SPACE REQUIREMENTS
PROPOSED NUMBER OF BEDROOMS: 12
OPEN SPACE REQUIREMENT (100 SF PER BEDROOM): 1,200 SF
¼ RECREATION SPACE FOR PASSIVE USE: 600 SF (SATISFIED ON SITE)
¼ RECREATION SPACE FOR ACTIVE USE: 600 SF (SATISFIED ON SITE)
RECREATION FEE NOT REQUIRED

TRANSFER OF DEVELOPMENT RIGHTS (TDR) CALCULATION

USING FOUR FAMILY OR MORE METHOD

LOT SIZE: 15,394 Sq. Ft.

2 UNITS ALLOWED BY RIGHT USING RM–U ZONING

4 ADDITIONAL UNITS REQUESTED VIA TRANSFER OF DEVELOPMENT RIGHTS

6 TOTAL UNITS PROPOSED, ALL CONFORMING TO HUD FAIR MARKET RENT

DOVER PLANNING FILE #P21–37

#	REVISION	DATE	DESCRIPTION
1		7–20–21	REVISED PER DOVER TRC COMMENT

SITE PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 13962
LICENSED PROFESSIONAL ENGINEER

NOTES:

1.) THE INTENT OF THIS PLAN SET IS TO DEMONSTRATE THE GRADING DESIGN FOR SIX RESIDENTIAL UNITS IN ONE BUILDING AT 48 WHITTIER STREET.

2.) OWNER & APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

3.) THE PROJECT PARCEL IS TAX MAP 33, LOT 1–A OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4.) THE PROJECT PARCEL CONTAINS 0.35 ACRES OR 15,394 SQUARE FEET AREA OF LAND.

5.) TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, (S.C.R.D.) BOOK NO. 4716, PAGE NO. 900.

6.) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVE AND BELOW GROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITY CONFLICTS SHOULD BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.

7.) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 1–888–344–7233 AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

8.) SEE DETAILS CONCERNING SITE LAYOUT, DRAINAGE, UTILITY AND SEDIMENT AND EROSION CONTROLS.

9.) SEE EROSION & SEDIMENT CONTROL PLAN FOR INLET PROTECTION AND CONTROLS FOR THE ENTIRE SITE.

10.) ALL DRAINAGE PIPE IS TO BE HDPE N–12 ASTM F2648. (GREEN PIPE) INDIVIDUAL PIPE SIZES ARE SPECIFIED.

11.) ALL ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE DESIGN ENGINEER IS TO BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY. TEMPORARY BENCHMARKS (T.B.M.) ARE TO BE PROVIDED BY THE DESIGN ENGINEER.

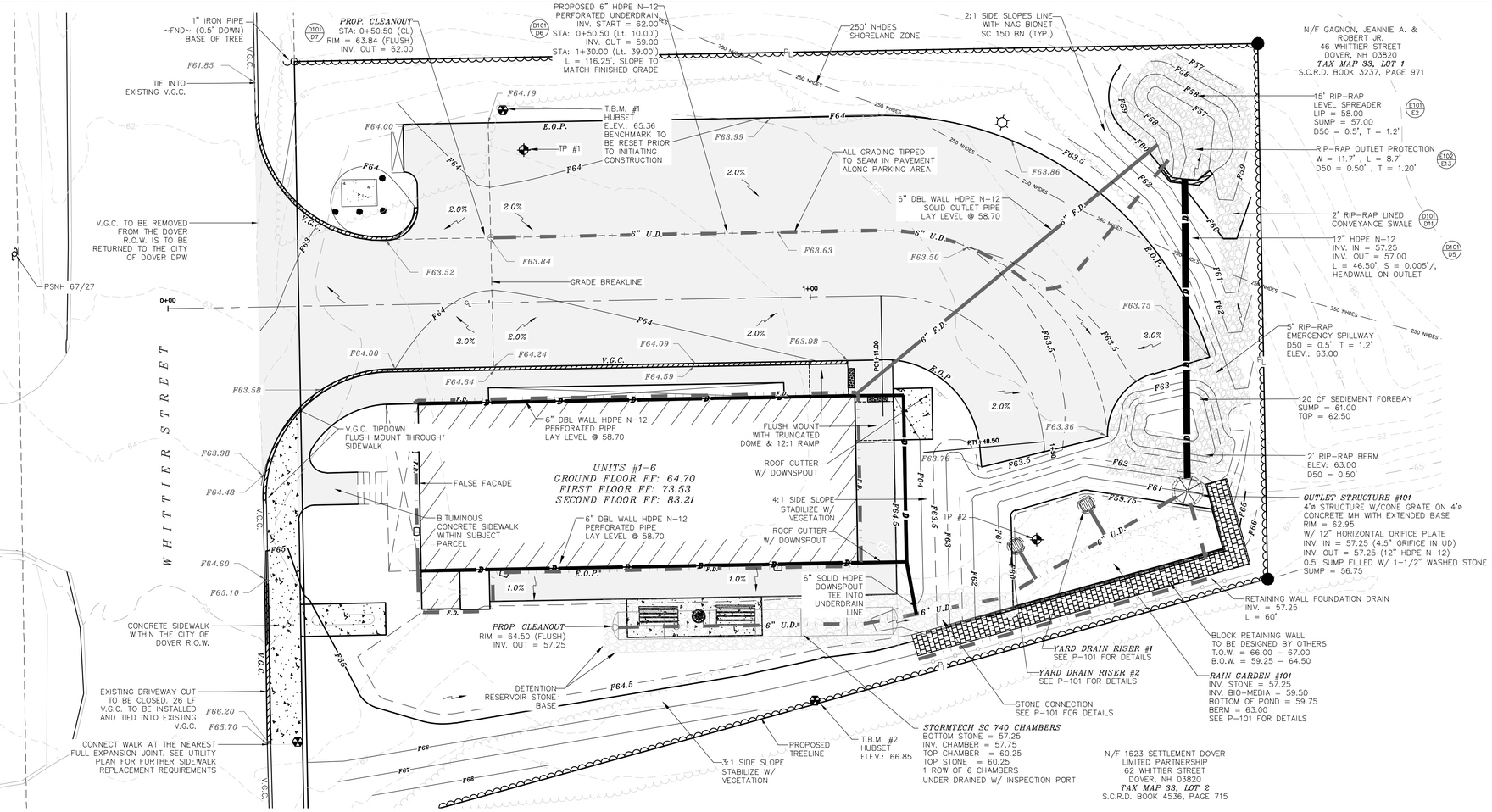
12.) NOTE THAT THE PROJECT NOT SUBJECT TO THE EPA NPDES PHASE II. OPERATION OF THE SITE WILL CONFORM TO THE STORM WATER MANAGEMENT PLAN PER CITY OF DOVER CHAPTER 149–14. WEEKLY INSPECTIONS WILL BE CONDUCTED BY THE DESIGN ENGINEER, OR THIRD PARTY INSPECTOR, SEE E101.

13.) UPON FINAL COMPLETION AND 85% STABALIZATION THE DRAINAGE SYSTEM IS TO BE CLEANED OF ALL DEBRIS TO INCLUDE THE PUMPING OF THE BASIN SUMPS.

14.) ALL UNPAVED AREAS ARE TO RECEIVE 4" QUALITY LOAM AND SEED.

15.) ALL BASINS AND DRAINS ARE TO HAVE BOOTS INSTALLED ON ALL INLETS AND OUTLETS.

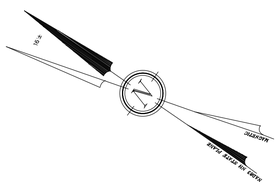
16.) ALL PROPOSED CLEAN OUTS ARE TO BE VERTICAL 12" N–12 PIPE WITH CAST IRON COVERS SCREWED WITH STAINLESS SCREWS. THE COVER IS TO BE DEMARCATED WITH A "D".



GRAPHIC SCALE

20 0 5 10 20 40

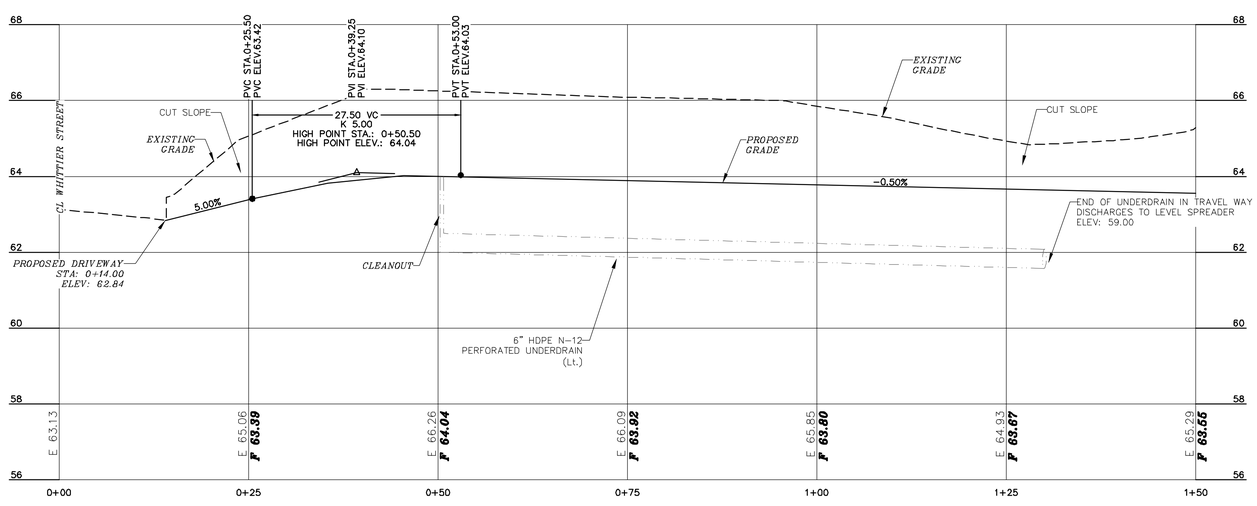
(IN FEET)
1 inch = 10 ft.



GRAPHIC SCALE

20 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.
VERTICAL SCALE: 1" = 2'



DOVER PLANNING FILE #P21–37

#	REVISION	DATE	DESCRIPTION
1		7–20–21	REVISED PER DOVER TRC COMMENT

GRADING PLAN & PROFILE
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 10412
LICENSED PROFESSIONAL ENGINEER

BIORETENTION FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Bioretention Filter Media Option A			
ASTM C-33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5

3/8" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
1/2"	100
3/8"	95 – 100
# 4	22 – 55
# 8	0 – 10

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

1-1/2" WASHED CRUSHED STONE*

SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1-1/2"	90 – 100
1"	20 – 55
1/2"	0 –15
3/8"	0 –5

* EQUIVALENT TO STANDARD WASHED STONE – SECTION 702 OF NHDOT NHDOT STANDARD SPECIFICATIONS

NOTES

1. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL BIORETENTION FILTER MEDIA SHALL BE AS SHOWN ABOVE. "BIO MEDIA" MEANS BIORETENTION FILTER MADIA.
3. COMPACTION IS NOT TO OCCUR IN THE RAIN GARDEN AREAS PRIOR TO CONSTRUCTION. SCARIFICATION REQUIRED IN THE EVENT COMPACTION TAKES PLACE.
4. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
6. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

1 SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.

2 PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.

3 AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.

4 VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

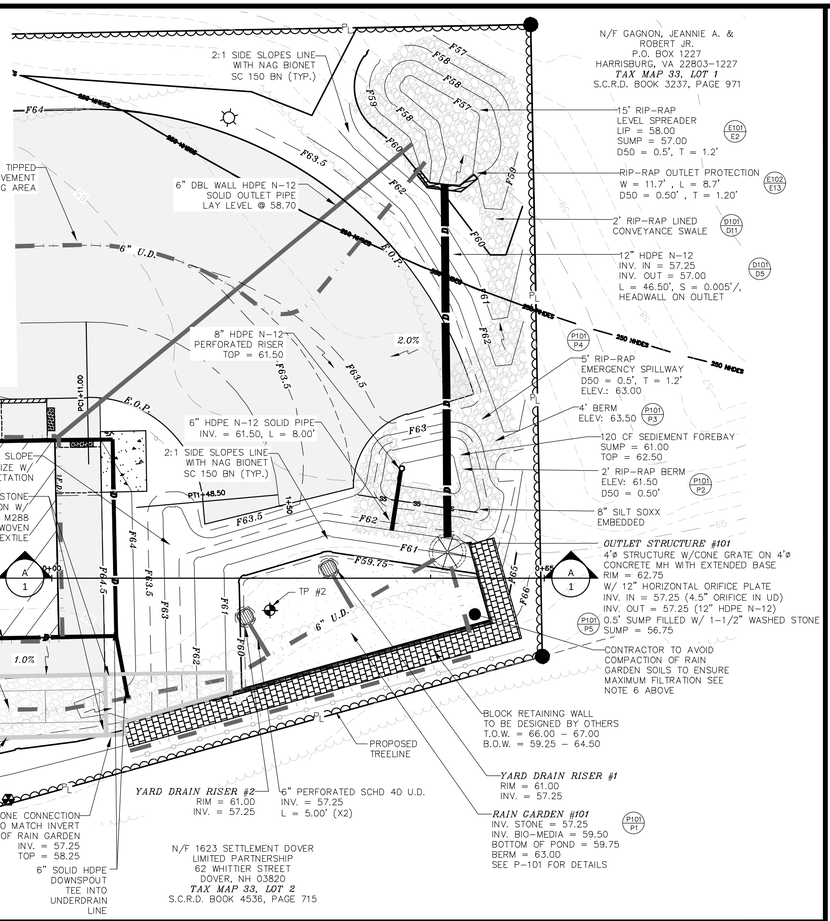
DESIGN REFERENCES

1 UNH STORMWATER CENTER
2 NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

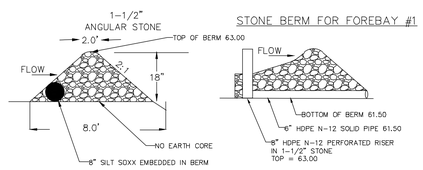
P1

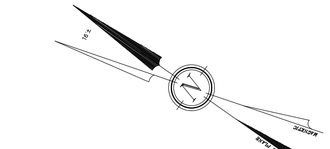
RAIN GARDEN MIX

THE GRASS THAT IS PLANTED WITHIN A RAIN GARDEN BIO-FILTRATION SYSTEM WITHIN THE BIO-MEDIA MUST CONSIST OF A COMBINATION OF WARM SEASON GRASS SEED AND COLD SEASON GRASS SEED IN ORDER FOR THE GRASS TO START GROWING FOR STABILIZATION AND CONTINUE GROWING IN THE SANDY WELL-DRAINED ENVIRONMENT. PLANTING SPECIFICATION WILL MEET THE REQUIREMENTS AS OUTLINED IN "VEGETATION NEW HAMPSHIRE SAND AND GRAVEL PITS" MIX 1 (WARM SEASON GRASSES) (15 LBS/AC) AND INCLUDE ANNUAL AND PERENNIAL RYE GRASS SEED (15 LBS/AC); THE NEW ENGLAND NATIVE WARM SEASON GRASS MIX (23 LBS/AC) BY NEW ENGLAND WETLAND PLANTS, INC.; RAIN GARDEN MIX 180 (15 LBS/AC & 15 LBS/AC OF RYE) / RAIN GARDEN GRASS MIX 180-1 (20 LBS/AC & 10 LBS/AC OF RYE) BY ERNST CONSERVATION SEEDS; OR APPROVED EQUAL.



P2



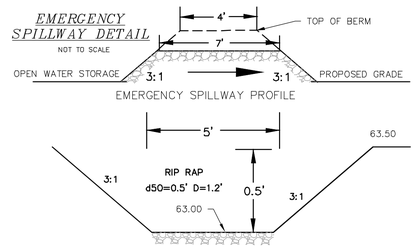


GRAPHIC SCALE

20 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

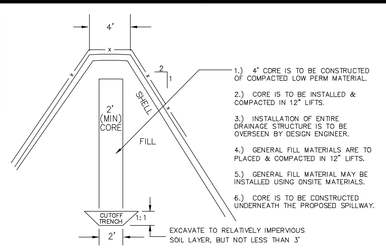
P4



P3

LOW PERMEABILITY MATERIAL GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
#4	95 – 100
#40	60 – 95
#100	40 – 60
#200	25 – 45



BERM CONSTRUCTION
NOT TO SCALE

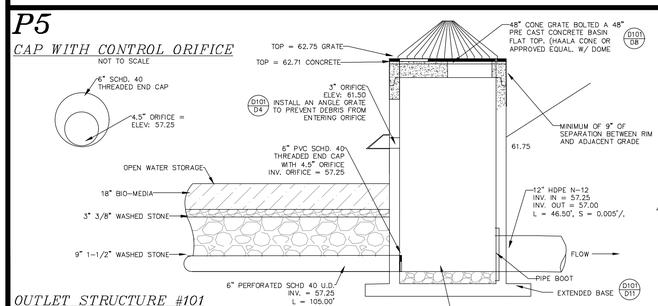
GRAPHIC SCALE

20 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.
VERTICAL SCALE: 1" = 2'

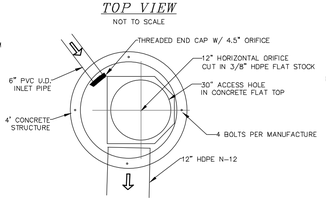
P5

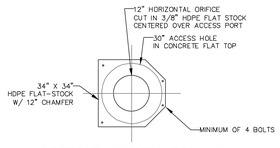
CAP WITH CONTROL ORIFICE
NOT TO SCALE



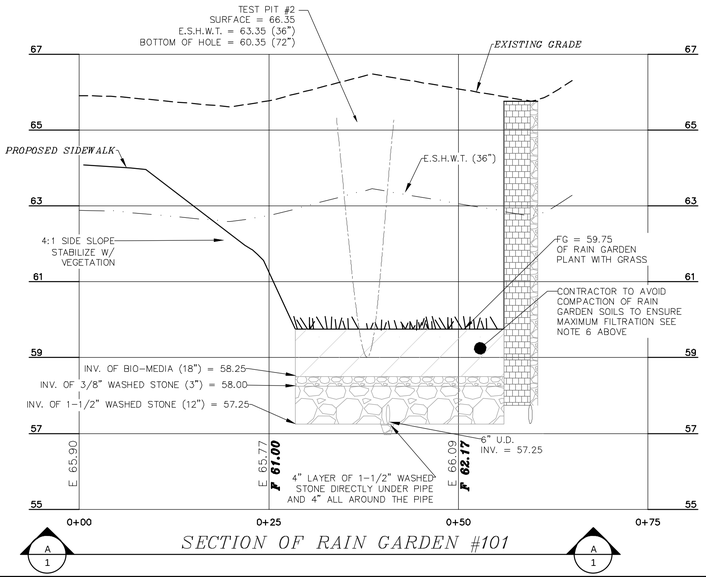
OUTLET STRUCTURE #101
NOT TO SCALE

TOP VIEW
NOT TO SCALE





ORIFICE SCHEMATIC #101
NOT TO SCALE



SECTION OF RAIN GARDEN #101

DOVER PLANNING FILE #P21-37

#	REVISION	DATE	DESCRIPTION
1		7-20-21	REVISED PER DOVER TRC COMMENT

RAIN GARDEN #101 PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 7614
LICENSED PROFESSIONAL ENGINEER

P-101

1. ALL DESIGN SPECIFICATIONS FOR STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE STORMTECH DESIGN MANUAL, ADVANCED DRAINAGE SYSTEM, INC (ADS STORMTECH)
2. THE INSTALLATION OF STORMTECH SC-740 CHAMBERS SHALL BE IN ACCORDANCE WITH THE LATEST STORMTECH INSTALLATION INSTRUCTIONS
3. THE CONTRACTOR IS ADVISED TO REVIEW AND UNDERSTAND THE INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLTION. CALL **1-888-892-2694** OR VISIT **WWW.STORMTECH.COM** TO RECIEVE A COPY OF THE LATEST STORMTECH INSTALLTION INSTRUCTIONS
4. CHAMBERS SHALL MEET THE DESIGN REQUIREMENTS AND LOAD FACTORS SPECIFIED IN SECTION 12.12 OF THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

SC-740 NOTES

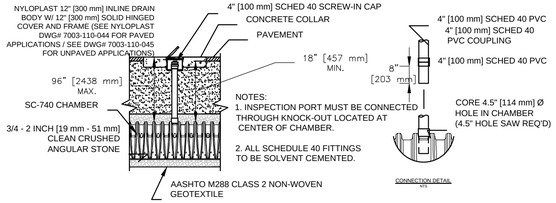
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION[1]	COMPACTION/DENSITY REQUIREMENT
(D) FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
(C) FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 18" (457 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" [305 mm] OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" [152 mm] LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs [53 kN]. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs [89 kN].
(B) EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
(A) FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE ROOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY[2].

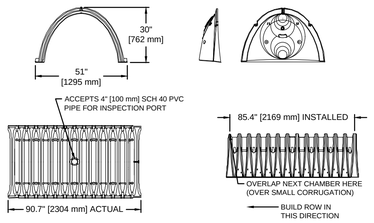
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".

2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" [229 mm] (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.

STORMTECH ACCEPTABLE FILL MATERIALS



SC-740 INSPECTION PORT DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W x H x INSTALLED LENGTH)	51.0" x 30.0" x 85.4" [1295 mm x 762 mm x 2169 mm]
CHAMBER STORAGE	45.9 CUBIC FEET [1.30 m³]
MINIMUM INSTALLED STORAGE	74.9 CUBIC FEET [2.12 m³]
WEIGHT	75 lbs. [33.6 kg]

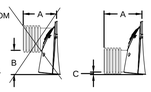
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART#	STUB	A	B	C
SC740EPE06T	6" [150 mm]	10.90" [277 mm]	18.50" [470 mm]	N/A
SC740EPE06B	6" [150 mm]	10.90" [277 mm]	N/A	0.50" [13 mm]
SC740EPE08T	8" [200 mm]	12.20" [310 mm]	16.50" [419 mm]	N/A
SC740EPE08B	8" [200 mm]	12.20" [310 mm]	N/A	0.60" [15 mm]
SC740EPE10T	10" [250 mm]	13.40" [340 mm]	14.50" [368 mm]	N/A
SC740EPE10B	10" [250 mm]	13.40" [340 mm]	N/A	0.70" [18 mm]
SC740EPE12T	12" [300 mm]	14.70" [373 mm]	12.50" [318 mm]	N/A
SC740EPE12B	12" [300 mm]	14.70" [373 mm]	N/A	1.20" [30 mm]
SC740EPE15T	15" [375 mm]	18.40" [467 mm]	9.00" [229 mm]	N/A
SC740EPE15B	15" [375 mm]	18.40" [467 mm]	N/A	1.30" [33 mm]
SC740EPE18T	18" [450 mm]	19.70" [500 mm]	5.00" [127 mm]	N/A
SC740EPE18B	18" [450 mm]	19.70" [500 mm]	N/A	1.60" [41 mm]
*SC740EPE24B	24" [600 mm]	18.50" [470 mm]	N/A	0.10" [3 mm]

NOTE: ALL DIMENSIONS ARE NOMINAL

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

*FOR THE SC740EPE24B THE 24" [600 mm] STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" [44 mm]. BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.



SC-740 TECHNICAL SPEC.

SC-740 CHAMBER
CHAMBERS SHALL MEET ASTM F 2418-09 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3/4" - 2" (19 mm - 51 mm) CLEAN, CRUSHED, ANGULAR STONE
AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE
THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
GRANULAR WELL GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. COMPACT IN 6" LIFTS TO 95% PROCTOR DENSITY. SEE THE TABLE OF ACCEPTABLE FILL MATERIALS
2.25' MAX. MAXED AT HIGH POINT
6" STONE DEPTH ABOVE UNIT
END INSTALLED WITH NON-WOVEN GEOTEXTILE. NOTCH(ES) AS SHOWN ON DETAIL. NOTCH WIDTH = 1.5" [38 mm], NOTCH DEPTH = 1.5" [38 mm], NOTCH QTY = 2
30"
18" MIN COVER REQ.
6"
SC-740 ENDCAP
2.0'
6"
51"
2.0'
DESIGN ENGINEER RESPONSIBLE FOR ENSURING THE REQUIRED BEARING CAPACITY OF SUBGRADE SOILS

SC-740 STANDARD CROSS SECTION

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

STORMTECH CHAMBER DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : N/A
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 15073
LICENSED
PROFESSIONAL ENGINEER

P-102

SOILS & DEWATERING:

BxB BUXTON SILT LOAM K= 0.49

SEE SITE SPECIFIC SOILS MAP (SSSM)
SEE WEBSOIL USDA–NRCS
ERODIBILITY FACTOR – K, CPESC MANUAL, ENVIROCERT INTERNATIONAL INC. &
ROCKINGHAM COUNTTY SOIL SURVEY, ROCKWEB SOIL ATTRIBUTES.

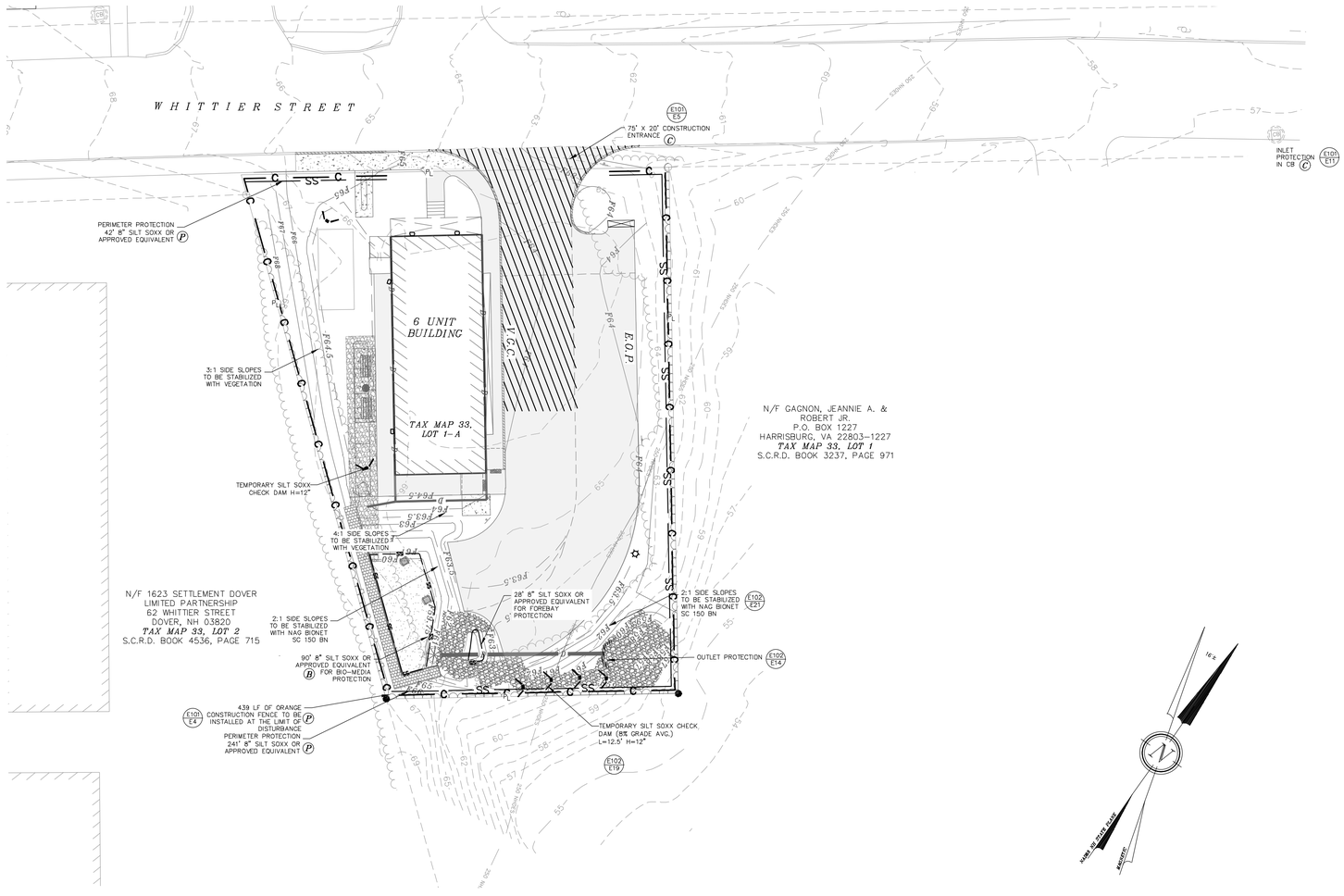
CONTRACTOR TO BE AWARE OF THE SOIL PROFILES AND ENSURE THAT PROPER EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TAKEN AT ALL TIMES. ANY DEWATERING REQUIREMENTS IN NEW HAMPSHIRE REQUIRE SPECIAL PROVISIONS IN ACCORDANCE WITH THE "CLARIFICATION OF SECTION 9.1.2 (STATE OF NEW HAMPSHIRE CONDITIONS) AND OTHER NH SPECIFIC INFORMATION FOR THE U.S. EPA 2012 NPDES CONSTRUCTION GENERAL PERMIT (CGP)" DATED MAY 3, 2012 INCLUDED IN THE SWPPP.

COVER MANAGEMENT DURING CONSTRUCTION FOR EXPOSED SOIL WILL INCLUDE HAY / STRAW APPLIED AT A RATE OF 2.0 TONS PER ACRE, TEMPORARY SEEDING OF ANNUAL RYE GRASS, AND PERMANENT SEEDING AT THE EARLIES OPPORTUNITY. SEE ADDITIONAL REQUIREMENT FOR STABILIZATION ON THE EROSION AND SEDIMENT CONTROL DETAIL SHEETS, E–101 AND E–102.

THE CONSTRUCTION SCHEDULE WILL BE MANAGED SO THAT ALL STORMWATER STRUCTURES WILL BE BUILT AND STABILIZED PRIOR TO RECEIVING SURFACE WATER RUNOFF. CONTRACTOR TO BE RESPONSIBLE FOR ALL DIVERSIONS DURING CONSTRUCTION AND FOR INTERIM SEDIMENT AND EROSION CONTROL MEASURES.

LEGEND:

- (B) BMP / SUBSURFACE GRAVEL WETLAND
- (P) PERIMETER CONTROL
- (C) RESIDENTIAL/ROADWAY CONSTRUCTION
- IRON BOUND (FND)
- UTILITY POLE
- GUY WIRE
- BENCH MARK
- RIP RAP
- RAIN GARDEN
- BERM
- SILT FENCE
- FILTREXX SILTSOXX
- TREE LINE
- CONSTRUCTION FENCE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1.) OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

2.) APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

3.) THE PROJECT PARCEL IS TAX MAP 33, LOT 1–A

4.) LOT AREA: 15,394 Sq. Ft., 0.35 Ac.

5.) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVE AND BELOW GROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITY CONFLICTS SHOULD BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.

6.) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE AT 1–888–344–7233 AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

7.) ALL DRAINAGE PIPE IS TO BE HDPE N–12. INDIVIDUAL PIPE SIZES ARE SPECIFIED ON GRADING AND DETAIL PLAN SHEETS, GREEN PIPE.

8.) ALL ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE DESIGN ENGINEER IS TO BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY. TEMPORARY BENCHMARKS (T.B.M.) ARE TO BE PROVIDED BY THE DESIGN ENGINEER.

9.) UPON FINAL COMPLETION AND 85% STABILIZATION, THE DRAINAGE SYSTEM IS TO BE CLEANED OF ALL DEBRIS. SEDIMENT CONTROL PRACTICES REMOVED AND DISPOSED OF PROPERLY, AND ANNUAL MAINTENANCE PREFORMED ON ALL DRAINAGE PRACTICES.

10.) EROSION AND SEDIMENT CONTROL INSPECTIONS TO BE CONDUCTED ONCE PER EVERY SEVEN DAYS AND AT AN INCREASED FREQUENCY INCLUDING WITHIN 24–HOURS OF A 0.25 INCH RAIN EVENT. INSPECTIONS TO BE CONDUCTED BY A "QUALIFIED PERSON" AS DEFINED BY EPA CGP 4.1.1 AND INSPECTION REPORTS SUBMITTED TO THE CITY OF DOVER, NH, ENGINEERING DEPARTMENT WITHIN 24 HOURS IN ACCORDANCE WITH CGP 4.1.7 AND MAINTAINED BY THE OWNER FOR A PERIOD OF THREE YEARS AFTER THE PROJECT IS COMPLETED. SEE ALSO CITY OF DOVER ADDITIONAL INSPECTION REQUIREMENTS BELOW.

11.) SILT FENCE MAY BE SUBSTITUTED WITH FILTREXX SILT SOXX OR EROSION CONTROL MIX BERM. SILT FENCE IS NOT A SUBSTITUTE FOR FILTREXX SILT SOXX OR APPROVED EQUAL.

12.) PER EPA CGP 2.1.2.2 (INSTALL PERIMETER CONTROL), "YOU MUST INSTALL SEDIMENT CONTROLS ALONG THOSE PERIMETER AREAS OF YOUR SITE THAT WILL RECEIVE STORMWATER FROM EARTH DISTURBING ACTIVITIES." AS A RESULT OF SWPPP INSPECTIONS, THE CONTRACTOR MAY HAVE TO EXPAND PERIMETER CONTROLS TO MEET THIS REQUIREMENT. THE E&SC PLAN IS INITIAL GUIDANCE AS TO THE ANTICIPATED REQUIREMENTS AND IT THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT STORMWATER VIOLATION DO NOT OCCUR.

13.) CITY OF DOVER: IN ACCORDANCE WITH SITE PLAN REVIEW REGULATIONS (149–14) THE FOLLOWING STORMWATER MEASURES ARE REQUIRED. THE EXISTING IMPERVIOUS AREA IS 14.0% AND PROPOSED IMPERVIOUS AREA IS 53.6%. THE CONTIGUOUS LAND DISTURBANCE IS 15,200 SQUARE FEET.

A.) ALL PROPOSED BMPs WILL CONFORM TO THE NH STORMWATER MANUAL VOLUME 3.
B.) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY COMMUNITY SERVICE.
C.) TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN SEVEN CALENDAR DAYS FOR EXPOSED SOILS AREAS THAT ARE WITHIN ONE HUNDRED FEET OF A SURFACE WATER BODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOKL AREAS.
D.) ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL STABILIZATION IS ACCOMPLISHED.
E.) COMMUNITY SERVICES DEPARTMENT OR THEIR DESIGNATED AGENT SHALL HAVE ACCESS TO THE SITE TO COMPLETE ROUTINE INSPECTIONS AND SHALL BE NOTIFIED 24–HOURS PRIOR TO INSTALLATION OF A STORMWATER BMP IN ORDER TO SCHEDULE AN INSPECTION, DURING NORMAL WORKING HOURS.
F.) THE PLANNING BOARD OR COMMUNITY SERVICES MAY REQUIRE THE DESIGN ENGINEER AND/OR AN INDEPENDENT, THIRD–PARTY INSPECTION AND OVERSIGHT OF THE CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES AND EROSION AND SEDIMENT CONTROL AT THEIR DISCRETION. THE OWNER / APPLICANT IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH INSPECTIONS.
G.) ALL SWPPP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORMWATER INSPECTOR (CESSW), OR A CERTIFIED PROFESSIONAL IN STORMWATER QUALITY (CPSWQ). INSPECTION REPORTS WILL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.

14.) CONTRACTOR MAY BE REQUIRED TO HAVE A CONSTRUCTION ENTRANCE DEPENDING ON SITE MANAGEMENT.

15.) CONTRACTOR IS RESPONSIBLE FOR SWEEPING THE PARKING LOT, SIDEWALKS AND ANYTHING DISTURBED, TO ENSURE THAT NO SEDIMENT IS BEING TRACKED ONTO WHITTIER STREET.

16.) CONTRACTOR IS RESPONSIBLE FOR CLEANING AND MAINTAINING THE INLET PROTECTION ONCE INSTALLED.

17.) FUGITIVE DUST IS TO BE CONTROLLED THROUGHOUT THE CONSTRUCTION PROCESS IN ACCORDANCE WITH ENV–A 1000.

18.) CONTRACTOR IT TO MEET THE REQUIREMENTS SPECIFIED IN RSA 430:51–57 AND AGR 3800, RELATING TO INVASIVE SPECIES.

19.) CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE WATER QUALITY FROM ANY RUN OFF DURING THE CONSTRUCTION PROCESS, IN ACCORDANCE WITH ENV–WQ 1507, IN ORDER TO PREVENT VIOLATIONS OF THE STORM WATER QUALITY STANDARDS.

DOVER PLANNING FILE #P21–37

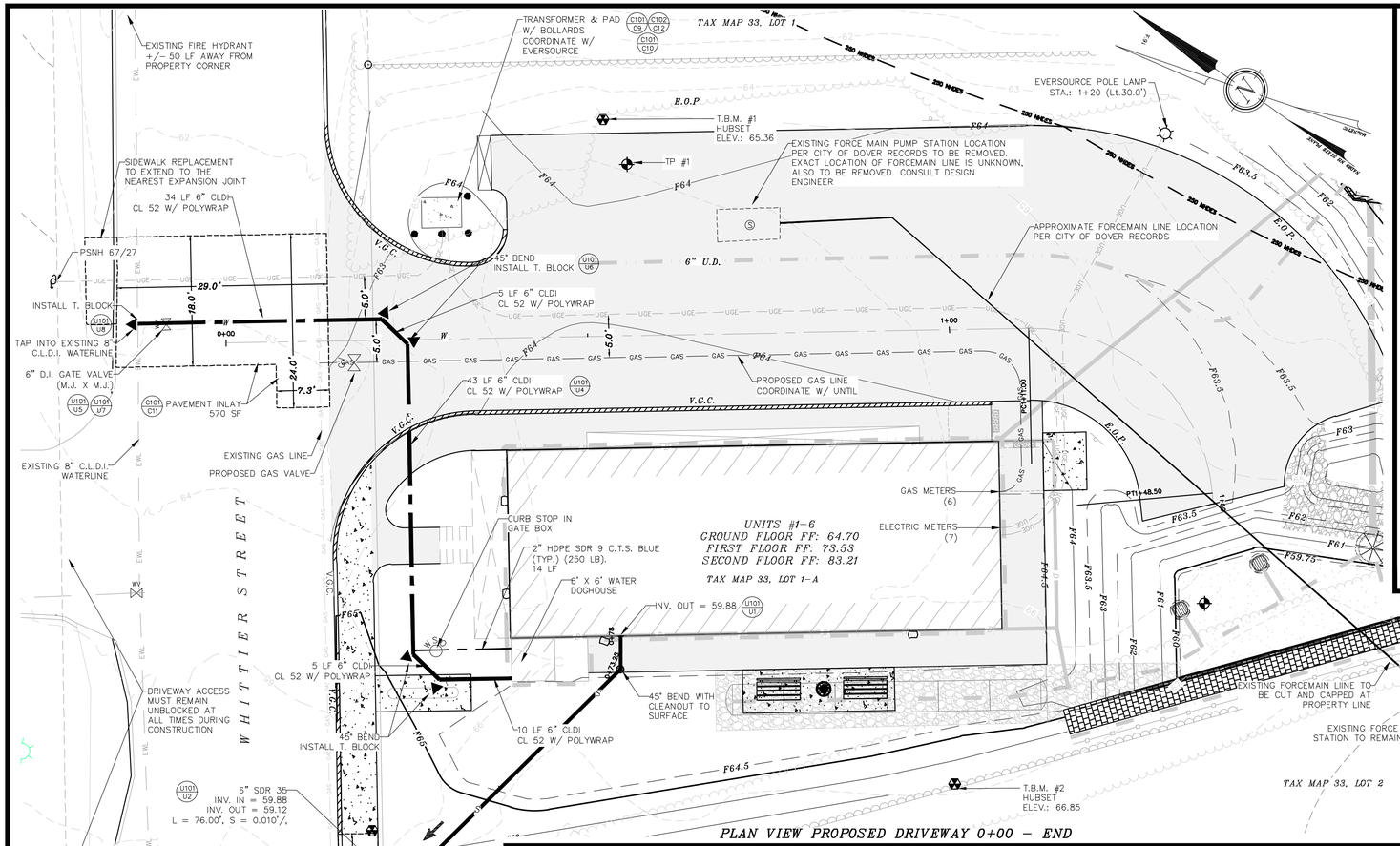
REVISION	DATE	DESCRIPTION
#1	7–20–21	REVISED PER DOVER TRC COMMENT

EROSION AND SEDIMENT CONTROL PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

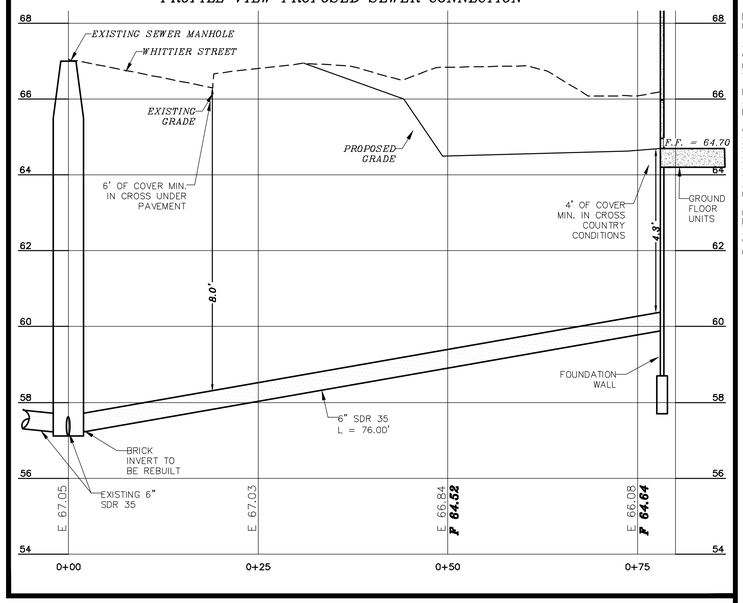
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 13073
LICENSED PROFESSIONAL ENGINEER

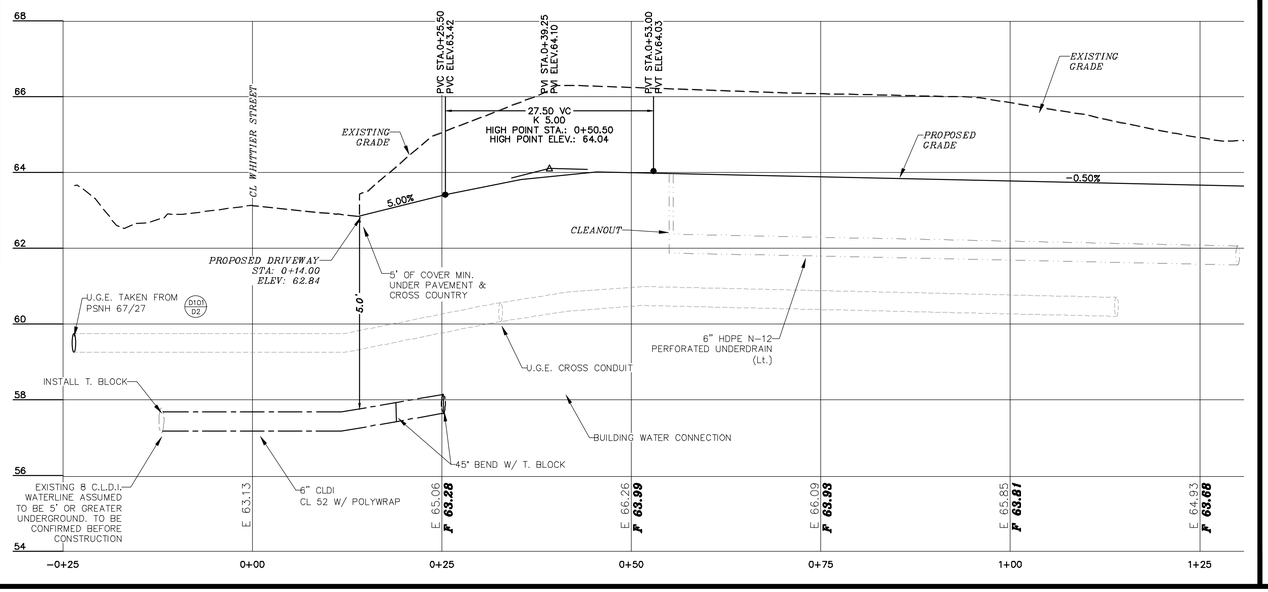


PROFILE VIEW PROPOSED SEWER CONNECTION



PLAN VIEW PROPOSED DRIVEWAY 0+00 – END

PROFILE VIEW PROPOSED DRIVEWAY 0+00 – END



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

STANDARD UTILITY NOTES:

1. UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVE AND BELOW GROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY UTILITY CONFLICTS SHOULD BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.
2. THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
3. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES, TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL MEETING THE ENGINEERS SPECIFIC RECOMMENDED CRITERIA.
4. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER (NOT ALLOWED IN CITY R.O.W.), EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATION. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
6. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES AND THE DOVER DPW.
7. CONTRACTOR TO CONTACT DOVER DPW A MINIMUM OF TWO WEEKS PRIOR TO ANY CONSTRUCTION TO COORDINATE ALL WORK CONCERNING INSTALLATION OF ANY PROPOSED WATER LINE IMPROVEMENTS.
8. WATER MAIN INSTALLATION SHALL CONFORM TO CITY OF DOVER STANDARDS. ALL HIGHWAY CONSTRUCTION WILL MEET THE CITY OF DOVER STANDARDS.
9. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL INSTALLATIONS WITH EVERSOURCE AT (800) 662-7764. ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL. A 48-HOUR MINIMUM NOTICE IS REQUIRED.
10. ALL SEWER INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF NHDES & ROCHESTER DPW SEWER DIVISION STANDARDS. ALL PVC SEWER PIPE IS TO CONFORM WITH ENV-WQ 704.05 (c)-(e) AND CONFORM WITH ASTM D3034. PVC JOINT SEALS SHALL CONFORM WITH ASTM D3121.
11. WATER SERVICE TO BE WITNESSED WITH A 2"X4" PAINTED BLUE. SEWER SERVICE ARE TO BE WITNESSED WITH A 2"X4" PAINTED YELLOW, IS STUBBED PRIOR TO BUILDING CONSTRUCTION.
12. CURB BOXES SHOULD BE PLACED IN THE LAWN AREA, OR IF PLACED IN PAVEMENT, A ROAD BOX IS REQUIRED.
13. SEE EXISTING CONDTIONS PLAN FOR DATUM. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS.
14. CONTRACTOR TO TRANSFER TEMPORARY BENCHMARK TO A SUITABLE BENCHMARK TO CONTROL CONSTRUCTION. ANY ELEVATION DISCREPANCIES ARE TO BE REPORTED TO THE THE DESIGN ENGINEER IMMEDIATELY.
15. THE EXISTING RESIDENTIAL WATER SERVICE LOCATION IS UNKNOWN. WHEN FOUND,ANY EXISTING SERVICE SHALL BE DISCONTINUED (CUT AND CAPPED) AT THE MAIN IN THE STREET.

DOVER PLANNING FILE #P21-37

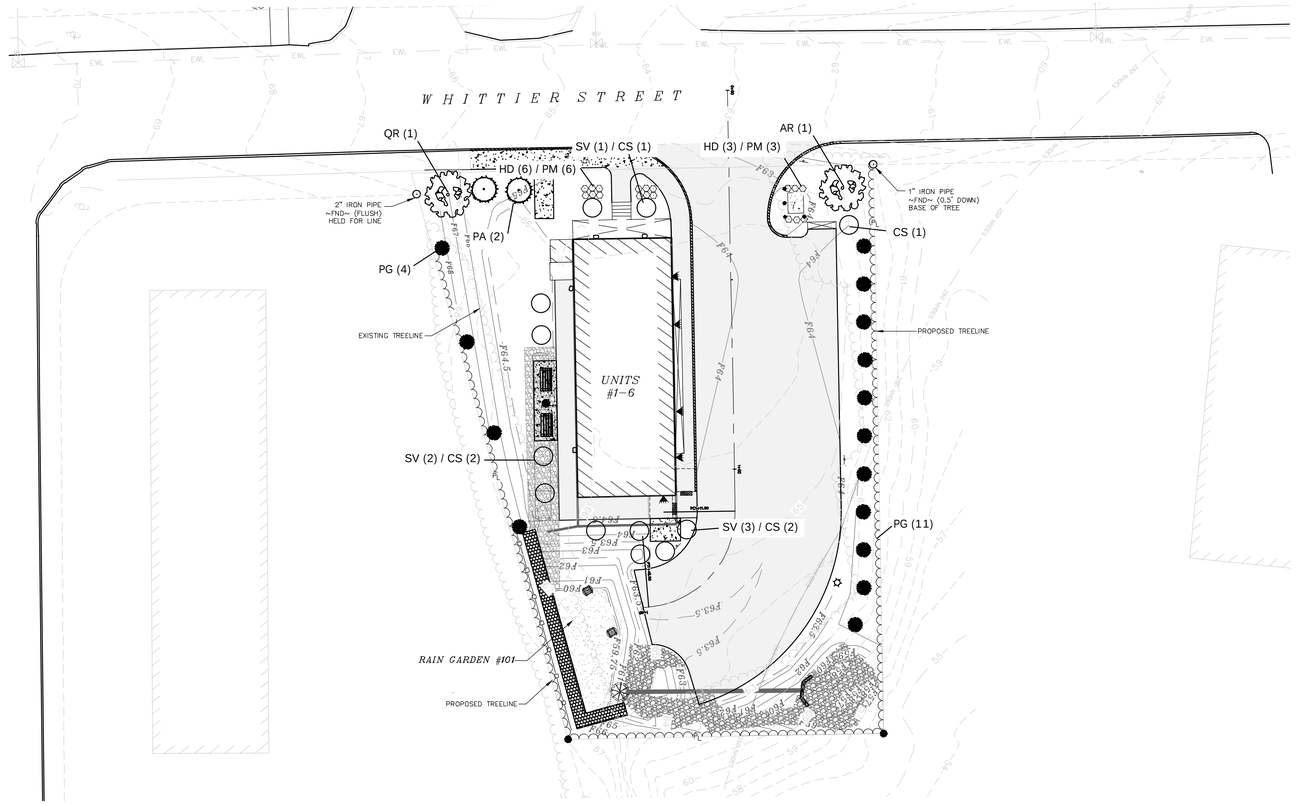
#	REVISION	DATE	DESCRIPTION
1		7-20-21	REVISED PER DOVER TRC COMMENT

UTILITY PLAN & PROFILE
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE KENNETH A. BERRY No. 14243 LICENSED PROFESSIONAL ENGINEER





GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTES:

1. CALL DIG SAFE PRIOR TO BEGINNING WORK. (1-888-344-7233). THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF THE SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER OR GENERAL CONTRACTOR.
2. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING.
3. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS. VARIATIONS IN QUANTITIES ARE TO BE APPROVED BY THE DESIGN ENGINEER.
4. PROVIDED SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.
5. ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN
6. ALL PLANT MATERIALS SHALL BE FREE FROM INSECTS AND DISEASE.
7. ALL PLANTINGS SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM OWNER.
8. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING AND NEWLY PLANTED TREES AND SHRUBS DURING THE CONSTRUCTION PROCESS. WHERE REQUIRED, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING (SNOW OR EQUAL) AROUND EXISTING TREES AND SHRUBS THAT COULD BE IMPACTED BY THE CONSTRUCTION PROCESS. STORAGE OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS, SNOW STORAGE AND OR VEHICLE PARKING SHALL NOT BE PERMITTED WITHIN THE DRIP LINE OF TREES OR TWENTY FEET WHICH EVER IS GREATER.
10. NEW PLANTINGS SHALL BE INSTALLED PER PROJECT DRAWINGS AND SPECIFICATION THAT INCLUDE FERTILIZATION AND MULCHING AS REQUIRED.
11. ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.
13. MAINTENANCE OF NEW PLANTINGS AND LAWNS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND OR LANDSCAPE SUBCONTRACTOR UNTIL ACCEPTANCE BY THE OWNER. RESPONSIBILITIES SHALL INCLUDE WATERING WEEDING AND MOWING AS NECESSARY. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, REPLACEMENT MATERIAL SHALL BE GUARANTEED FOR AND ADDITIONAL YEAR FROM TIME OF INSTALLATION.
14. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES DURING THE CONSTRUCTION PHASE AND UNTIL ALL AREAS HAVE BEEN STABILIZED AND ACCEPTED BY THE OWNER. THE GENERAL CONTRACTOR SHALL PROVIDE WEEKLY INSPECTIONS OF EROSION MEASURE AND IMMEDIATELY AFTER STORM EVENTS AND REPAIR AS NECESSARY.
15. THE GENERAL CONTRACTOR AND OR THE LANDSCAPE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL THREE GUYING MATERIAL ONCE PLANT MATERIAL HAS BEEN ESTABLISHED. (MINIMUM OF ONE GROWING SEASON). ALL TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVED ONCE STABILIZATION OF DISTURBANCE HAS BEEN ACCEPTED BY OWNER.
16. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM OF TWO MOWINGS FOR ALL TURF AREAS OR UNTIL ACCEPTANCE BY THE OWNER. A MINIMUM UNIFORM 75% CATCH OF TURF IS REQUIRED FOR ACCEPTANCE.
17. ALL PLANTINGS SHALL BE WATERED REGULARLY DURING THEIR FIRST YEAR AND MAINTAINED PERMANENTLY IN GOOD GROWING CONDITION AS AN EFFECTIVE VISUAL SCREEN.
18. SHRUBS OR TREES WHICH DIE SHALL BE REPLACED WITHIN ONE GROWING SEASON WITH NEW SHRUBS OR TREES TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE LANDSCAPING REQUIREMENTS.
19. ALL REQUIRED LANDSCAPING SHALL BE INSTALLED BEFORE OCCUPANCY, OR WITHIN SIX MONTHS IF OCCUPANCY OCCURS DURING WINTER CONDITIONS.
20. TREES ARE TO BE 6' TALL AT PLANTING.
21. ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITIONS (AMERICAN ASSOCIATION OF NURSERYMEN, INC.)
22. 4" AGED PINEBARK MULCH AND A WEED BARRIER (TY-PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUND COVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.
23. PLANT-PIT BACK-FILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 2 PARTS OF DEHYDRATED COW MANURE. SLOW RELEASE FERTILIZER SHALL BE APPLIED AS PER MANUFACTURERS RECOMMENDATIONS. USE EXISTING ON-SITE TOPSOIL AS PART OF BACK FILL WHEN AVAILABLE.
24. ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED OR SOD AS INDICATED ON PLANS.
25. TOPSOIL WILL BE TESTED FOR FERTILIZATION REQUIREMENTS, AND SLOW RELEASE ENVIRONMENTALLY FRIENDLY FERTILIZER WILL BE APPLIED AT THE RECOMMENDED RATES.
26. ALL DISTURBED WETLAND BUFFER AREAS, EXCEPT FOR AREAS THAT ARE PART OF THE DRAINAGE SYSTEM, ARE TO BE RESEEDED WITH A CONSERVATION SEED MIX AND ONLY MOWED TWICE PER YEAR.
27. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER.
28. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ONGOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
29. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWNG SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
30. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NO LESS THAN ONE FULL YEAR FROM THE TIME OF INSTALLATION. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE OWNER IN WRITING OR OTHERWISE FORFEIT HIS CLAIM.
31. BY THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAS DIED, THAT HAS LOST NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESS PRUNING OR INADEQUATE OR IMPROPER CARE, OR IS, IN THE OPINION OF THE OWNER, IN UNHEALTHY OR UNSIGHTLY CONDITION.
32. THE CONTRACTOR IS TO USE TEMPORARY MEASURES FOR WATERING PLANTS DURING THE ESTABLISHMENT PERIOD. INCLUDING CONNECTING TEMPORARY HOSES TO THE STRUCTURE WATER SUPPLY LINE AND UTILIZING SPRINKLERS UNTIL 85% GROWTH OCCURS.

PLANTING NOTES

1. CONTRACTOR SHALL OBTAIN APPROVAL FROM L.A. PRIOR TO PURCHASING &/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
2. CONSTRUCTION ACCESS WILL BE AS DIRECTED BY L.A. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ACCESS ROUTE AND ALL AREAS DISTURBED BY PLANTING OPERATIONS UPON COMPLETION OF CONSTRUCTION OPERATIONS, AT NO ADDITIONAL COST TO THE OWNER.
3. LAYOUT OF ALL PLANTING BEDS AND LOCATION OF PLANTS TO BE APPROVED BY L.A. ON SITE PRIOR TO CONSTRUCTION AND INSTALLATION.
4. CONTRACTOR TO REMOVE ALL DEBRIS GENERATED BY PLANT INSTALLATION. DEBRIS TO BE DISPOSED OF IN A LEGAL MANNER.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED TO BE IN GOOD, HEALTHY & FLOURISHING CONDITION FOR ONE YEAR FROM THE DATE OF FINAL INSTALLATION APPROVAL BY L.A. CONTRACTOR SHALL REPLACE, WITHOUT COST TO OWNER, AND AS SOON AS WEATHER CONDITIONS PERMIT, ALL DEAD AND NON-FLOURISHING PLANTS AS DETERMINED BY THE L.A. REPLACEMENT PLANTS SHALL BE BE GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY L.A.
6. ALL BEDS TO BE MULCHED WITH 3" DEPTH SHREDDED BARK MULCH UNLESS NOTED OTHERWISE.
7. CONTRACTOR TO PROVIDE NECESSARY TEMPORARY IRRIGATION IF NEEDED BASED ON TIME OF YEAR THE PROJECT IS IMPLEMENTED.

TEMPORARY WATERING NOTES

1. CONTRACTOR IS RESPONSIBLE FOR MAKING SURE ALL PLANT MATERIAL HAS ADEQUATE WATER DURING THE ESTABLISHMENT PERIOD.
2. THE USE OF GATOR BAGS, SOAKER HOSE, HAND WATERING AND OTHER TECHNIQUES SHOULD BE USED TO ASSURE PROPER HYDRATION OF THE PLANTINGS IS MAINTAINED.
3. TEMPORARY IRRIGATION SYSTEMS CAN BE SET UP TO ASSIST IN WATERING ACTIVITIES.

PLANTING SCHEDULE
Whittier Street
Botanical Name/ Common Name

	Size	Qty	Label
Trees			
Plantanus acerifolia/London Planetree	3.5" Cal.	2	PA
Acer Rubrum / Red maple	3.5" Cal.	1	AR
Quercus rubra / Red Oak	3.5" Cal.	1	QR
Picea glauca / White Spruce	3.5" Cal.	15	PG
Shrubs			
Syringa Vulgaris / Lilac	#3 3-4'	6	SV
Cornus sanguina 'Winter Flame' / Winter Flame Dogwood	2-3' B&B	6	CS
Perennials			
Hemerocallis 'Big Time Happy' / Big Time Happy Daylily	#1	9	HD
Hemerocallis 'Pardon Me' / Pardon Me Daylily	#1	9	PM

terrain
planning & design llc

General Plant Maintenance Guide

General Plant Bed Maintenance:
- All plant maintenance should be performed by a qualified horticulturalist or licensed arborist. Cleaning the dead material out of the planting bed in the fall helps keep litter from building up around the plants and in some cases killing the plants. Watering the first year during dry periods will help get the plants established. Mulching every year is not necessary. Raking the old mulch and turning it over is all that is needed. When necessary only install one inch of mulch and do not place the mulch closer than 3" to the trunks or stems of woody plants.

Trees
- The first year watering during dry periods will be necessary.
- 3" inches of mulch maybe used. The mulch should be kept 3 inches from the trunk.
- Fertilizing is not necessary for the first year. Fertilizing in subsequent years only when and if the foliage is looking weak.
- Fertilization should occur prior to Mat 31st or after trees have dropped their leaves for the year.
- Prune dead wood once a year.
- Depending on the amount of compaction the bed area receives, deep root aeration may be needed over time

Woody Shrubs
- The first year watering during dry periods will be necessary.
- 3" inches of mulch maybe used. The mulch should be kept 3 inches from the stems.
- Fertilizing is not necessary for the first year. Fertilizing in subsequent years only when and if the foliage is looking weak.
- Fertilization should occur prior to Mat 31st or after shrubs have dropped their leaves or gone dormant for the year.
- Prune dead wood once a year.

Grasses
- Grasses only need to be clipped back at the end of the growing season and all the clippings removed from the area.
- Do not over mulch. Too much mulch will prohibit the grass from developing into a strong clump.

Perennials
- All perennials need to be pruned back after the first or second hard frost. A two-step method; first dead head all the flower heads and let drop to the ground for re seeding. Second cut the stems back to 3" above the ground and remove the stem and leaf litter and place in compost. Do not over mulch. Too much mulch will prohibit the growth and development
- Fertilizing perennials once in the spring with a low phosphate fertilizer will help the plants to get started in the spring.

www.terrainplanning.com 311 kast hill road hopkinton nh 03229 T:603-491-2322

terrain
planning & design llc
311 kast hill road
hopkinton, nh 03229
603. 491. 2322
terrainplanning.com

HAVEN HOUSING

Site Location:
48 Whittier Street
Dover, NH
Tax Map: 33, Lot 1-A

Prepared For:
Berry Surveying & Engineering
335 Second Crown Point Rd
Barrington, NH 03825

LANDSCAPE PLAN

DATE:

SCALE: 1" = 20'

PROJECT #: 1802

Drawn By: ID

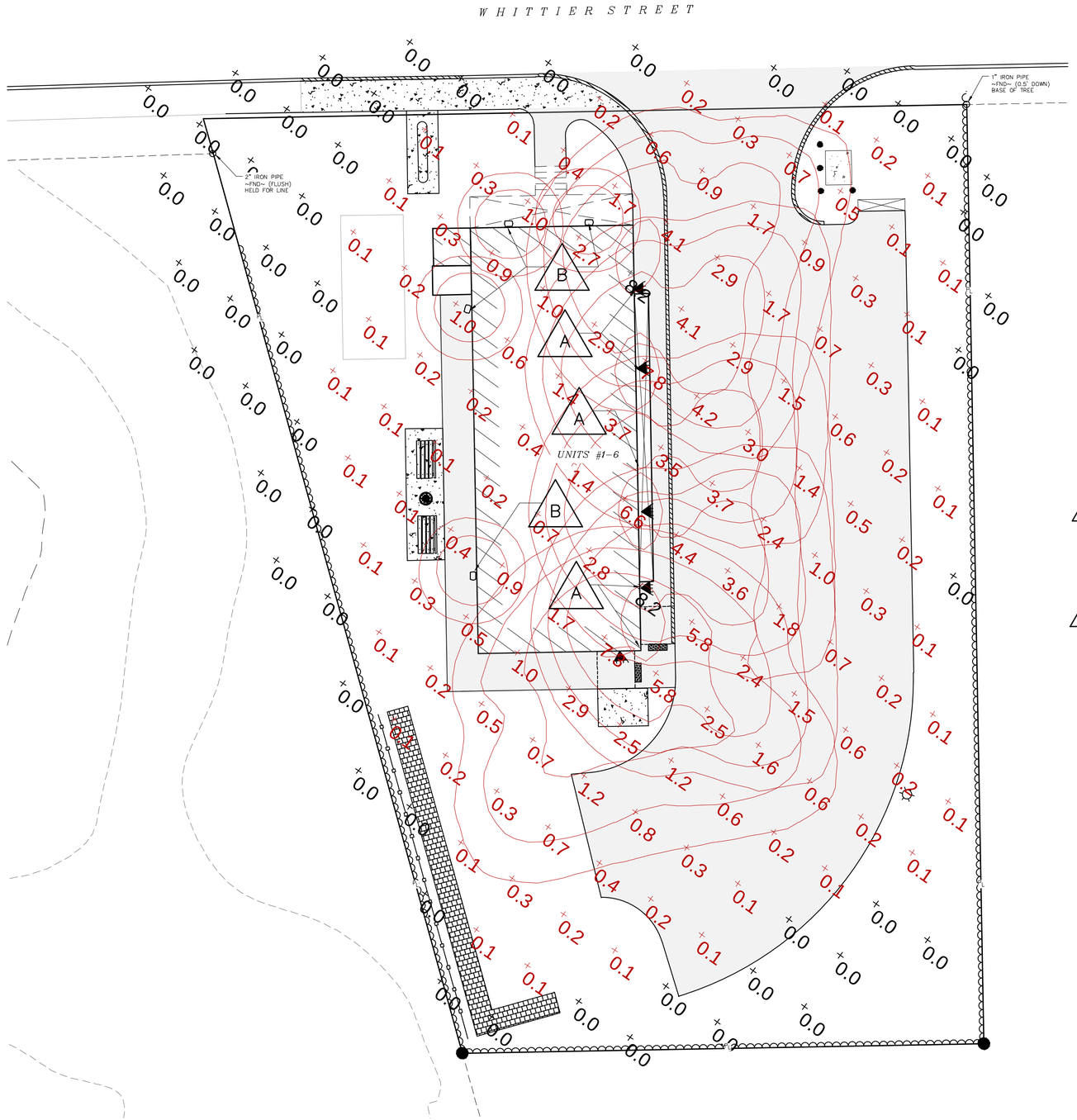
Checked By: ERB

REVISIONS: DATE:
Issued for Client Review

This plan is the property of Terrain Planning & Design LLC. Use or reproduction of this plan by any means without permission or purchase from Terrain Planning & Design LLC is prohibited.

L - 01

LICENSED LANDSCAPE ARCHITECT
ERIC R BUCK
078
STATE OF NEW HAMPSHIRE



NOTES:

1.) OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

2.) TAX MAP 33, LOT 1–A

3.) PROJECT ADDRESS: 48 WHITTIER STREET

4.) LOT AREA: 15,394 Sq. Ft., 0.35 Ac.

5.) S.C.R.D. BOOK 4716, PAGE 900

6.) THE INTENT OF THIS PLAN IS TO PROVIDE THE LIGHTING SCHEME FOR THE PROPOSED PROJECT.

7.) LAMPS ARE SHOWN ON THE SITE PLAN WITH LOCATION, TYPE AND HEIGHT.

8.) SEE CONSTRUCTION DETAILS FOR PRODUCT CUT SHEET.

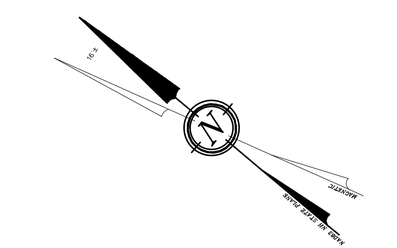
9.) LAMP "A" MOUNTED 8' ON BUILDING, LAMP "B" MOUNTED 8' ON BUILDING.

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
▶	A	5	Lithonia Lighting	WSQ LED P2 SR4 40K MVOLT	WSQ LED WITH P2-PERFORMANCE PACKAGE, 4000K, AND SR4 OPTIC TYPE	LED	1	WSQ_LED_P2_SR4_40K_MVOLT.ies	3053	1	29.17
□	B	4	Lithonia Lighting	ODSL10 SRC	CRAFTSTON WALL MOUNTED SMALL DECORATIVE LANTERN, ONE LAMP 13W SPIRAL COMPACT FLUORESCENT, WHITE GLASS DIFFUSER 4.25" DIA. X 6.65" HIGH, ELECTRONIC BALLAST	ONE 13-WATT T4 SPIRAL COMPACT FLUORESCENT, VERTICAL BASE UP POSITION.	1	ODSL10_SRC.ies	900	1	12.6

Statistics

Description	Avg	Max	Min	Max/Min	Avg/Min
Stat Zone # 1	0.8 fc	1.3 fc	0.2 fc	13.0:1	4.0:1



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

DOVER PLANNING FILE #P21–37

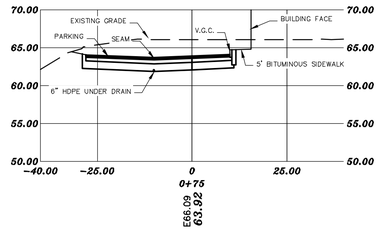
REVISION	DATE	DESCRIPTION
#1	7–20–21	REVISED PER DOVER TRC COMMENT

LIGHTING PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

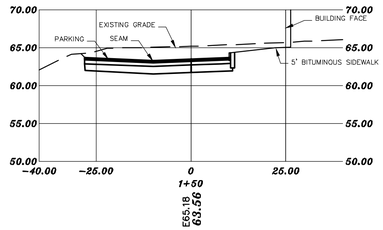
BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

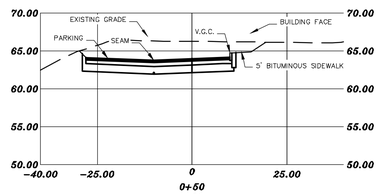
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14043
LICENSED PROFESSIONAL ENGINEER



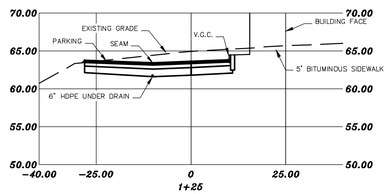
0+75
E66.09
63.92



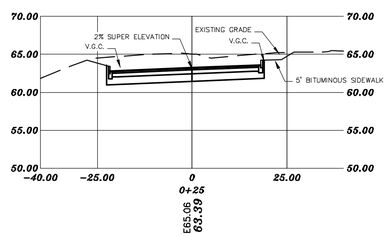
1+50
E65.18
63.56



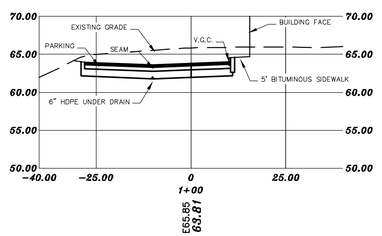
0+50
E66.26
64.04



1+25
E64.93
63.68



0+25
E65.06
63.39



1+00
E65.85
63.81

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.
Vertical Scale 10

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

CROSS SECTIONS 0+00 – END
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14247
LICENSED PROFESSIONAL ENGINEER

LEGEND:

- IRON PIPE ~FND~
- SIGNAGE
- UTILITY POLE
- GUY WIRE
- OHU — OHU — OHU — OVERHEAD UTILITIES LINE
- BUILDING SETBACK LINE
- CENTER LINE

S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS
TYP. TYPICAL
FND FOUND
PL PROPERTY LINE
R.O.W. RIGHT OF WAY
E.O.P. EDGE OF PAVEMENT
V.G.C. VERTICAL GRANITE CURB
SSL (W) SINGLE SOLD LINE (WHITE)
DSL (Y) DOUBLE SOLID LINE (YELLOW)

NOTES:

1.) OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER SREET
DOVER, NH 03820

1A.) APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

2.) TAX MAP 33, LOT 1–A

3.) LOT AREA: 15,394 Sq. Ft., 0.35 Ac.

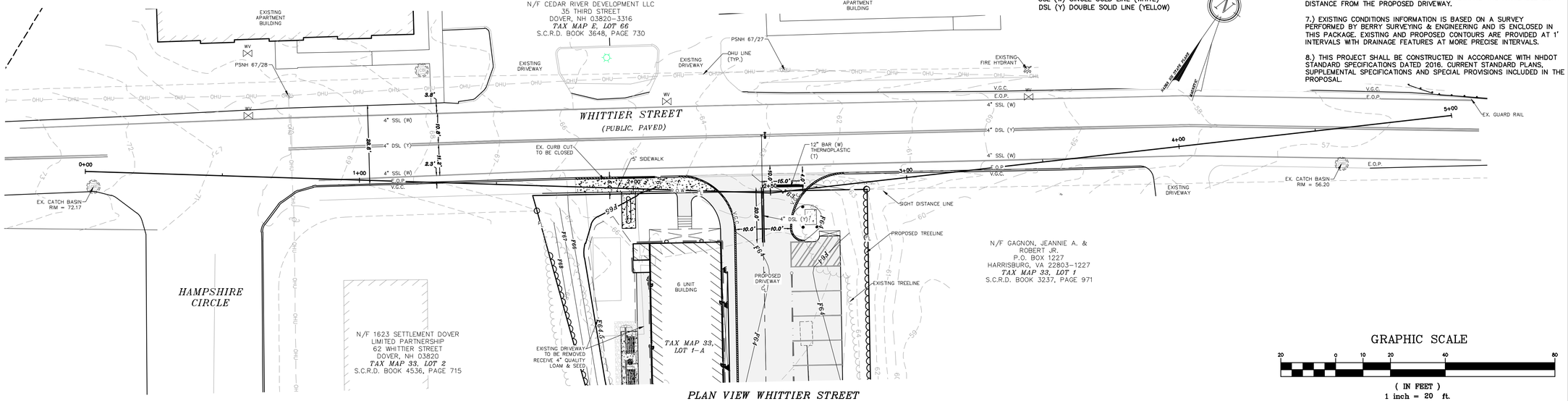
4.) S.C.R.D. BOOK 4716, PAGE 900

5.) THIS IS A RESIDENTIAL SITE PLAN.

6.) THE INTENT OF THIS PLAN IS TO DEMONSTRATE THE AVAILABLE SIGHT DISTANCE FROM THE PROPOSED DRIVEWAY.

7.) EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY PERFORMED BY BERRY SURVEYING & ENGINEERING AND IS ENCLOSED IN THIS PACKAGE. EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

8.) THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS DATED 2016, CURRENT STANDARD PLANS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLAN VIEW WHITTIER STREET

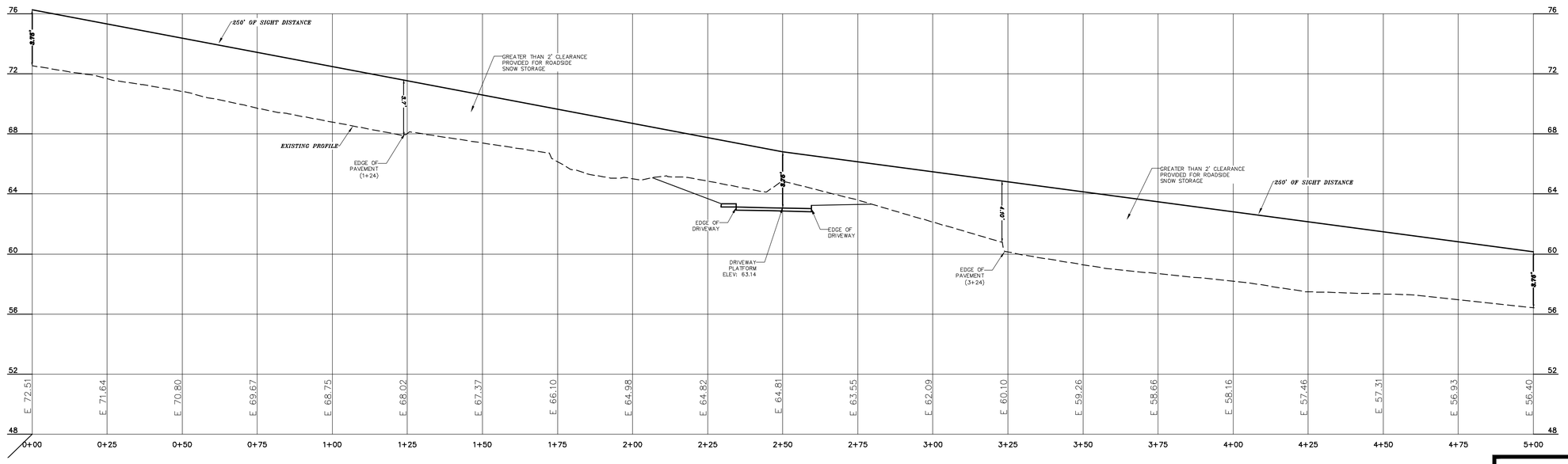
PROFILE VIEW SIGHT LINE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

VERTICAL SCALE: 1" = 4'



SD–1

DOVER PLANNING FILE #P21–37

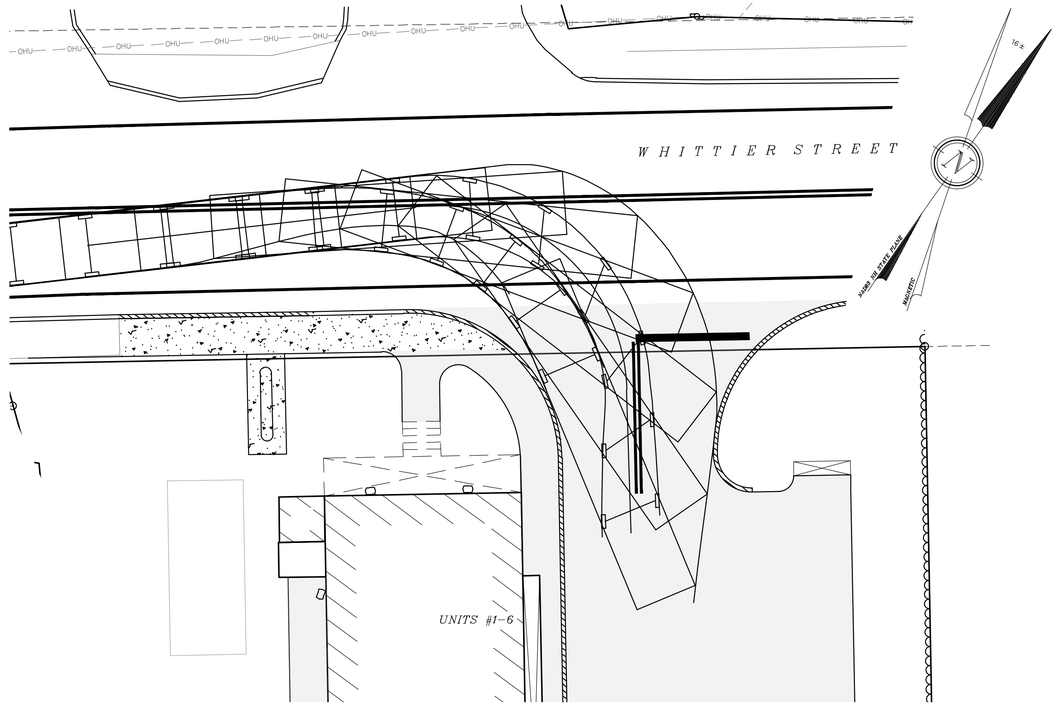
#	REVISION	DATE	DESCRIPTION
#1	REVISED PER DOVER TRC COMMENT	7–20–21	

SIGHT DISTANCE PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 13243
LICENSED PROFESSIONAL ENGINEER

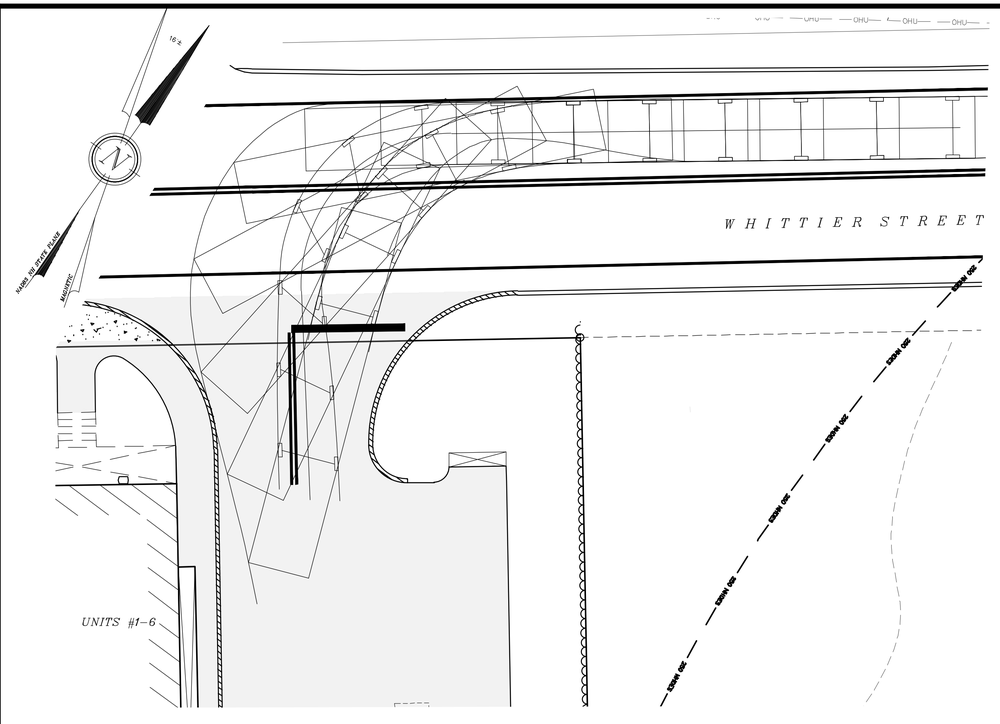


GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

TRUCK TURNING RIGHT INTO THE SITE FROM WEST

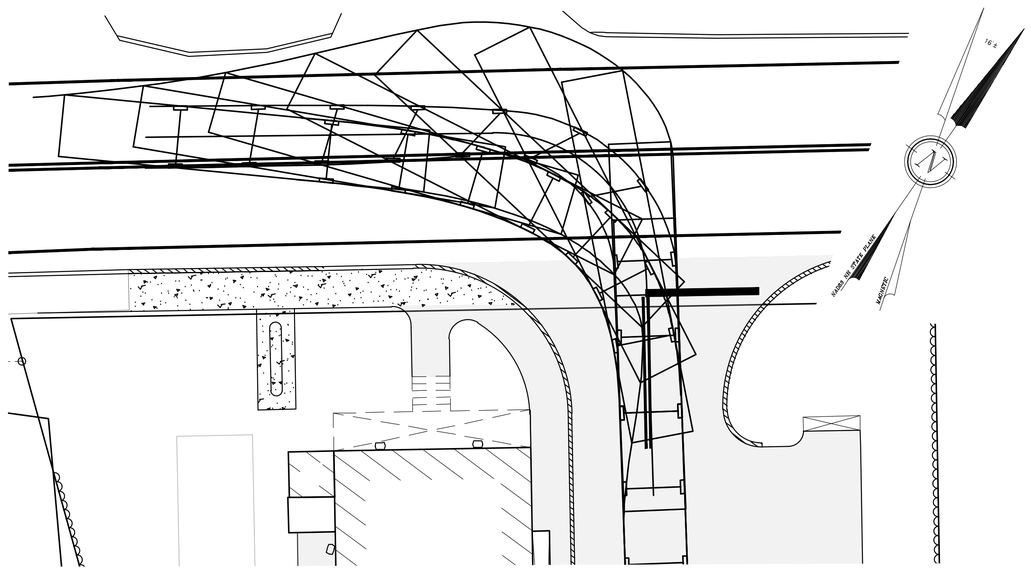


GRAPHIC SCALE

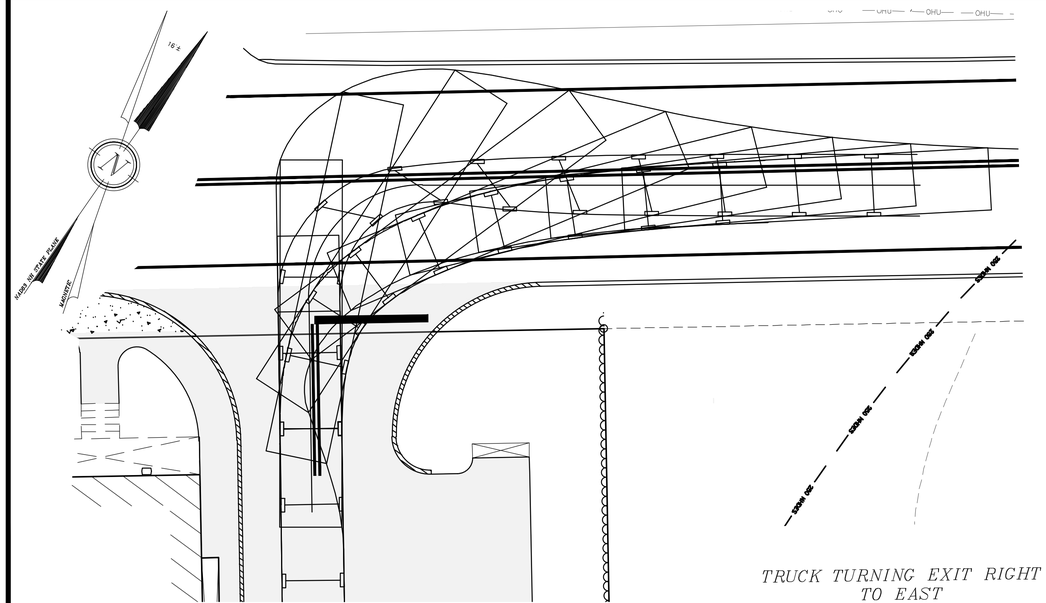
10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

TRUCK TURNING LEFT INTO THE SITE FROM EAST



TRUCK TURNING EXIT LEFT TO WEST



TRUCK TURNING EXIT RIGHT TO EAST

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

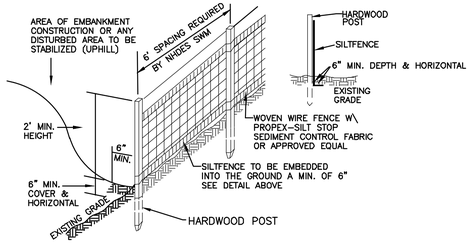
TRUCK TURNING ENTRANCE DOVER, NH FIRE T1 TEMPLATE
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14345 LICENSED PROFESSIONAL ENGINEER

E1



SILT FENCE CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES AND FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP MID AND BOTTOM SECTIONS AND BE EMBEDDED INTO GROUND A MINIMUM OF 8" THE FENCE POSTS SHALL BE A MINIMUM 48" LONG, SPACED A MAXIMUM 6' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND PROPERLY DISPOSED OF. SEE MAINTENANCE NOTE BELOW. REMOVAL OF SEDIMENT REQUIRED AT A DEPTH OF 6-INCHES.
4. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
5. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER.
6. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND RE-VEGETATED.
7. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, SILT FENCE, PAGE 90.

SILT FENCE MAINTENANCE

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH SIX-INCHES IN DEPTH.
4. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

SILT FENCE DETAIL
NOT TO SCALE

E2

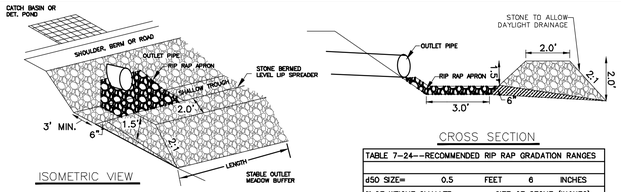
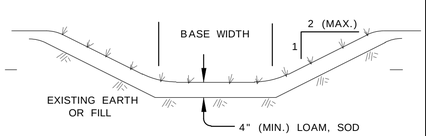


TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9		12
85%	8		11
50%	6		9
15%	2		3

1. CONSTRUCT THE LEVEL SPREADER LIP ON A 0% GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
2. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
3. THE ENTIRE LEVEL LIP AREA SHALL BE PROTECTED BY PLACING EXCELSIOR ENFORCER MATTING BENEATH THE STONE. EACH STRIP SHALL OVERLAP BY AT LEAST SIX INCHES.
4. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
5. MAINTENANCE: THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND THE DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHOULD BE REMOVED. IF STONE REMOVAL HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED.
6. REFERENCE IS MADE TO NHDES SWM VOL. 2, 4-6, STONE BERM LEVEL SPREADERS, PAGE 162

STONE BERM LEVEL SPREADER
NOT TO SCALE

E3



GRASS TREATMENT SWALE
NOT TO SCALE

INSPECT ANNUALLY FOR EROSION, SEDIMENT ACCUMULATIONS, VEGETATION LOSS, & INVASIVE SPECIES. REPAIR AS NECESSARY.

MOW GRASS ANNUALLY TO A DEPTH OF 4".

INSTALL STABILIZATION MATTING DURING CONSTRUCATION

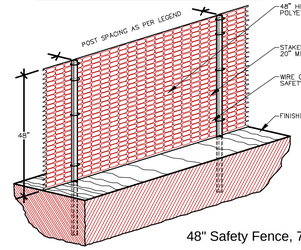
TO BE CONSTRUCTED IAW NH SWM #2 CHAPTER 4, #5 TREATMENT SWALES, PAGE 123.

E4

CONSTRUCTION SAFETY FENCE
NOT TO SCALE

LEGEND

SAF12	48" ORANGE FENCE, 12 FEET O.C.
SAF11	48" ORANGE FENCE, 11 FEET O.C..
SAF10	48" ORANGE FENCE, 10 FEET O.C.
SAF9	48" ORANGE FENCE, 9 FEET O.C.
SAF8	48" ORANGE FENCE, 8 FEET O.C..
SAF7	48" ORANGE FENCE, 7 FEET O.C.
SAF6	48" ORANGE FENCE, 6 FEET O.C.



48" Safety Fence, 72" T-Posts

1. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN.
2. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED WITH HIGH VISIBILITY FENCE AS PER PLAN.
3. WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
4. SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS.
5. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

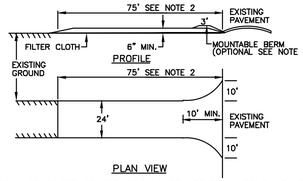
DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

EROSION & SEDIMENT CONTROL DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

E5

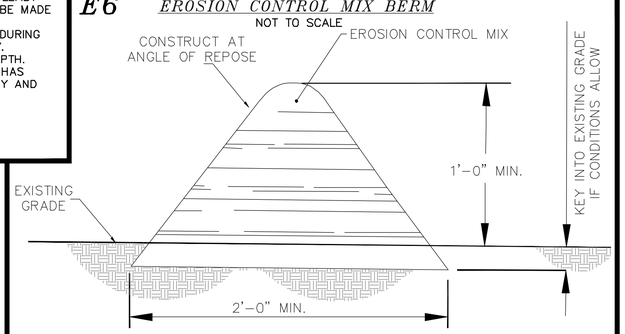
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY CONSTRUCTION EXIT, PAGE 124.

E6

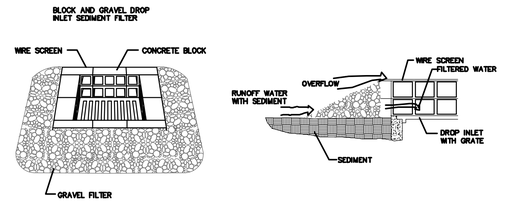
EROSION CONTROL MIX BERM
NOT TO SCALE



EROSION CONTROL MIX BERMS SHALL BE USED ONLY AS FOLLOWS:

1. BERMS SHALL BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY ABOVE THE BERM.
2. THE BERMS SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSLY AS POSSIBLE.
3. THE BERMS SHALL BE INSTALLED ON SLOPES LESS THAN 5%.
4. SUBJECT TO (E), BELOW, THE MIX SHALL HAVE AN ORGANIC PORTION BETWEEN 80 AND 100% DRY WEIGHT BASIS, AND BE FIBROUS AND ELONGATED SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, COMPOSED BARK, OR EQUIVALENT MANUFACTURED PRODUCTS.
5. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS SHALL NOT BE USED AS ORGANIC MATERIAL.
6. THE MIX SHALL NOT CONTAIN SILTS, CLAY, OR FINE SANDS.
7. THE MIX SHALL HAVE A PARTICLE SIZE BY WEIGHT OF 70 TO 85% PASSING A 6-INCH SCREEN AND A MAXIMUM OF 85% PASSING THE 0.75-INCH SCREEN.
8. THE MIX PH SHALL BE BETWEEN 5.0 AND 8.0.
9. THE BERM SHALL BE AT LEAST 12 INCHES HIGH AND AT LEAST 2 FEET WIDE.
10. TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, EROSION CONTROL MIX BERMS, PAGE 106.

E7



MAINTENANCE

ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER
NOT TO SCALE

TO BE USED IN ALL AREAS WHERE THERE WILL BE NO TRAFFIC.

TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY STORM DRAIN INLET PROTECTION, PAGE 118.

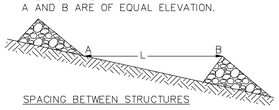
E8

TEMPORARY EROSION CONTROL MEASURES

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS SHALL BE RETURNED TO ORIGINAL GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 4" OF LOAM AND SEEDED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. (SEE SEED SPECIFICATIONS THIS SHEET)
4. ALL DISTURBED AREAS WILL BE RESTABILIZED WITHIN 45 DAYS. AT ANY ONE TIME, NO MORE THAN 5 ACRES, (217,800 Sq. Ft.) WILL BE DISTURBED.
5. SILT FENCES AND PERIMETER BARRIERS SHALL BE INSPECTED PERIODICALLY AND AFTER EVERY RAIN DURING THE LIFE OF THE PROJECT. ALL DAMAGED AREAS SHALL BE REPAIRED, SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
6. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
7. PER THE EPA CGP REQUIREMENTS THERE WILL BE REPORTS OF THE EROSION CONTROL INSPECTIONS IAW SWPPP PREPARED BY BS&E. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER 0.25" OR GREATER RAIN EVENT.
8. DITCHES, SWALES, AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
9. DO NOT TRAFFIC EXPOSED SOIL SURFACES WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEM.
10. DRIVEWAYS AND CUT AND FILL SPLOPES MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINAL GRADE.
11. STABILIZATION MEANS:
    - 11.1. A MINIMUM OF 85% OF VEGETATIVE COVER HAS BEEN ESTABLISHED.
    - 11.2. A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED, OR
    - 11.3. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
12. THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
13. THE NHDES STORMWATER MANUAL, IN THREE VOLUMES, DATED DECEMBER 2008, IS A PART OF THIS PLAN SET AND THE MORE RESTRICTIVE WILL GOVERN. (NH SWM)

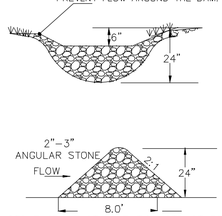
E9

STONE CHECK DAM
NOT TO SCALE

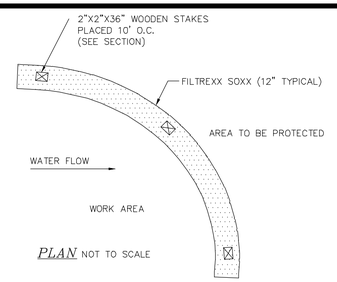


1.) CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH.
2.) THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM SHOULD BE LESS THEN ONE ACRE.
3.) THE MAXIMUM HEIGHT OF THE DAM SHOULD BE TWO FEET.
4.) THE CENTER OF THE DAM SHOULD BE AT LEAST SIX INCHES LOWER THAN THE OUTER EDGES.
5.) THE MAXIMUM SPACING IS AS SHOWN ON THE PROJECT SITE PLANS.
6.) CHECK DAMS WILL NOT BE USED IN A FLOWING STREAM.
7.) TEMPORARY CHECK DAMS WILL BE REMOVED ONCE THE SWALE OR DITCH IS DETERMINED STABLE.
8.) TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY CHECK DAMS, PAGE 114.

NOTE: KEY STONE INTO CHANNEL BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIUM OF 18" TO PREVENT FLOW AROUND THE DAM.

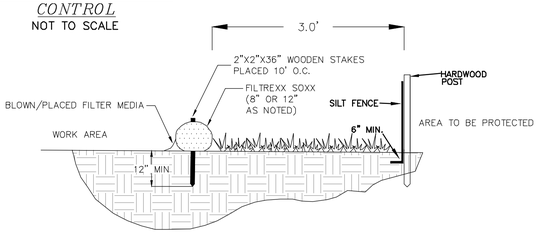


E10



PLAN NOT TO SCALE

FILTREXX SEDIMENT CONTROL
NOT TO SCALE



NOTES

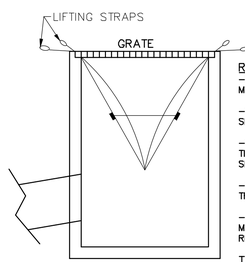
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIRMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. SILTSOXX MAY BE USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
5. SILTSOXX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIRMENTS OF THE SPECIFIC APPLICATION.
6. FILTREXX SOXX IS A REGISTERED TRADEMARK OF FILTREXXIN TERNATIONAL, LLC.
7. SILT FENCE IS NOT A SUBSTITUTION FOR SILT SOXX AND ANY EQUAL SUBSTITUTION TO BE APPROVED.
8. TO BE CONSTRUCTED IAW FILTREXX, SECTION 1:EROSION & SEDIMENT CONTROL (PAGE 323) - CONSTRUCTION ACTIVITIES, SWPPP CUT SHEET: FILTREXX SEDIMENT CONTROL

Filtrexx International, LLC
35481 Grafton Eastern Rd | Grafton, Oh 44044
440-926-2607 | fax: 440-926-4021
WWW.FILTREXX.COM
OR APPROVED EQUAL

NOTE: FOR AREAS REQUIRING DOUBLE PERIMETER CONTROL WITHIN 50' OF JURISDICTIONAL WETLANDS AND NOT FOR ALL SILT SOXX APPLICATIONS. THIS DUPLICATION MAY BE SPECIFIED AS 12" SILT SOXX OR ORANGE CONSTRUCTION FENCE AS NOTED.

SECTION NOT TO SCALE

E11



RECOMMENDED MAINTENANCE SCHEDULE
-EACH SILTSACK SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT, AND MUST BE MAINTAINED.

-IF THERE HAVE BEEN NO MAJOR EVENTS, SILTSACK SHOULD BE INSPECTED EVERY 2-3 WEEKS.

-THE RESTRAINT CORD SHOULD BE VISIBLE AT ALL TIMES. IF CORD IS COVERED WITH SEDIMENT, THE SILTSACK SHOULD BE EMPTIED.

-TO BE USED IN ALL AREAS WHERE THERE WILL BE TRAFFIC.

- ARE SUBJECT TO DAMAGE BY SNOW PLOWS, AND MUST BE INSPECTED AFTER ANY SNOW EVENT AND REPLACED AS REQUIRED.

TO BE CONSTRUCTED IAW NH SWM #3 4-2 SEDIMENT CONTROL PRACTICES, TEMPORARY STORM DRAIN INLET PROTECTION, PAGE 118.

SILTSACK DETAIL
NOT TO SCALE

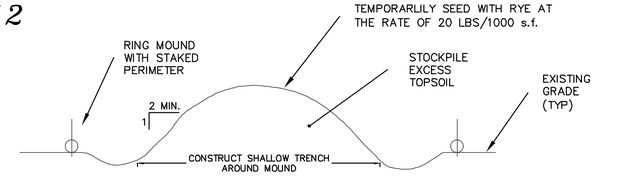
E-101

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14295
LICENSED PROFESSIONAL ENGINEER

E12



TO BE CONSTRUCTED IAW NH SWM #3 4-1 EROSION CONTROL PRACTICES, SOIL STOCKPILE PRACTICES, PAGE 46.

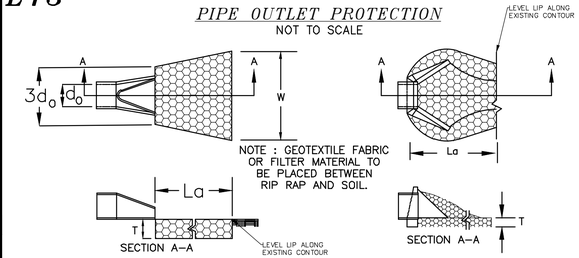
TOPSOIL STOCKPILE MOUND

NOT TO SCALE

E13

PIPE OUTLET PROTECTION

NOT TO SCALE



PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

PIPE OUTLET TO WELL-DEFINED CHANNEL

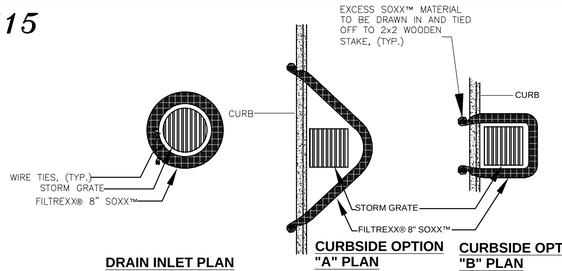
PIPE OUTLET PROTECTION CONSTRUCTION SPECIFICATIONS

1. THE SUB GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS. SPECIFIED GRADATION.
2. THE ROCK OR GRAVEL USED FOR FILTER OF RIP RAP SHALL CONFORM TO NHDOT SECTION 583.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP 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 REPAIRS OR 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.
5. TO BE CONSTRUCTED IAW NH SWM #2 4-6 CONVEYANCE PRACTICES, 6. OUTLET PROTECTION, PAGE 172.

E14

TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES			
d50 SIZE=	0.5	FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9		12
85%	8		11
50%	6		9
15%	2		3

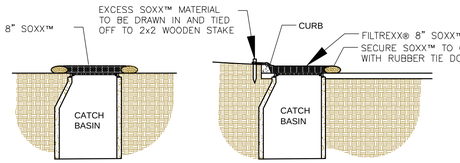
E15



DRAIN INLET PLAN

CURBSIDE OPTION "A" PLAN

CURBSIDE OPTION "B" PLAN



DRAIN INLET SECTION

CURBSIDE SECTION

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

FILTREXX INLET PROTECTION

NOT TO SCALE

E16

NOTE: THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

NOTE: Temporary seed mix for stabilization of turf shall be winter rye or oats at a rate of 2.5 lbs. per 1000 s.f. and shall be placed prior to OCT. 15, if permanent seeding not yet complete.

SEEDING GUIDE

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	FAIR	GOOD	GOOD	EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	F	FAIR	EXCELLENT	EXCELLENT	2/
	G	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH-PM-.24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE 7-36.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

RECOMMENDED *

SEEDING RATES

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH	15	0.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
C. TALL FESCUE	24	0.55
CREEPING RED FESCUE	24	0.55
BIRDS FOOT TREFOIL	REMOVED	REMOVED
TOTAL	48	1.10
D. TALL FESCUE	30	0.45
FLAT PEA	20	0.75
TOTAL	50	1.20
E. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

CONSERVATION MIX	POUNDS PER ACRE	POUNDS PER 1,000 S.F.
TALL FESCUE (35%)	15	0.35
CREEPING RED FESCUE (25%)	15	0.35
ANNUAL RYEGRASS (12%)	5	0.12
PERENNIAL RYEGRASS (10%)	5	0.12
KENTUCKY BLUEGRASS (10%)	15	0.35
WHITE CLOVER (3%)	7	0.16

SEEDING SPECIFICATIONS

1. GRADING AND SHAPING
   A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED.
   WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. SEEDBED PREPARATION
   A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEED BED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. ESTABLISHING A STAND
   A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING
   AND INCORPORATED INTO THE SOIL 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, 2 TONS PER ACRE OR 100LBS. PER 1,000 SQ.FT.
   NITROGEN(N), 50LBS. PER ACRE OR 1.1LBS. PER 1,000 SQ.FT.
   PHOSPHATE(P2O5), 100LBS. PER ACRE OR 2.2LBS. PER 1,000 SQ.FT.
   POTASH(K2O), 100LBS. PER ACRE OR 2.2LBS. PER 1,000 SQ.FT.
   (NOTE: THIS IS THE EQUIVALENT OF 500LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000LBS. PER ACRE OF 5-10-10.)
   B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
   C. REFER TO TABLE(G-E1 THIS SHEET) FOR APPROPRIATE SEED MIXTURES AND TABLE(H-E1 THIS SHEET) FOR RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT TREFOIL, AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT.
   D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.
4. MULCH
   A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
   B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90LBS PER 1000 S.F.
5. MAINTENANCE TO ESTABLISH A STAND
   A. PLANTED AREA SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
   B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIAL STAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
   C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.
6. TO BE CONSTRUCTED IAW NH SWM #3 4-1 EROSION CONTROL PRACTICES, PERMANENT VEGETATION, PAGE 60.

E17

CONSTRUCTION SEQUENCE:

1.) CUT AND REMOVE TREES IN CONSTRUCTION AREA ONLY AS REQUIRED, RELOCATE ANY PROJECT T.B.M.

2.) CONSTRUCT AND/OR INSTALL TEMPORARY AND PERMANENT SEDIMENT EROSION AND DETENTION CONTROL FACILITIES AS SPECIFIED. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SOIL LAND DISTURBANCE AND MUST BE REVIEWED AND APPROVED BY THE COMMUNITY SERVICES DEPARTMENT.

3.) EROSION, SEDIMENT AND DETENTION CONTROL FACILITY SHALL BE INSTALLED & STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.TEMPORARY DIVERSIONS MAY BE REQUIRED. POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES MUST BE INITIATED AND STABILIZED EARLY IN THE PROCESS.

4.) CLEAR, CUT AND DISPOSE OF DEBRIS IN APPROVED FACILITY

5.) CONSTRUCT TEMPORARY CULVERTS AS REQUIRED, OR DIRECTED

6.) CONSTRUCT ROADWAYS FOR ACCESS TO DESIRED CONSTRUCTION AREAS. ALL ROADS SHALL BE STABILIZED IMMEDIATELY

7.) START BUILDING CONSTRUCTION

8.) INSTALL PIPE AND CONSTRUCTION ASSOCIATED APPURTENANCES AS REQUIRED OR DIRECTED. INSTALL RAIN GARDENS. ALL DISTURBED AREAS SHALL STABILIZED IMMEDIATELY AFTER GRADING.

9.) BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES AND DISTURBED AREAS SHALL BE SEEDED OR MULCHED AS REQUIRED, OR DIRECTED. NO AREA IS ALLOWED TO BE DISTURBED FOR A LENGTH OF TIME THAT EXCEEDS 60 DAYS BEFORE BEING STABILIZED, DAILY, OR AS REQUIRED. ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADES. ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADES.

10.) CONSTRUCT TEMPORARY BERMS, DRAINS DITCHES, SILT FENCES, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.

11.) INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. ALL SWPPP INSPECTIONS MUST BE CONDUCTED BY A QUALIFIED PROFESSIONAL SUCH AS A PROFESSIONAL ENGINEER (PE), A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), A CERTIFIED EROSION SEDIMENT AND STORM WATER INSPECTOR (CESSW), OR A CERTIFIED PROFESSIONAL IN STORM WATER QUALITY (CPSWQ). INSPECTION REPORTS SHALL BE SUBMITTED TO THE COMMUNITY SERVICES DEPARTMENT.

12.) COMPLETE PERMANENT SEEDING AND LANDSCAPING.

13.) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE ESTABLISHED THEMSELVES AND SITE IMPROVEMENTS ARE COMPLETE.

14.) SMOOTH AND REVEGETATE ALL DISTURBED AREAS.

15.) FINISH PAVING ALL ROADWAYS.

E18

DEFINITION OF STABLE:

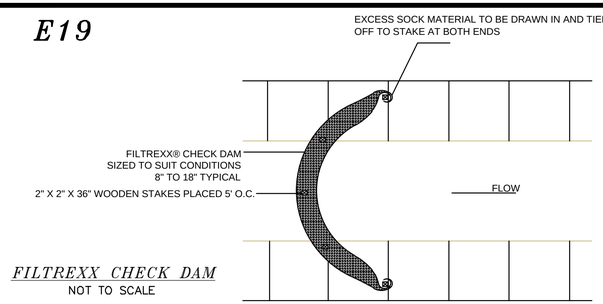
PER ENV-WQ 1500 ALTERATION OF TERRAIN

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
2. A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED..
3. A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED.
4. OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ADDITION STABILIZATION NOTES:

5. HAY MULCH OR OTHER APPROVED METHODS SHALL BE USED TO CONTROL EROSION OF NEWLY GRADED AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS AFTER THEIR CONSTRUCTION.
6. DISTURBED SOIL AREAS SHALL BE EITHER TEMPORARILY OR PERMANENTLY STABILIZED. IN AREAS WHERE FINAL GRADING HAS NOT OCCURRED, TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN SEVEN (7) CALENDAR DAYS FOR EXPOSED SOIL AREAS THAT ARE WITHIN ONE HUNDRED (100) FEET OF A SURFACE WATER BODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN THREE (3) CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.

E19

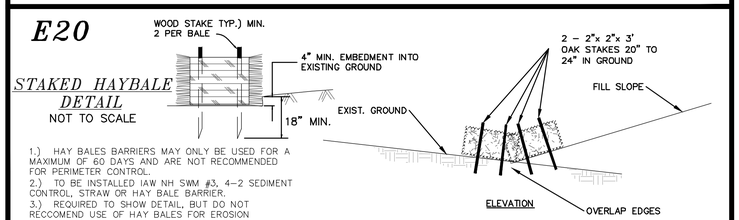


FILTREXX CHECK DAM

NOT TO SCALE

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. CHECK DAM SHOULD BE USED IN AREAS THAT DRAIN 1 ACRE OR LESS.
3. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
4. CHECK DAM CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
5. CONTRACTOR IS REQUIRED TO BE A FILTREXX CERTIFIED™ INSTALLER.

E20

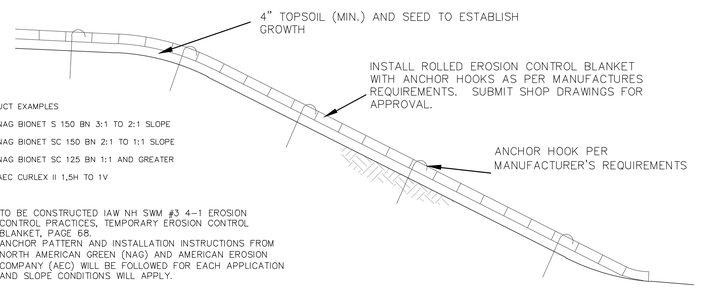


STAKED HAYBALE DETAIL

NOT TO SCALE

1.) HAY BALES BARRIERS MAY ONLY BE USED FOR A MAXIMUM OF 60 DAYS AND ARE NOT RECOMMENDED FOR PERIMETER CONTROL.
2.) TO BE INSTALLED IAW NH SWM #3, 4-2 SEDIMENT CONTROL, STRAW OR HAY BALE BARRIER.
3.) REQUIRED TO SHOW DETAIL, BUT DO NOT RECCOMEND USE OF HAY BALES FOR EROSION CONTROL.

E21



PRODUCT EXAMPLES

1.) NAG BIONET S 150 BN 3:1 TO 2:1 SLOPE
2.) NAG BIONET SC 150 BN 2:1 TO 1:1 SLOPE
3.) NAG BIONET SC 125 BN 1:1 AND GREATER
4.) AEC CURLEX II 1,5H TO 1V

1. TO BE CONSTRUCTED IAW NH SWM #3 4-1 EROSION CONTROL PRACTICES, TEMPORARY EROSION CONTROL BLANKET, PAGE 68.
2. ANCHOR PATTERN AND INSTALLATION INSTRUCTIONS FROM NORTH AMERICAN GREEN (NAG) AND AMERICAN EROSION COMPANY (AEC) WILL BE FOLLOWED FOR EACH APPLICATION AND SLOPE CONDITIONS WILL APPLY.

ROLLED EROSION CONTROL BLANKET (RECB) SLOPE STABILIZATION DETAIL

NOT TO SCALE

E22

WINTER STABILIZATION NOTES

1. ALL DISTURBED AREAS THAT DO NOT HAVE AT LEAST 85% VEGETATIVE COVERAGE PRIOR TO OCTOBER 15TH SHALL BE STABILIZED BY APPLYING MULCH AT A RATE OF 3-4 TONS PER ACRE. ALL SIDE SLOPES, STEEPER THAN 4:1, THAT ARE NOT DIRECTED TO SWALES OR DETENTION BASINS, SHALL BE LINED WITH BIODEGRADABLE/PHOTODEGRADABLE "JUTE MATTING" (EXCELSIOR'S CURLEX II OR EQUAL). ALL OTHER SLOPES SHALL BE MULCHED AND TACKED AT A RATE OF 3-4 TONS PER ACRE. THE APPLICATION OF MULCH AND/OR JUTE MATTING SHALL NOT OCCUR OVER EXISTING SNOW COVER. IF THE SITE IS ACTIVE AFTER OCTOBER 15TH, ANY SNOW THAT ACCUMULATES ON DISTURBED AREAS SHALL BE REMOVED. PRIOR TO SPRING THAW ALL AREAS WILL BE STABILIZED, AS DIRECTED ABOVE.

2. ALL SWALES THAT DO NOT HAVE FULLY ESTABLISHED VEGETATION SHALL BE EITHER LINED WITH TEMPORARY JUTE MATTING OR TEMPORARY STONE CHECK DAMS (APPROPRIATELY SPACED). STONE CHECK DAMS WILL BE MAINTAINED THROUGHOUT THE WINTER MONTHS. IF THE SWALES ARE TO BE MATTED WITH PERMANENT LINERS OR RIPRAP WITH ENGINEERING FABRIC, THIS SHALL BE COMPLETED PRIOR TO WINTER SHUTDOWN OR AS SOON AS THEY ARE PROPERLY GRADED AND SHAPED.

3. PRIOR TO OCT. 15TH ALL ROADWAY AND PARKING AREAS SHALL BE BROUGHT UP TO AND THROUGH THE BANK RUN GRAVEL APPLICATION. IF THESE AREAS' ELEVATIONS ARE PROPOSED TO REMAIN BELOW THE PROPOSED SUBGRADE ELEVATION, THE SUBGRADE MATERIAL SHALL BE ROUGHLY CROWNED AND A 3" LAYER OF CRUSHED GRAVEL SHALL BE PLACED AND COMPACTED. THIS WILL ALLOW THE SUBGRADE TO SHED RUNOFF AND WILL REDUCE ROADWAY EROSION. THIS CRUSHED GRAVEL DOES NOT HAVE TO CONFORM TO NH DOT 304.3, BUT SHALL HAVE BETWEEN 15-25% PASSING THE #200 SIEVE AND THE LARGEST STONE SIZE SHALL BE 2". IF THE SITE IS ACTIVE AFTER OCTOBER 15TH, ANY ACCUMULATED SNOW SHALL BE REMOVED FROM ALL ROADWAY AND PARKING AREAS.

4. AFTER OCTOBER 15TH, THE END OF NEW HAMPSHIRE'S AVERAGE GROWING SEASON, NO ADDITIONAL LOAM SHALL BE SPREAD ON SIDE SLOPES AND SWALES. THE STOCKPILES THAT WILL BE LEFT UNDISTURBED UNTIL SPRING SHALL BE SEEDED BY THIS DATE. AFTER OCTOBER 15TH, ANY NEW OR DISTURBED PILES SHALL BE MULCHED AT A RATE OF 3-4 TONS PER ACRE. ALL STOCKPILES THAT WILL REMAIN THROUGHOUT THE WINTER SHALL BE SURROUNDED WITH SILT FENCING.

E-102

DOVER PLANNING FILE #P21-37

#	REVISION	DATE	DESCRIPTION
1		7-20-21	REVISED PER DOVER TRC COMMENT

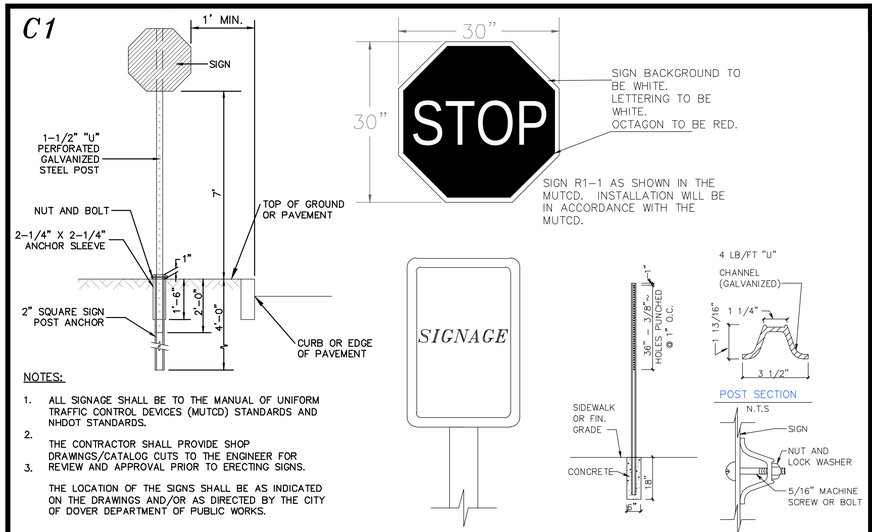
EROSION & SEDIMENT CONTROL PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14024
LICENSED PROFESSIONAL ENGINEER

C1



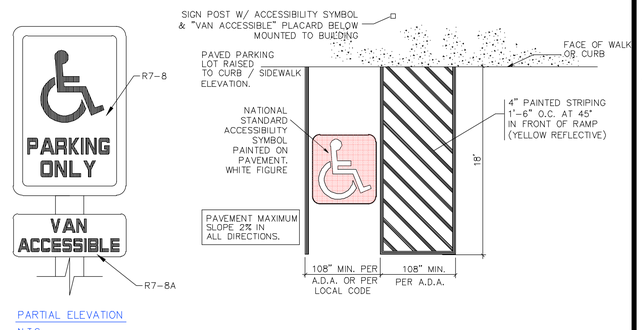
NOTES:

1. ALL SIGNAGE SHALL BE TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND NHDOT STANDARDS.
2. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS/CATALOG CUTS TO THE ENGINEER FOR
3. REVIEW AND APPROVAL PRIOR TO ERECTING SIGNS.

THE LOCATION OF THE SIGNS SHALL BE AS INDICATED ON THE DRAWINGS AND/OR AS DIRECTED BY THE CITY OF DOVER DEPARTMENT OF PUBLIC WORKS.

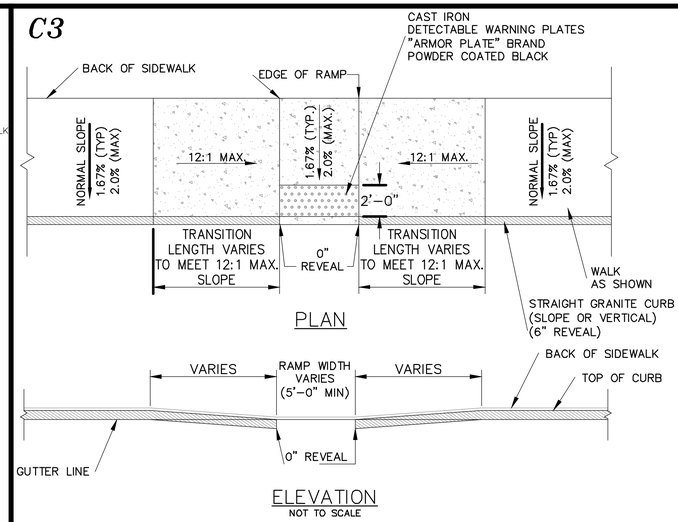
TYPICAL SIGN POST
NOT TO SCALE

C2



PARKING STALL SIGNAGE FOR THE PHYSICALLY CHALLENGED
NOT TO SCALE

C3



TYPICAL DETAIL FOR WHEELCHAIR RAMP
NOT TO SCALE

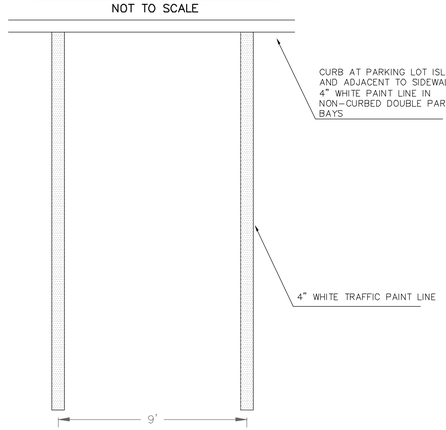
DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

C4

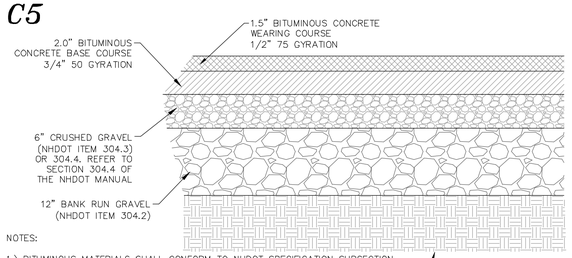
PARKING SPACE DETAIL
NOT TO SCALE



NOTES:

1.) PROVIDE TWO COATS OF PAINT ON ALL PARKING LINES.
2.) SEE PROPOSED SITE PLANS FOR LOCATION OF PARKING SPACES.
3.) PAINTED SPACES ONLY WHERE MARKED ON SITE PLAN

C5



NOTES:

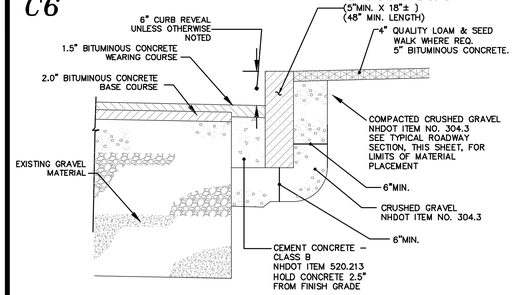
1.) BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SUBSECTION 401.3.6.

2.) PAVEMENT BASE COURSE AGGEGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.3 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.

3.) PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOFROLLED AND COMPABED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY. FOR NEW CONSTRUCTION AREAS ONLY. IN EXISTING PAVEMENT AREAS THE CONTRACTOR IS TO ENSURE THE BASE MATERIAL IS SUITABLE TO THE OWNER FOR RE-PAVING

BITUMINOUS CONCRETE PAVEMENT SECTION
NOT TO SCALE

C6

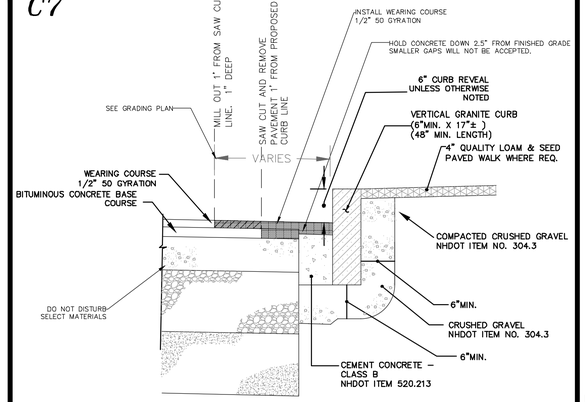


GENERAL NOTE:

1.) TO BE USED IN PLACE OF THE CONCRETE WALK AND INTEGRATED CURB AT THE OWNERS DISCRETION

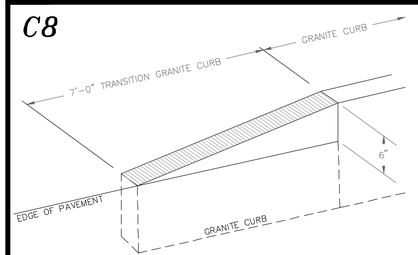
VERTICAL GRANITE CURB DETAIL ON SITE
NOT TO SCALE

C7



VERTICAL GRANITE CURB DETAIL
NOT TO SCALE

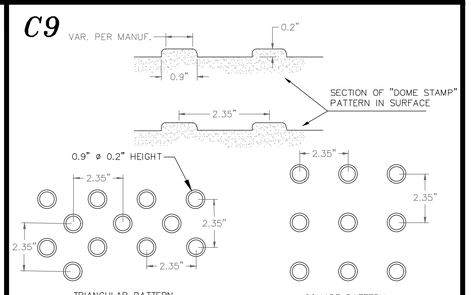
C8



CURB TRANSITION DETAIL
NOT TO SCALE

TO BE USED FOR TRANSITION FROM GRANITE CURB TO EDGE OF PAVEMENT

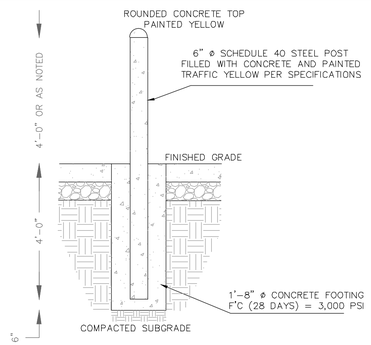
C9



EITHER PATTERN IS ACCEPTABLE

DETECTABLE WARNING SURFACE
NOT TO SCALE

C10



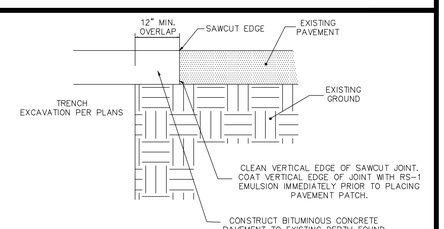
BOLLARD DETAIL
NOT TO SCALE

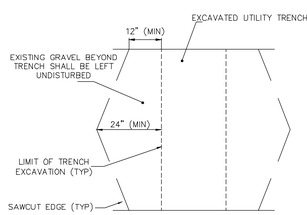
DETAIL ONLY REQUIRED IF EVERSOURCE REQUIRES BOLLARDS AROUND TRANSFORMERS

C11

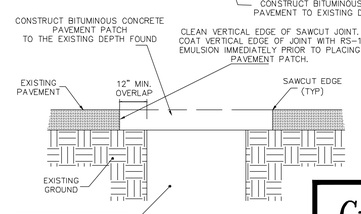
TYPICAL TRENCH PATCH
NOT TO SCALE

NOTES
1. MACHINE CUT EXISTING PAVEMENT.
2. ALL TEMPORARY, DAMAGED, OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.





PLAN



SECTION

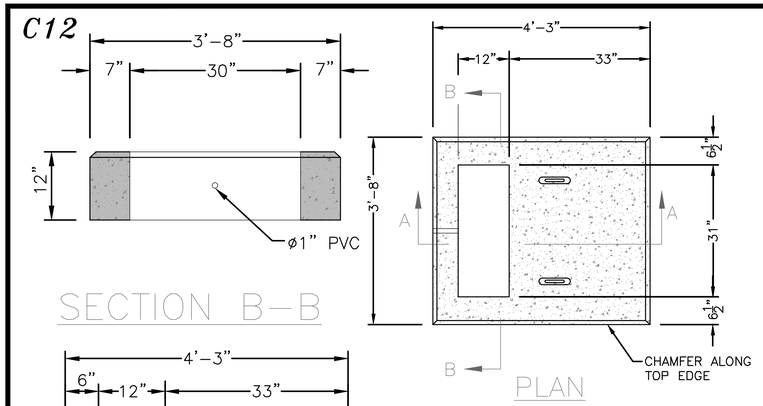
C-101

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14240
LICENSED PROFESSIONAL ENGINEER

C12

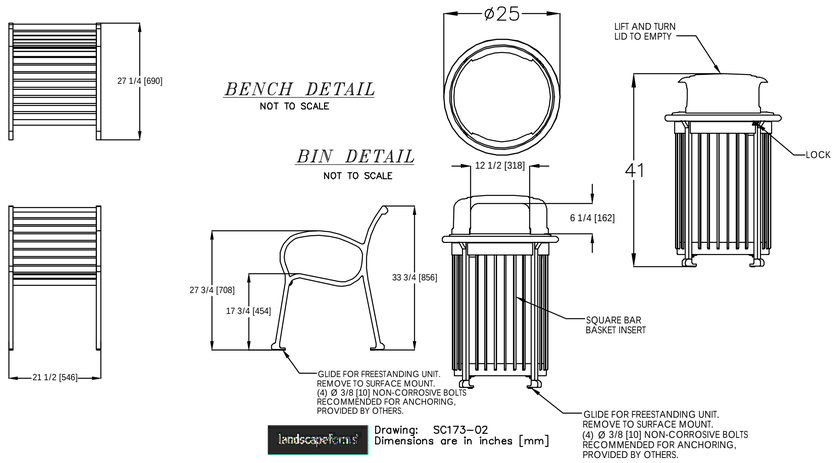


NOTES:
1. CONCRETE MINIMUM STRENGTH 4,000 PSI AFTER 28 DAYS
2. REINFORCEMENT STEEL CONFORMS TO ASTM A615 GRADE 60 #6 REBAR.
3. MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS.
4. MUST BE A SHEA CONCRETE PRODUCT OR EQUAL.

TRANSFORMER AND PAD DETAIL
NOT TO SCALE

C13

Scarborough™ Bench, 24" Backed, with Horizontal Strap Seat
Product Drawing
www.landscapeforms.com
Date: 5/19/2010
Ph: 800.521.2546



BENCH DETAIL
NOT TO SCALE

BIN DETAIL
NOT TO SCALE

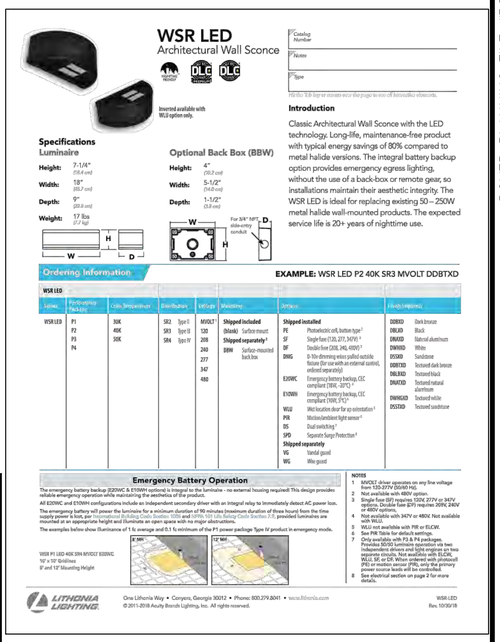
landscapeforms Drawing: SC173-02
Dimensions are in inches [mm]

Scarborough™ Bench, 24" Backed, with Horizontal Strap Seat
landscapeforms Drawing: SC173-02
Dimensions are in inches [mm]

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC. ©2013 LANDSCAPE FORMS, INC. ALL RIGHTS RESERVED.

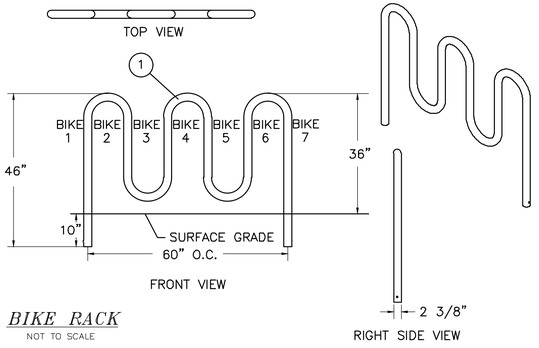
C14

LAMP "A" MOUNTED 8' ON BUILDING



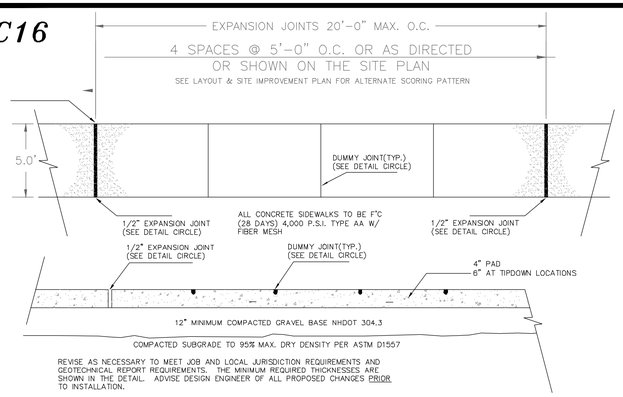
C15

MATERIALS LIST
(1) .TUBING – ø 2 3/8" x .154" Wall Steel Tubing



BIKE RACK
NOT TO SCALE

C16



NOTES:
1.) PROVIDE EXPANSION JOINT MATERIAL WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER PLUS SEALANT FLUSH WITH ADJACENT CONCRETE SURFACE.

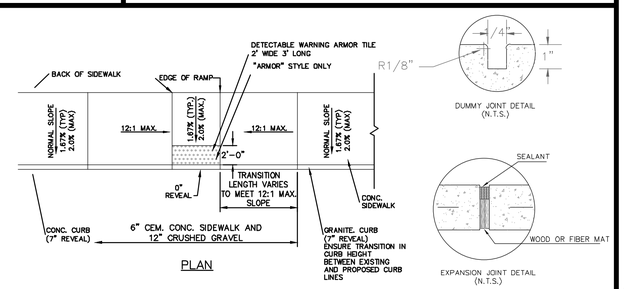
2.) SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.

3.) PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.

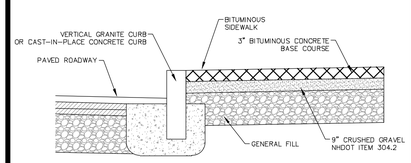
4.) CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK PITCH.

5.) WHENEVER POSSIBLE, CONSTRUCT THE TRANSITION SLOPE FROM THE CURB RAMP AND FLARE SIDES TO ADJOINING SURFACES WITH A GRADUAL CURVE RATHER THAN AN ABRUPT ANGLE.

CONCRETE SIDEWALK
NOT TO SCALE

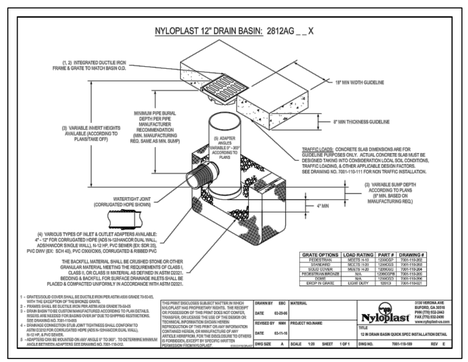


C17

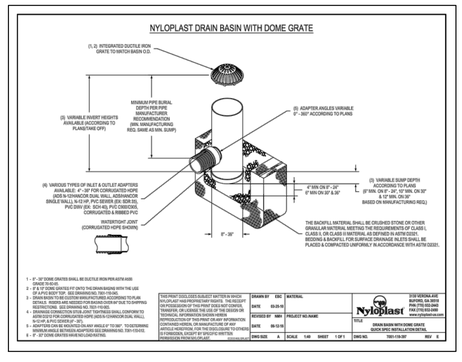


BITUMINOUS SIDEWALK
NOT TO SCALE

C18



12" NYLOPLAST DRAIN BASIN
NOT TO SCALE



NYLOPLAST DOME GRATE
NOT TO SCALE

C19

DOVER PLANNING FILE #P21-37

#	REVISION	DATE	DESCRIPTION
#1		7-20-21	REVISED PER DOVER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14243
LICENSED PROFESSIONAL ENGINEER

C-102

C21

affinity led lighting

AMERICAN BUILT

ASSEMBLED WITH PRIDE BY VETERANS IN DOVER, NEW HAMPSHIRE

S800 Series Roadway Luminaire

LED Street & Area Lighting

The S800 Series distills the benefits of combining industry-leading components and LED technology with pragmatic design and American-Built reliability. The outstanding photometric performance results in sites with excellent uniformity, allowing greater pole spacing and lower power density. The S800 Series is the best alternative available for traditional street and area lighting with quick payback and improved performance.



Standard Features

- Night Sky Friendly (zero uplight) with integrated backlight-shield
- Reduced-glare optical lenses standard in Type II, Type III and Type V photometric distributions
- Available in 3000K, 4000K and 5000K Correlated Color Temperatures
- Tool-Less Entry with Connect-Safe™ for Lineman Friendly installation
- Die-Cast Aluminum Housing and Housing Door with Ultra-durable powder-coat finish that resists corrosion, abrasion and UV-degradation
- Integrated Tilt Adjustment ±5°
- Built-in Bird-Guard
- Input Voltage: 120-277V or 347-480V, 50/60Hz
- Ambient Operating Temperatures -40°C to +50°C
- Smart Ready with 7-pin Photocontrol Receptacle (per ANSI C136.41) and 0-10V Dimming Capability
- LED Lifetime Rating >120,000 hours L70 @55°C (per IESNA TM-21-11)
- 10-Year Limited Warranty

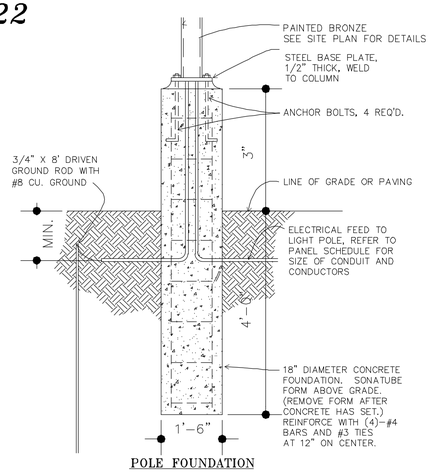
Product Specifications

EXAMPLE: S80X-XX0W-XXK-TX-10-XX-M ⟹ S808-65W-40K-T2-10-GR-M

MODEL	POWER	COLOR	DISTRIBUTION	CONTROL OPTION	FINISH	DRIVER
S800	35W 40W 65W	30K: 3000K 40K: 4000K 50K: 5000K	T2: Type II T3: Type III T5: Type V	10: 0-10V Dimming	BR: Bronze BL: Black GR: Gray WH: White	M: Meanwell
S801	80W 100W	57K: 5700K				

EVERSOURCE POLE MOUNTED LAMP

C22



LIGHT BASE DETAIL

NOT TO SCALE

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

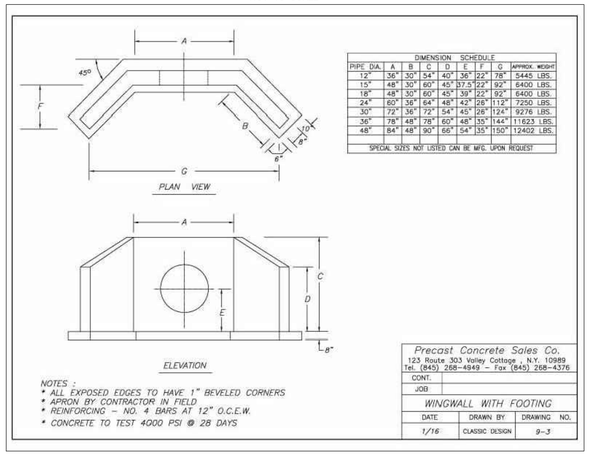
SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED
PROFESSIONAL ENGINEER

C-103

D1 HEADWALL (CONCRETE)

NOT TO SCALE



DIMENSION SCHEDULE								
PIPE DIA.	A	B	G	D	E	F	G	APPROX. WEIGHT
12"	36"	30"	54"	40"	36"	22"	78"	5445 LBS.
15"	48"	30"	60"	45°	37.5"	22"	92"	6400 LBS.
18"	48"	30"	60"	45°	39"	22"	92"	6400 LBS.
24"	60"	36"	64"	48"	42"	28"	112"	7250 LBS.
30"	72"	36"	72"	54"	45"	26"	124"	9276 LBS.
36"	78"	48"	78"	60"	48"	35"	144"	11623 LBS.
48"	84"	48"	90"	66"	54"	35"	150"	12402 LBS.

SPECIAL SIZES NOT LISTED CAN BE MFG. UPON REQUEST

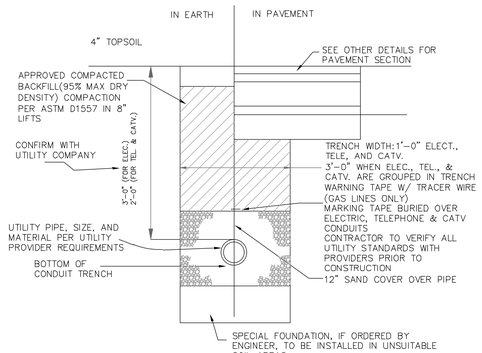
NOTES :
* ALL EXPOSED EDGES TO HAVE 1" BEVELED CORNERS
* APRON BY CONTRACTOR IN FIELD
* REINFORCING - NO. 4 BARS AT 12" O.C.E.W.
* CONCRETE TO TEST 4000 PSI @ 28 DAYS

Precast Concrete Sales Co.
123 Route 303 Valley Cottage, N.Y. 10989
Tel. (845) 268-4949 - Fax (845) 268-4376

CONT.
JOB
WINGWALL WITH FOOTING

DATE	DRAWN BY:	DRAWING NO.
1/16	CLASSIC DESIGN	9-3

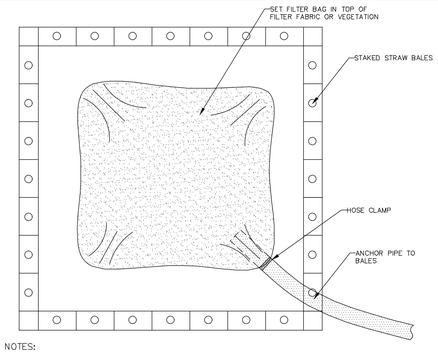
D2



ELECTRICAL, TELEPHONE, CABLE TRENCH

NOT TO SCALE

D3



NOTES:

1.) ENSURE DISCHARGE POINT IS STABILIZED WITH VEGETATION OR PROPER EROSION AND SEDIMENT CONTROL PRACTICES.

2.) USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.

3.) TO BE PLACED AT AN UPLAND LOCATION THAT WILL ALLOW WATER TO DRAIN INTO THE GROUND.

4.) SIZE OF DE-WATERING AREA TO BE 10' X 10', ADJUST SIZE DEPENDING ON VOLUME AND USE.

5.) ADDITIONAL BALES MAY BE USED TO INCREASE RETENTION AND FILTERING.

DE-WATERING BASIN

NOT TO SCALE

D4 ANGLE GRATE

NOT TO SCALE

NOTE:
MUST BE HAALA INDUSTRIES INC. OR EQUAL.

Angle Grates For Manholes



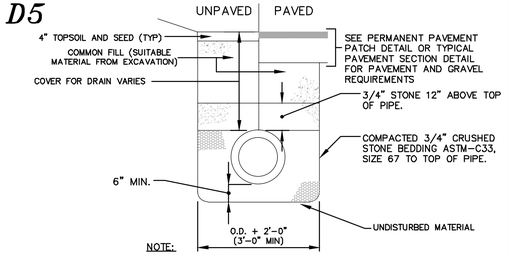
AG0808-58
Part No. AG0808-58

Save Trees

Angle Grates are designed to cover inlet orifices and prevent small to medium debris from passing through. The top angled design helps to minimize the amount of debris that settles on top after the water receeds. All grates are made from plate for a clean and smooth contact surface.

- Plate design for a clean appearance
- Standard 2" openings (other sizes can be made)
- Angled top/front plate to maximize debris deflection
- Mounting flanges on 3 sides allows grate to be mounted at floor level inverts
- Galvanized steel construction. Can be made from aluminum or stainless steel.

D5



NOTE:

PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

TYPICAL DRAIN PIPE TRENCH

NOT TO SCALE

D6

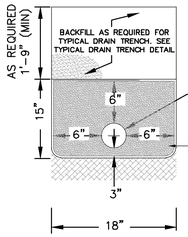
TYPICAL CROSS SECTION

NOTES:

CROWN OF 6" SUBDRAIN PIPES TO MATCH CROWN OF DRAIN PIPES IN CATCH BASINS

SUBDRAIN TO BE INSTALLED AS INDICATED ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER.

SHORING AND STABILIZING OF TRENCH SIDEWALLS DURING EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY TRENCH EXCAVATION BEYOND THE LIMITS OF PAY EXCAVATION INDICATED.



SUBDRAIN PIPE TO BE ADS N-12 PERFORATED (CORRUGATED EXTERIOR / SMOOTH INTERIOR) MEETING AASHTO M-252 WITH FILTER SOCK

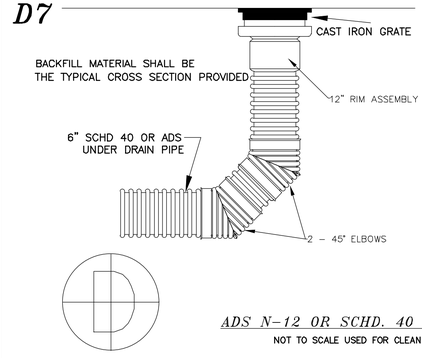
PIPE SIZE PER SITE PLANS (PLACE HOLES DOWN)

NOTE: SUBDRAIN TO BE LAID WITH SLOPE OF FINISHED GROUND

SUBDRAIN DETAIL TYPICAL

NOT TO SCALE

D7



ADS N-12 OR SCHD. 40 INLINE DRAIN

NOT TO SCALE USED FOR CLEANOUTS

12" CAST IRON GRATE

NOT TO SCALE

CASTINGS ARE RATED FOR H20 WHEEL LOAD TRAFFIC

PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT

D8 CONE GRATE

NOT TO SCALE

MUST BE HAALA INDUSTRIES INC. OR EQUAL.

Cone Grates Top Mount



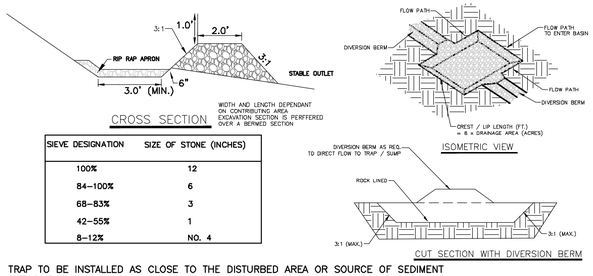
CG12TM
Part No. CG12TM

Save Trees

Top Mount Cone Grates are designed to mount on the top of round manhole inlet or outlet structures to keep debris from entering the storm water system. Top mount cone grates are easy to install and allow for at grade manhole installations but can be used in a variety of applications. Grates 96" and larger are made as a two piece, bolt together design.

- Plate and bar hybrid design is both clean and cost effective
- Made from 1/2" plate with 3/4" or 1" round bars depending on grate size
- Anti vortex plate can be added upon request
- Hinged and lockable access doors can be added upon request
- Galvanized steel construction. Can be made from aluminum or stainless steel.

D9



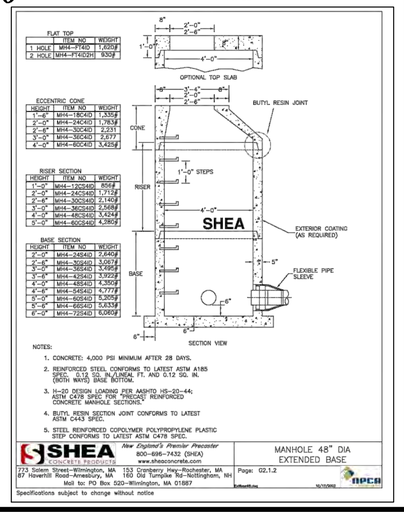
SIEVE DESIGNATION	SIZE OF STONE (INCHES)
100%	12
84-100%	6
68-83%	3
42-55%	1
8-12%	NO. 4

1. TRAP TO BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

STONE LINED SEDIMENT TRAP

D10 48" MANHOLE ROUND EXTENDED BASE

NOT TO SCALE



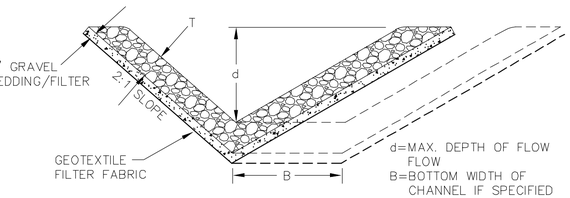
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL CONFORMS TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) SAGE BOTTOM.
3. H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
4. BUTYL RESIN SECTION JOINT CONFORMS TO LATEST ASTM C443 SPEC.
5. STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478 SPEC.

SHEA CONCRETE PRODUCTS — New England's Premier Precaster
800-696-7432 (SHEA)
www.sheaconcrete.com
773 Salem Street-Wilmington, MA 153 Cranberry Hwy-Rochester, MA
87 Haverhill Road-Amesbury, MA 160 Old Turnpike Rd-Nottingham, NH
Mail to: PO Box 520-Wilmington, MA 01887

MANHOLE 48" DIA EXTENDED BASE
Page: G2.1.2

Specifications subject to change without notice

D11



TYPICAL SECTION FOR A RIPRAP LINED CHANNEL

NOT TO SCALE

D-101

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

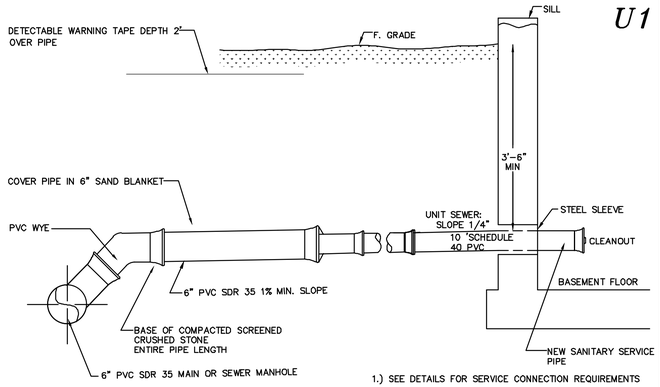
DRAINAGE CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE — KENNETH A. BERRY No. 14295 — LICENSED PROFESSIONAL ENGINEER

U1



DETAIL OF UNIT SEWER SERVICE
NOT TO SCALE

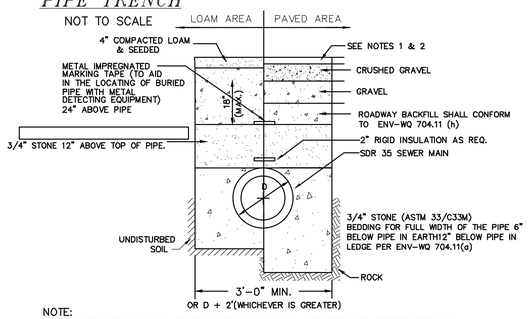
1.) SEE DETAILS FOR SERVICE CONNECTION REQUIREMENTS

2.) SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3.) CLEANOUTS SHALL BE INSTALLED INSIDE EACH BUILDING EXIT POINT

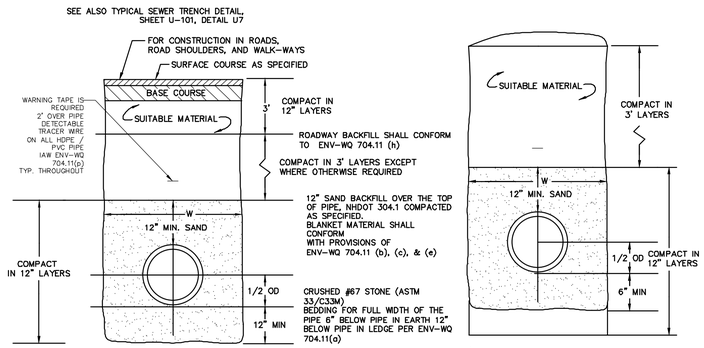
U2

TYPICAL SEWER PIPE TRENCH
NOT TO SCALE



NOTE:
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO SUBDIVISION SPEC'S.
3. ANTI-SEEP COLLARS OR CLAY CHECK DAMS ON STEEP RUNS IN WET CONDITIONS.
4. ALL SEWER INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF NHDES & MUNICIPAL DPW SEWER DIVISION STANDARDS. ALL PVC SEWER PIPE IS TO CONFORM WITH ENV-WQ 704.05 (c)-(e) AND CONFORM WITH ASTM D3034. PVC JOINT SEALS SHALL CONFORM WITH ASTM D3121. SDR-21 PVC FORCE MAIN PIPE MATERIAL IS REQUIRED IN LOCATIONS AS SHOWN. SDR-21 PVC FORCEMAIN PIPE WILL CONFORM TO ENV-WQ 704.08.

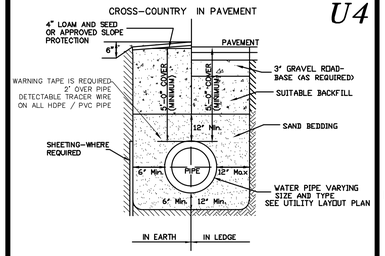
U3



LEDGE CONSTRUCTION
NOT TO SCALE

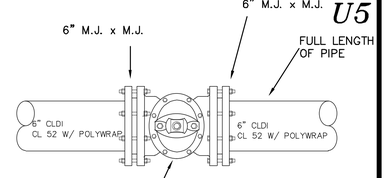
EARTH CONSTRUCTION
NOT TO SCALE

U4



TYPICAL TRENCH DETAIL FOR WATER SYSTEM
NOT TO SCALE

U5



SHUTOFF VALVE DETAIL
NOT TO SCALE

1.) ALL VALVES ARE TO OPEN RIGHT
2.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS

U6

TYPICAL THRUST BLOCKS
NOT TO SCALE

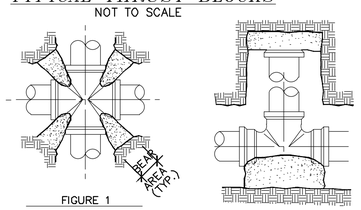


FIGURE 1
CROSS
(ONLY REQ'D IF ANY LEG IS LESS THAN 60 FT. LONG)

FIGURE 2
TEE, PLUG OR CAP

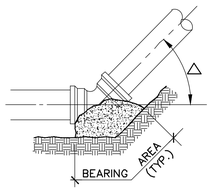


FIGURE 3
HORIZONTAL OR UPWARD VERTICAL BEND

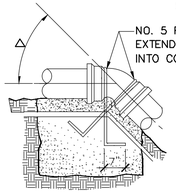
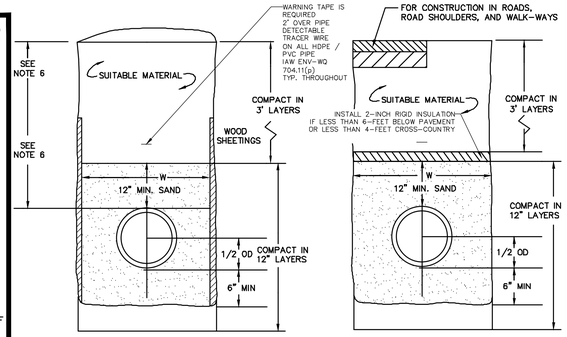


FIGURE 4
DOWNWARD VERTICAL BEND

PIPE I.D.	BEARING AREA, SQUARE FEET						VOLUME OF CONC. CU.YD		
	FIGURE 1	FIGURE 2	FIGURE 3, Δ				FIGURE 4, Δ		
			90°	45°	22-1/2°	11-1/4°	45°	22-1/2°	11-1/4°
4"	2	2	2	1	1	1	1.0	.5	.5
6"	2	3	3	2	1	1	1.5	1.0	.5
8"	2	5	6	3	2	1	2.0	1.0	.5
10"	3	7	10	5	3	1	4.0	2.0	1.0
12"	3	10	14	8	4	2			
14"	4	14	20	10	5	3			
16"	4	20	24	12	7	4			
18"	5	24	30	16	10	5			
20"	5	28	40	20	12	6			

GENERAL NOTES:
1. ALL FITTINGS & EXPOSED REBAR TO BE RAPPED W/ TWO LAYERS OF 6 MIL. POLYETHYLENE WHERE COVERED WITH CONCRETE.
2. ALL CONCRETE SHALL BE CLASS C 3000 P.S.I. MINIMUM 28 DAYS COMPRESSIVE STRENGTH.
3. PLACE CONCRETE AGAINST UNDISTURBED EARTH.
4. TABLE DENOTES MINIMUM BEARING AREA OR VOLUME OF THRUST BLOCK. SPECIAL DESIGN FOR EACH INSTALLATION IS REQUIRED IF ALLOWABLE SOIL BEARING CAPACITY IS LESS THAN 3000 P.S.F.
5. VERTICAL SURFACES NOT BEARING AGAINST UNDISTURBED EARTH SHALL BE FORMED.
6. KEEP CONCRETE AWAY FROM FLANGE BOLTS AND FITTINGS.
7. MECHANICAL JOINTS AT ALL FITTINGS IE: BENDS, TEES, CROSSES, AND VALVES SHALL BE THRUST RESTRAINT. (MEGA-LUG OR APPROVED EQUAL.



EARTH CONSTRUCTION WITH SHEETING
NOT TO SCALE

TRENCH INSULATION
NOT TO SCALE

U7

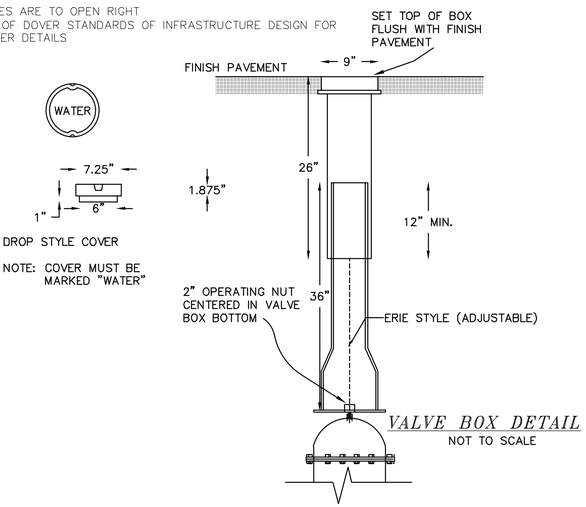
NOTES:

1.) ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO LOCAL WATER WORKS TECHNICAL SPECIFICATIONS.

2.) ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE.

3.) ALL VALVES ARE TO OPEN RIGHT

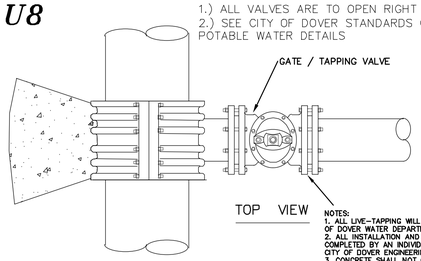
4.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS



VALVE BOX DETAIL
NOT TO SCALE

U8

1.) ALL VALVES ARE TO OPEN RIGHT
2.) SEE CITY OF DOVER STANDARDS OF INFRASTRUCTURE DESIGN FOR POTABLE WATER DETAILS

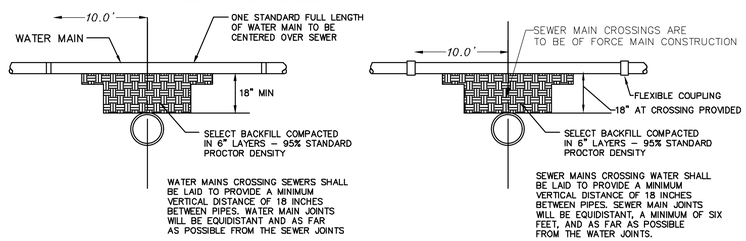


DETAIL FOR STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY
NOT TO SCALE

U9

SEPERATION NOTES:

1. WATER MAIN SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR WATER WORKS" SO-CALLED TEN STATE STANDARDS AND NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL DESIGN STANDARDS, ENV-WQ 700 ADOPTED OCTOBER 14, 2014.
2. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED IN A SEPARATE TRENCH AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
3. VERTICAL SEPARATION REQUIREMENTS APPLY TO WATER AND SEWER MAINS AND SERVICE LINES. WHERE SEWER CROSSES WATER MAIN AND WATER SERVICE CROSSES SEWER MAIN, 18 INCH VERTICAL CLEARANCE SHALL BE PROVIDED WITH WATER OVER SEWER.



WATER MAIN ABOVE SEWER

WATER MAIN BELOW SEWER

TYPICAL WATER/SEWER SEPERATION DETAILS
NOT TO SCALE

U-101

DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

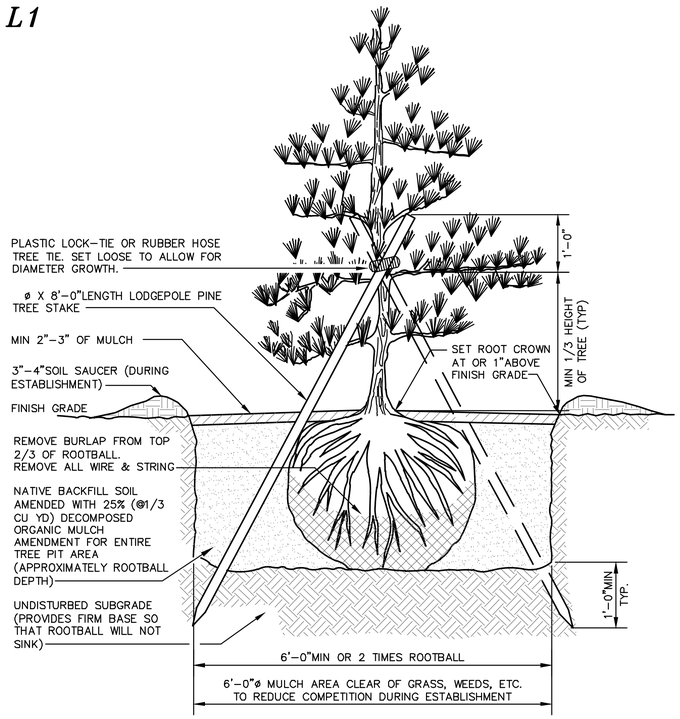
UTILITY CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

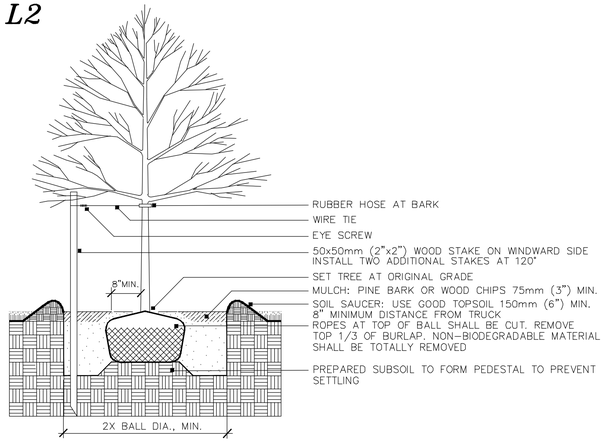
STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14240
LICENSED PROFESSIONAL ENGINEER

L1



CONIFEROUS TREE PLANTING

L2



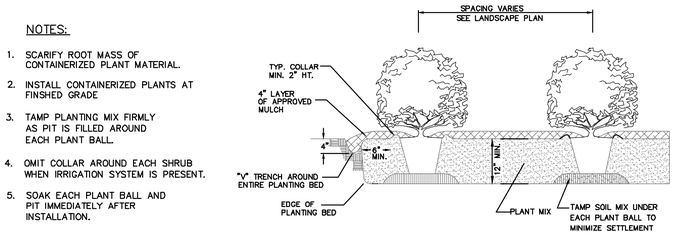
DECIDUOUS TREE PLANTING

NOTE: STAKING TO BE USED IN PARKING ISLANDS AND OTHER CONFINED AREAS AS NECESSARY TO AVOID CONFLICTS WITH PEDESTRIANS

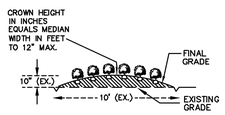
L3

NOTES:

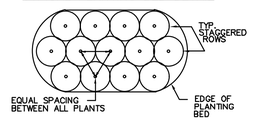
1. SCARIFY ROOT MASS OF CONTAINERIZED PLANT MATERIAL.
2. INSTALL CONTAINERIZED PLANTS AT FINSHED GRADE
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
5. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.



TYPICAL PLANTING BED DETAIL



TYPICAL BED CROWNING

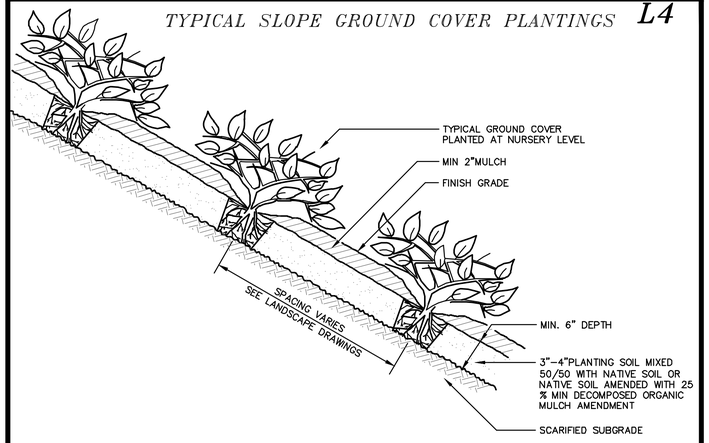


TYPICAL PLANTING BED PLAN

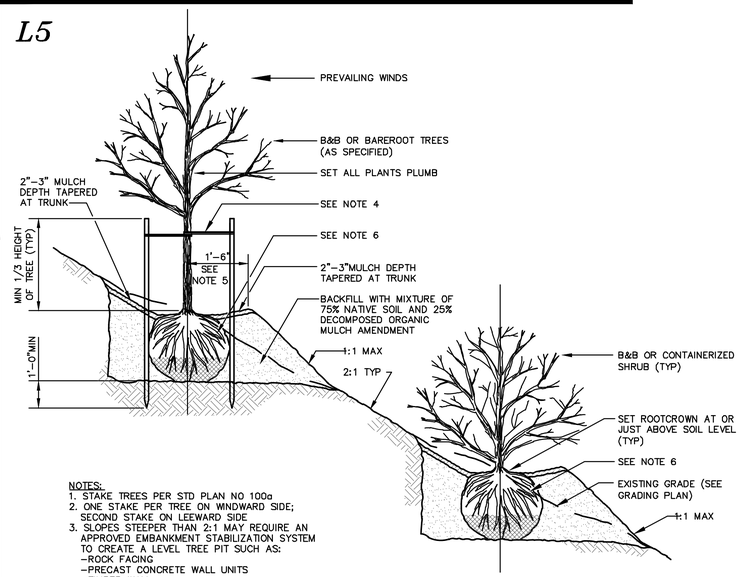
SHRUB & HEDGE PLANTING

L4

TYPICAL SLOPE GROUND COVER PLANTINGS



L5



NOTES:
1. STAKE TREES PER STD PLAN NO 100a
2. ONE STAKE PER TREE ON WINDWARD SIDE; SECOND STAKE ON LEEWARD SIDE
3. SLOPES STEEPER THAN 2:1 MAY REQUIRE AN APPROVED EMBANKMENT STABILIZATION SYSTEM TO CREATE A LEVEL TREE PIT SUCH AS:
   –ROCK FACING
   –PRECAST CONCRETE WALL UNITS
   –TIMBER WALL
   –MANUFACTURED SLOPE RETENTION UNITS
4. CHAINLOCK TREE TIE. LOOP EACH TIE AROUND TREE LOOSELY TO PROVIDE 1" SLACK FOR DIAMETER GROWTH.
5. SHAPE SOIL TO PROVIDE 3' DIAMETER OR ROOTBALL DIAMETER, WHICHEVER IS GREATER, WATERING RING.
6. REMOVE ALL WIRE AND STRING. REMOVE TOP 2/3 OF BURLAP.

TREE PLANTING ON SLOPES

L6

NOTES:

1.) CALL DIG SAFE PRIOR TO BEGINNING WORK. (1–888–344–7233). THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF THE SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER OR GENERAL CONTRACTOR.

2.) CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING. SEE NOTE XXX ON OVERALL SITE PLAN.

3.) PROVIDED SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.

4.) ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

5.) ALL PLANT MATERIALS SHALL BE FREE FROM INSECTS AND DISEASE.

6.) ALL PLANTINGS SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM OWNER.

7.) ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.

8.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING AND NEWLY PLANTED TREES AND SHRUBS DURING THE CONSTRUCTION PROCESS. WHERE REQUIRED, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING (SNOW OR EQUAL) AROUND EXISTING TREES AND SHRUBS THAT COULD BE IMPACTED BY THE CONSTRUCTION PROCESS. STORAGE OF CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIALS, SNOW STORAGE AND OR VEHICLE PARKING SHALL NOT BE PERMITTED WITHIN THE DRIP LINE OF TREES OR TWENTY FEET WHICH EVER IS GREATER.

9.) NEW PLANTINGS SHALL BE INSTALLED PER PROJECT DRAWINGS AND SPECIFICATION THAT INCLUDE FERTILIZATION AND MULCHING AS REQUIRED.

10.) ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH.

11.) WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL–ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

12.) MAINTENANCE OF NEW PLANTINGS AND LAWNS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND OR LANDSCAPE SUBCONTRACTOR UNTIL ACCEPTANCE BY THE OWNER. RESPONSIBILITIES SHALL INCLUDE WATERING WEEDING AND MOWING AS NECESSARY. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, REPLACEMENT MATERIAL SHALL BE GUARANTEED FOR AND ADDITIONAL YEAR FROM TIME OF INSTALLATION.

13.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES DURING THE CONSTRUCTION PHASE AND UNTIL ALL AREAS HAVE BEEN STABILIZED AND ACCEPTED BY THE OWNER. THE GENERAL CONTRACTOR SHALL PROVIDE WEEKLY INSPECTIONS OF EROSION MEASURE AND IMMEDIATELY AFTER STORM EVENTS AND REPAIR AS NECESSARY.

14.) THE GENERAL CONTRACTOR AND OR THE LANDSCAPE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL THREE GUYING MATERIAL ONCE PLANT MATERIAL HAS BEEN ESTABLISHED. (MINIMUM OF ONE GROWING SEASON). ALL TEMPORARY EROSION CONTROL MEASURE SHALL BE REMOVED ONCE STABILIZATION OF DISTURBANCE HAS BEEN ACCEPTED BY OWNER.

15.) THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM OF TWO MOWINGS FOR ALL TURF AREAS OR UNTIL ACCEPTANCE BY THE OWNER. A MINIMUM UNIFORM 75% CATCH OF TURF IS REQUIRED FOR ACCEPTANCE.

16.) ALL PLANTINGS SHALL BE WATERED REGULARLY DURING THEIR FIRST YEAR AND MAINTAINED PERMANENTLY IN GOOD GROWING CONDITION AS AN EFFECTIVE VISUAL SCREEN.

17.) SHRUBS OR TREES WHICH DIE SHALL BE REPLACED WITHIN ONE GROWING SEASON WITH NEW SHRUBS OR TREES TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE LANDSCAPING REQUIREMENTS.

18.) ALL REQUIRED LANDSCAPING SHALL BE INSTALLED BEFORE OCCUPANCY, OR WITHIN SIX MONTHS IF OCCUPANCY OCCURS DURING WINTER CONDITIONS.

19.) TREES ARE TO BE 2–2.5" CALIPER 6" OFF THE ROOT BALL.

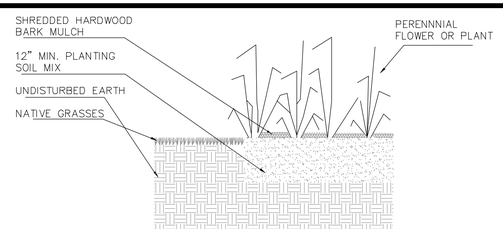
20.) ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITIONS (AMERICAN ASSOCIATION OF NURSERYMEN, INC.)

21.) 4" AGED PINEBARK MULCH AND A WEED BARRIER (TY–PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUND COVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.

22.) PLANT–PIT BACK–FILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 2 PARTS OF DEHYDRATED COW MANURE. SLOW RELEASE FERTILIZER SHALL BE APPLIED AS PER MANUFACTURERS RECOMMENDATIONS. USE EXISTING ON–SITE TOPSOIL AS PART OF BACK FILL WHEN AVAILABLE.

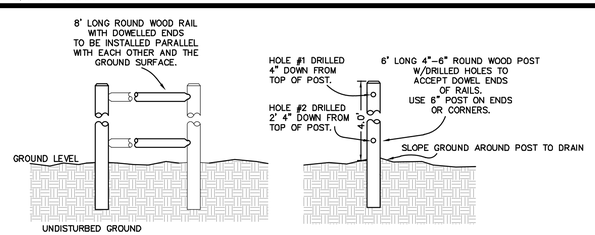
23.) ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED OR SOD AS INDICATED ON PLANS.

L8



PERENNIAL PLANTING DETAIL

L7



TYPICAL POST & RAIL FENCE DETAIL

N.T.S.

L–101

DOVER PLANNING FILE #P21–37

REVISION	DATE	DESCRIPTION
#1	7–20–21	REVISED PER DOVER TRC COMMENT

LANDSCAPING CONSTRUCTION DETAILS
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : AS NOTED
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14243
LICENSED PROFESSIONAL ENGINEER

DRAINAGE ANALYSIS
&
EROSION AND SEDIMENT CONTROL PLAN

48 Whittier Street, Dover, NH

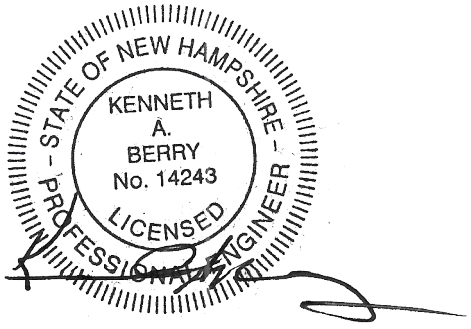
Prepared for:

Dover Housing Authority
62 Whittier Street
Dover, NH 03820

TAX MAP 33, LOT 1-A

Prepared by:

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825



Project Number:
DB 2020-136

May 6, 2021
Revised: July 21, 2021

Table of Contents

USGS Quadrangle Location Maps

Design Method Objectives		Page 2
1.0	Existing Conditions Analysis	Page 3
2.0	Proposed Conditions Analysis	Page 3
3.0	Stormwater Treatment & Infiltration Practices	Page 4
3.1	Full Comparative Analysis	Page 4
4.0	Erosion & Sediment Control, BMP's	Page 5-11
5.0	Conclusion	Page 11

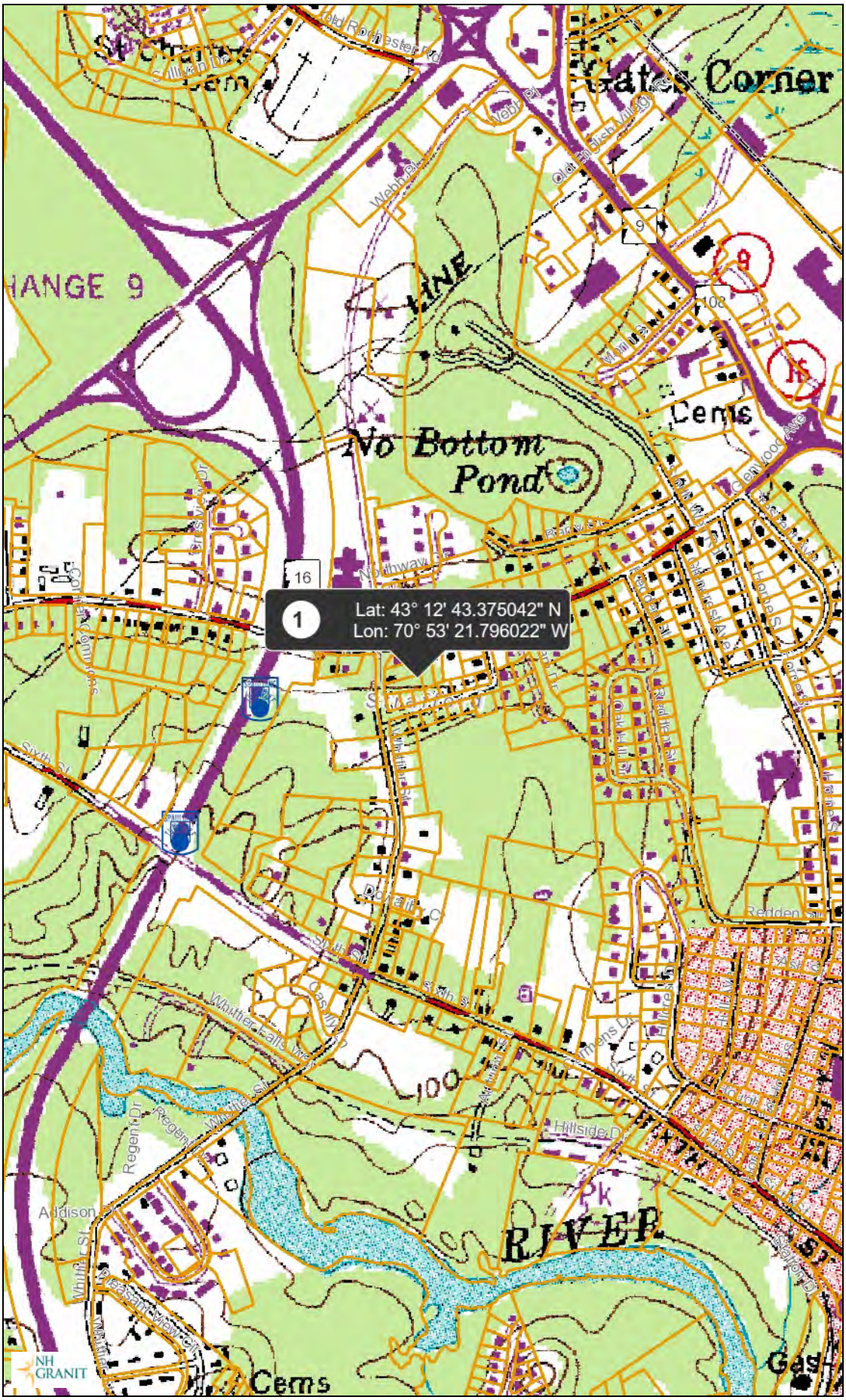
Appendix I - Existing Conditions Analysis
25 Yr.-24 Hr. Full Summary
2 Yr.-24 Hr. Node Listing
10 Yr.-24 Hr. Node Listing
25 Yr.-24 Hr. Node Listing
50 Yr.-24 Hr. Node Listing
100 Yr.-24 Hr. Node Listing

Appendix II - Proposed Conditions Analysis
25 Yr.-24 Hr. Full Summary
2 Yr.-24 Hr. Node Listing
10 Yr.-24 Hr. Node Listing
25 Yr.-24 Hr. Node Listing
50 Yr.-24 Hr. Node Listing
100 Yr.-24 Hr. Node Listing

Appendix III - Calculations, Charts, & Graphs
Extreme Precipitation Table
RipRap Calcs
NHDES AoT Spreadsheets
USDA / NRCS Websoil
Site Specific Soil Survey Report & Plan
Stormwater System Management: Inspection & Maintenance Manual
Watershed Report Card, 303(d) List, & ORW List

Enclosed:	W-1 Sheet	Existing Conditions Watershed Plans	Sheet 1
	W-2 Sheet	Post Construction Watershed Plans	Sheet 2
		Erosion & Sediment Control Plan	

Map by NH GRANIT



Legend

Parcels
- Parcel Polygons
- Attributes for Additional Lines

State

County

City/Town

Map Scale

1: 10,000

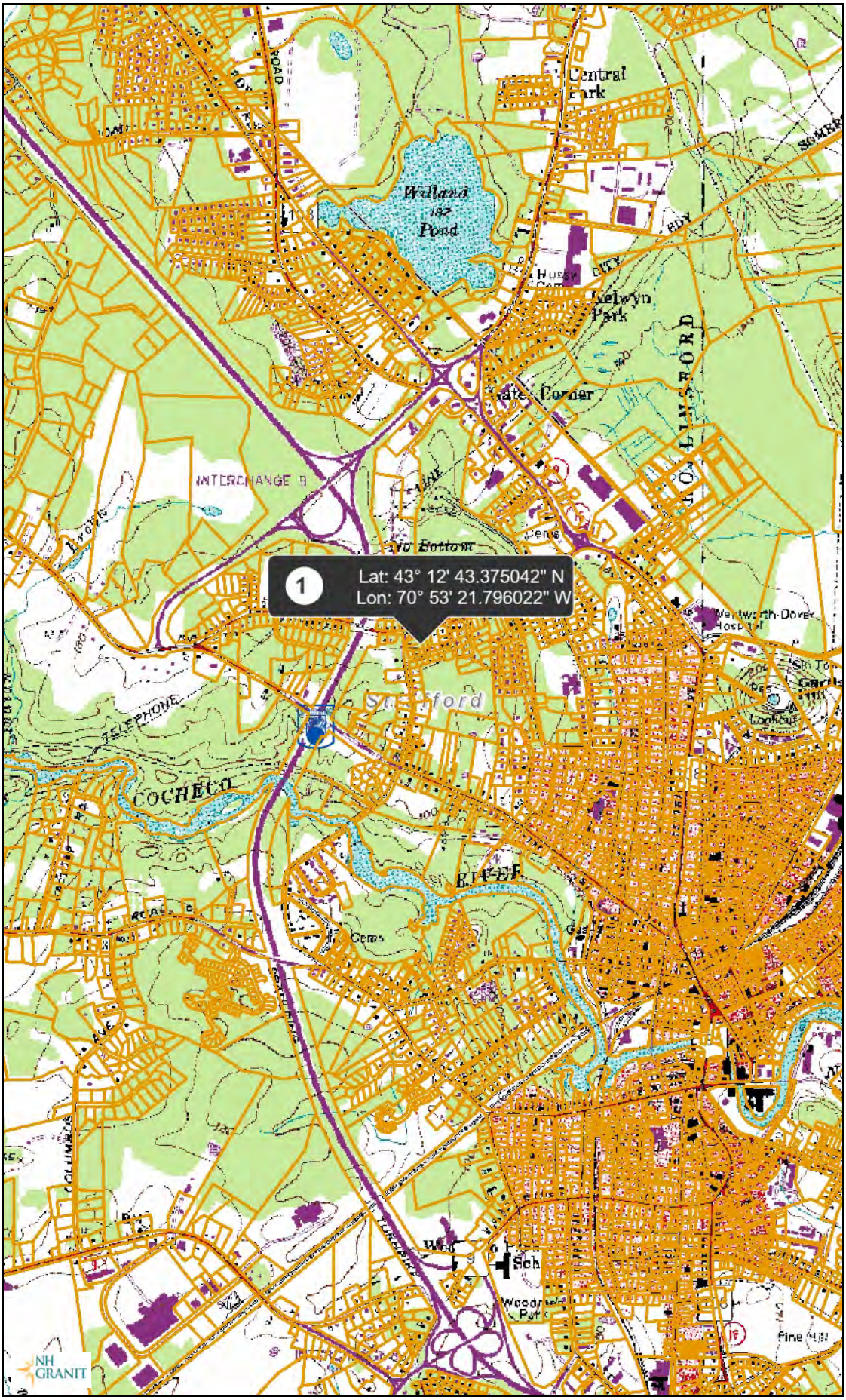
© NH GRANIT, www.granit.unh.edu

Map Generated: 5/5/2021

Notes



Map by NH GRANIT



Legend

Parcels
- Parcel Polygons
- Attributes for Additional Lines

State

County

City/Town

Map Scale

1: 24,000

© NH GRANIT, www.granit.unh.edu

Map Generated: 5/5/2021

Notes



DESIGN METHOD OBJECTIVES

The owner of Tax Map 33, Lot 1-A, Dover Housing Authority, is proposing to develop the parcel and add a six unit residential structure with appropriate parking, municipal water and sewer. Surface water runoff from the impervious surfaces will be treated by a rain garden.

Existing Topography was derived from the Boundary Survey and Existing Conditions Survey conducted. The soils used in this analysis are based on a Site Specific Soil Survey conducted by John P. Hayes III, CSS #87. The receiving waters, and impairments, are based on the NHDES Watershed Report Cards and the 303(d) and ORW Lists.

An Existing and Proposed Conditions analysis was conducted for the purpose of estimating the peak rate of stormwater run-off and to subsequently design adequate mitigation of drainage. There is one existing drainage discharge point and one nonpoint final reach which were identified in the existing analysis and duplicated in the proposed conditions analysis. Designing two watershed models we have compared the differences in these rates of peak run-off and surface water volume. Sheet W-1 outlines the characteristics of the site in its existing or pre-construction conditions. The second analysis displays the proposed (post-construction) conditions (See Sheet W-2). The analysis was conducted using data for; 2 Yr - 24 Hr (3.62″), 10 Yr - 24 Hr (5.46″), 25 Yr - 24 Hr (6.91″), 50 Yr - 24 Hr (8.26″), and 100 Yr - 24 Hr (9.87″) storm events. Storm event analysis was accomplished using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment and rainfall quantities are based on the Extreme Precipitation Table for this location from the Northeast Regional Climate Center / Cornell University (http://precip.eas.cornell.edu), in accordance with Alteration of Terrain Administrative Code, ENV-Wq (Attached in Appendix 3). With Dover being a coastal community, rainfall estimates have been increased by a factor of 15%, this is reflected in the totals listed above.

1.0 Existing Analysis:

Reference: W-1 Sheets - Existing Conditions Watershed Plan (Enclosed)
Sheet 2 Existing Conditions Plan

The existing property consists of 0.35 acres of land which is currently vacant. The drainage analysis encompasses solely the proposed developed area and the surrounding watershed (1.03 acres) The soil found on the parcel consists of both smoothed and loamy udorthents (299B, 299C, 299D, 299E, and 500A) classified as Hydrologic Soil Group C. The runoff from the existing site generally flows east across the property. The area of analysis has surface water that drains from the parcel to the wetlands that are adjacent to the Cocheco River. The river is impaired by pH, E-Coli, and Mercury with a New England Regional TMDL established for Mercury.

Final Reach #100:

Subcatchment #1 consists of the front portion of the parcel extending from the road as far back as the original roof line of the removed house. This also includes the front portion of the lot to the southwest. Runoff generally flows northeast to and along the curbside of Whittier Street and is being analyzed where it extends past the property line of the locus parcel (Final Reach #100).

Final Reach #200:

Subcatchment #2 consists of a majority of the parcel land area where runoff flows to the eastern corner of the property and is being analyzed as a non-point source runoff. (Final Reach #200).

2.0 Proposed Analysis:

Reference: W-2 Sheets - Proposed Conditions Watershed Plan (Enclosed)
Sheet 4, Proposed Site Plan
Sheet 5, Proposed Grading & Drainage Overview Plan

Final Reach #100:

Subcatchment #1 is decreased in size marginally due to the development of the locus parcel and the construction of the proposed parking area and residential building. The driveway is being moved and reconstructed. Runoff still flows toward Final Reach #100.

Final Reach #200:

Subcatchment #2 is decreased in size due to the construction of the proposed building, rain garden (Pond #101), and parking area. The remaining area of Subcatchment #2 still contributes runoff directly to Final Reach #200

Subcatchment #3 consists solely of the rooftop of the proposed building. Runoff is collected in roof drains and directed into Rain Garden #101 (Pond #101) which outlets into a level spreader directed toward Final Reach #200.

Subcatchment #4 consists of the remainder of the parcel and offsite land which drains directly into Rain Garden #101 (Pond #101) (see below) which directs runoff to Final Reach #200 which discharges a level spreader and a short overland reach (Reach #4).

Rain Garden #101 discharges runoff through underdrains and an outlet structure which discharges to the level spreader and eventually to Final Reach #200. StormTech chambers set in stone under the parking lot provide additional storage and detention of runoff. Runoff discharge is controlled by a round 3 - inch orifice drilled in a HDPE cover on the underdrain.

3.0a Stormwater Treatment:

Surface water runoff from the development area is being treated by a rain garden which outlets to a level spreader after treating runoff.

Any surface water runoff from this site would flow into the Lower Cocheco River watershed (010600030608). The tributary is impaired by Mercury which is currently covered by a TMDL being the NE Regional Mercury TMDL #33883. This tributary is also impaired by pH and E-Coli.

3.1 FULL COMPARATIVE ANALYSIS:

ANALYSIS	COMPONENT	PEAK RATE DISCHARGE (Cubic Feet / Second)				
		2 Yr.	10 Yr.	25 Yr.	50 Yr.	100 Yr.
Final Reach #100	Existing	0.70	1.22	1.63	2.01	2.46
	Proposed	0.66	1.10	1.45	1.876	2.24
Final Reach #200	Existing	0.90	1.96	2.87	3.74	4.80
	Proposed	0.59	1.96	2.59	3.03	4.64

ANALYSIS	COMPONENT	VOLUME (Acre Feet)				
		2 Yr.	10 Yr.	25 Yr.	50 Yr.	100 Yr.
Final Reach #100	Existing	0.051	0.090	0.123	0.153	0.189
	Proposed	0.049	0.083	0.110	0.136	0.168
Final Reach #200	Existing	0.079	0.165	0.233	0.315	0.406
	Proposed	0.104	0.204	0.289	0.365	0.459

4.0 EROSION & SEDIMENT CONTROL PLANS **BEST MANAGEMENT PRACTICES (BMP's)**:

Reference: Proposed Site Plan and Grading Plan
Erosion & Sediment Control Plan
Erosion & Sediment Control Details, E-101 & E-102

The proposed site development is protected from erosion and the abutting properties are protected from sediment by the use of Best Management Practices as outlined in the New Hampshire Stormwater Manual, Volume 2, Post-Construction Best Management Practices Selection & Design (December 2008, NHDES & US EPA). Any area disturbed by construction will be re-stabilized within 30 days and abutting properties will not be adversely affected by this development. All swales and drainage structures will be constructed and stabilized prior to having run-off directed to them. Reference is also made to the Stormwater System Operation and Maintenance Plan / Inspection & Maintenance Manual which has been written specifically for this project and available to the owner. Reference is also made to City of Dover Construction / Erosion Control Fact Sheet and

Bioretention System (Rain Garden)

Description: Rain Gardens, or bioretention areas are located close to the source of runoff. They are intended to integrate with the site landscaping and become an aesthetically attractive opportunity to provide highly effective stormwater treatment. The rain gardens associated with this proposed development contribute toward recharge of surface water run-off into the ground. It is important that sediment be removed from run-off prior to discharge into the bioretention area to preserve the mulch and soil mix ratio. During construction it is important that the ground surface not be exposed to traffic or construction equipment to preserve the infiltration capabilities of the existing soil. Construction specifications are included in the plan set and New Hampshire Stormwater Manual, Volume 2, 4-3 Treatment Practices, 4c Bio-retention System.

Construction Considerations: After the stone and bio-media has been installed, Filtrexx Silt Soxx or approved equal, will be installed at the toe of slope intersection between the berm and bio-media and will remain until the slopes of the berm are stable.

Maintenance Considerations: Rain Gardens should be inspected at least twice annually and following any rainfall event exceeding 0.25 inches in a twenty-four hour period. Maintenance rehabilitation will be conducted as warranted by each inspection. Trash and debris will be removed at each inspection.

On an annual basis the infiltration capabilities need to be confirmed by evaluation of the drawdown time. If the bioretention system does not drain within 72-hours following a rainfall event, a qualified professional will assess the condition of the rain garden to determine measures required to restore the infiltration function. This is normally the

direct result of sediment accumulation which will be removed to restore the filter media ratio.

Also on an annual basis the vegetation should be inspected to ensure healthy condition. Invasive species need to be removed along with dead or diseased vegetation.

StormTech Chamber System

Description: The StormTech Chamber System is a trademark product of the Advance Drainage System (ADS) company. The purchase and installation of this system will conform to ADS proprietary rights. The design engineer has specifically used the StormTech Chamber specifications in the design of this installation. The design is based on the StormTech SC-740 Chambers. The system is designed to provide additional storage and retention of stormwater within the stone reservoir. The volume in the washed crushed stone and in the specified chambers will act as detention in connection with the Outlet Structure orifice. The system for this applicant and owner consists of 20 chambers in five rows of four chambers. The orifice located in the outlet structure is located to direct all runoff to the level spreader. The top of the outlet structure is designed to pass larger storm events. Multiple inspection ports are located throughout the system.

Inspection & Maintenance Considerations: The StormTech chamber system is to be buried within washed crushed stone. Stormwater will only enter the stone reservoir after being treated through the Bio-Media of the rain garden. Inspection ports should be inspected semi-annually to be sure the stone reservoir completely drains through the underdrains. Clean-outs are provided to jet the underdrains. Likewise, the orifice cap can be removed for similar cleaning.

ADS / StormTech Contact: Aaron Cheever, PE, Advance Drainage Systems, Inc.
aaron.cheever@ads-pipe.com 1-978-302-0650

Silt Fence / Perimeter Control:

The plan set demonstrates the location of silt fence for sediment control. The Erosion and Sediment Control Details, Sheet E-101, has the specifications for installation and maintenance of the silt fence. Silt fence is rated to be effective for 100 linear feet of fence to capture runoff from one-quarter acre or basically 100 feet of land sloping toward the fence. Filtrexx silt soxx have a variable area and depth, see Filtrexx supporting documents. The NHDES Stormwater Manual requires that the maximum spacing for support stakes is six-feet.

Filtrexx Silt Soxx, or approve equal, has been specified in numerous locations within the plan set and silt fence is not a substitution for silt soxx. Multiple sizes of this product have been specified for use.

EPA CGP 2017: "You must install sediment control along those perimeter areas of your site that will receive stormwater from earth disturbing activity."

In accordance with EPA CGP 2.1.2.1, Provide Natural Buffers or Equivalent Sediment Controls, and CGP Appendix G, Table G-3, and Table G-7, slopes between 3% and 6% with soils that are Fine Sandy Loams, there is a High Risk Factor and it is required to Double Perimeter Control and 7-Day Site Stabilization.

Erosion Control Mix Berm:

As an alternative to the Silt Fence, an Erosion Control Mix Berm can be utilized as a perimeter control. The specifications can be found on Sheet E-101, Detail E6.

Rolled Erosion Control Blanket:

Description: Rolled Erosion Control Blankets, such as North American Green Bionet S150, SC150, SC125 (or equal) or turf reinforcement such as North American Green V-Max C-350 (or equal) consist of interlocking fiber mesh, bio-degradable or permanent, used to stabilize sloping earth while vegetation is being established. The product comes in rolls that are laid out over the earth, normally over-lapped, and secured to the soil by the use of anchors or staples. The RECB may be anchored in the earth at the top of the slope to prevent wash-out. Construction specifications are included in the plan set and New Hampshire Stormwater Manual, Volume 3, 4-1 Erosion Control Practices, Temporary Erosion Control Blanket

Construction Considerations: It is recommended that the blanket be installed in the same direction as the water flow or perpendicular to the slope. The manufacturer will recommend the amount of over-lap from one row to the next and on longer slopes between sections. Care must be taken that the RECB is laid directly on the earth / topsoil and that any existing vegetation not cause tenting as this will cause an issue with the blanket not staying in place. The staples or stakes are to be placed according to the manufacturer based on the slope of the receiving soil and forces that may be encountered. Care must be taken to utilize the correct product as specified. The choice of product are all different and in most cases are not interchangeable. NHDES or NH F&G may specify that some RECBs not be used in some applications.

Maintenance Considerations: RECBs will be inspected during the regular inspection schedule and any construction corrections made if the blanket is compromised.

Vegetated Stabilization:

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutter's property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification and on Sheet E-102 using seeding mixture C, as follows:

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
Total	48	1.10

Conservation Mix

Conservation Mix will be used to stabilize all 2:1 slopes and all land area disturbed within the wetland buffer. (Not applicable to this project)

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.
Tall Fescue	15	0.35
Creeping Red Fescue	15	0.35
Annual Ryegrass	5	0.12
Perennial Ryegrass	5	0.12
Kentucky Bluegrass	15	0.35
White Clover	7	0.16
Total	62	1.45

Stabilized Construction Entrance:

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be 3-inch coarse aggregate, and the pad itself constructed to a minimum length of 75' for the full width of the access road. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E-102- Erosion and Sediment Control Detail Plan. Alternatives to the length and berm are demonstrated on the detail.

Environmental Dust Control:

Dust will be controlled on the site by the use of multiple Best Management Practices. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water and calcium chloride can be applied. Calcium chloride will be applied at a rate that will keep the surface moist but not cause pollution.

Drainage Swales / Stormwater Conveyance Channels:

Drainage swales will be stabilized with vegetation for long term cover as outlined below, and on Sheet E-102 using seed mixture C. As a general rule, velocities in the swale

should not exceed 3.0 feet per second for a vegetated swale although velocities as high as 4.5 FPS are allowed under certain soil conditions.

Stockpiled Sediment or Soil:

Stockpiled materials including topsoil, excavated materials, borrow materials imported onto the site, construction aggregates, and sediment removed from temporary sediment traps will be located in designated areas at least 50 feet away from concentrated flows. All stockpiles will have erosion protection in the form of silt fence and diversion swales will be applied to protect the material and surrounding areas. Inactive stockpiles will be seeded for temporary stabilization. Erosion control measures will be inspected in accordance with the schedule for all other activities on site.

At a minimum, you must comply with following (EPA 2012 CGP Part 2.1.2.4d) "Do no hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similar effective control,) storm drain inlet, or surface water."

Dewatering Practices:

If during construction dewatering becomes required, an addendum will be published specific for the requirements. As a general rule, ground water that needs to be removed from an excavation will be pumped to a sediment basin or a storm drain inlet prior to discharge from the site.

At a minimum, you must comply with following (EPA 2012 CGP Part 2.1.3.4) "With backwash water, either haul it away for disposal or return it to the beginning of the treatment process; and replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications."

Regarding dewatering practices in the State of New Hampshire, specifically see Construction General Permit Section 9.1.1 NHR12000 State of New Hampshire and "Clarification of Section 9.1.1 … and other New Hampshire specific information for the U.S. EPA 2012 NPDES Construction General Permit (CGP), January 20, 2017"

Construction Sequence:

1. Cut and remove trees in construction areas as directed or required.

2. Install Silt Fence and construct and/or install temporary and permanent sediment erosion and detention control facilities (Vegetated swales, level spreaders, and constructed filter strips), as required. Erosion, sediment and facilities shall be installed and stabilized prior to any earth moving operation, and prior to directing run-off to them.

3. Clear, grub, and dispose of debris in approved facilities.

4. Excavate and stockpile topsoil / loam. All disturbed areas shall be stabilized immediately after grading.

5. Construct the roadway and its associated drainage structures.

6. Begin permanent and temporary seeding and mulching. All cut and fill slopes and disturbed areas shall be seeded and mulched as required, or directed.

7. Daily, or as required, construct temporary berms, drainage ditches, sediment traps, etc. to prevent erosion on the site and prevent any siltation of abutting waters or property.

8. Inspect and maintain all erosion and sediment control measures during construction.

9. Complete permanent seeding and landscaping.

10. Remove temporary erosion control measures after seeding areas have established themselves and site improvements are complete. Smooth and re-vegetate all disturbed areas.

11. All swales and drainage structures will be constructed and stabilized prior to having run-off being directed to them.

12. Finish paving all roadways/parking.

Temporary Erosion Control Measures:

1. The smallest practical area of land shall be exposed at any one time.

2. Erosion, sediment control measures shall be installed as shown on the plans and at locations as required, or directed by the engineer.

3. All disturbed areas shall be returned to original grades and elevations. Disturbed areas shall be loamed with a minimum of 4" of loam and seeded with not less than 1.10 pound of seed per 1,000 square feet (48 pounds per acre) of area.

4. Silt fences and other barriers shall be inspected periodically and after every rainstorm during the life of the project. All damaged areas shall be repaired, sediment deposits shall periodically be removed and properly disposed of.

5. After all disturbed areas have been stabilized, the temporary erosion control measures are to be removed and the area disturbed by the removal smoothed and re-vegetated.
6. Areas must be seeded and mulched within 5 days of final grading, permanently stabilized within 15 days of final grading, or temporarily stabilized within 30 days of initial disturbance of soil.

Inspection and Maintenance Schedule:

Perimeter fencing will be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass. Depending on SWPPP criteria, all controls will be inspected once every 7 days and after storm events. Inspection reports must be submitted to City of Dover Engineering Department. See also Stormwater System Management: Inspection and Maintenance Manual published separately also by Berry Surveying & Engineering.

Corrective Action measures will be made in accordance with SWPPP requirements and records maintained on site by the Contractor.

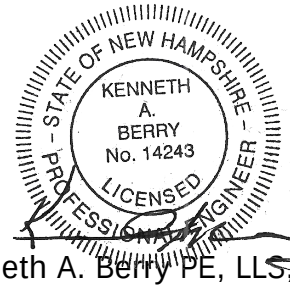
5.0 CONCLUSION:

The peak rate of runoff has been reduced at both final analysis points for the five storm events. Volume has also been reduced at all storm events at Final Reach #100. Channel protection volume has been satisfied at Final Reach #200. Runoff is treated by forebays in the proposed rain garden.

A Site Specific, Terrain Alteration Permit (RSA 485: A-17) is not required for this site plan due to the area of disturbance being less than 100,000 SF. The impact for this site will not require an EPA Notice of Intent as the impact is greater than one acre.

A stormwater management plan may be required by the city of Dover, Community Services, Engineering Department.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING



Christopher R. Berry, SIT 567
Principal, President

Kenneth A. Berry PE, LLS,
CPSWQ, CPESC, CESSWI
Principal, VP - Technical Operations

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE
DEIDRA L BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, CSS #87

NRCS SOILS:

BxB – BUXTON SILT LOAM, 3 TO 8% SLOPES

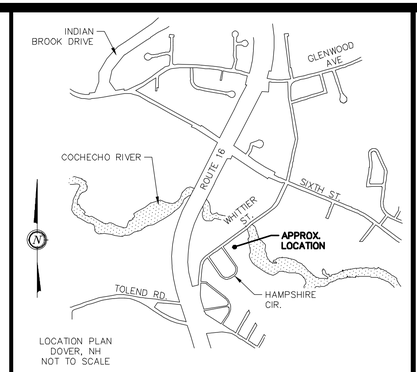
SEE WEBSOIL USDA–NRCS

SITE SPECIFIC SOILS LEGEND

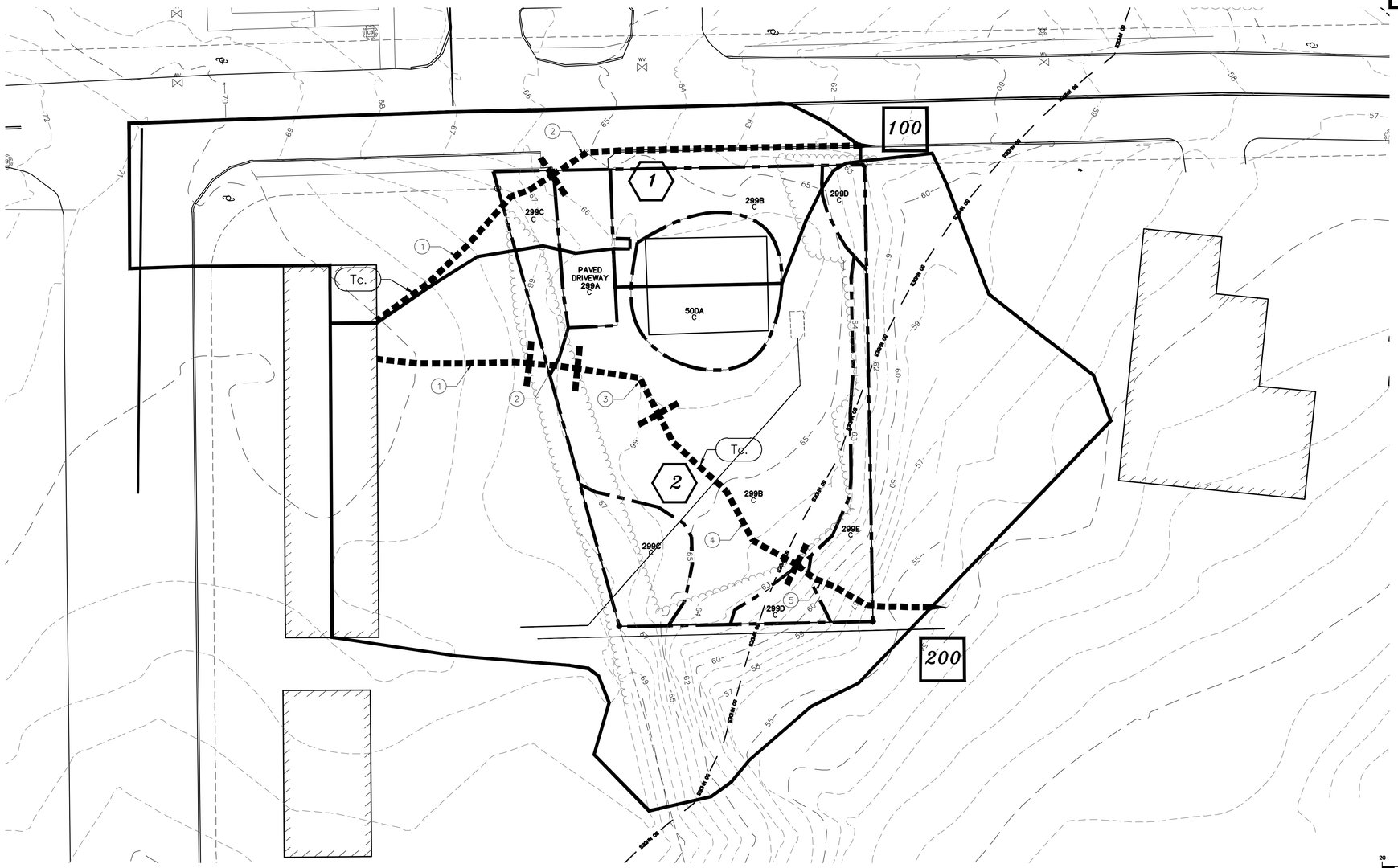
SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
#299B	UDORTHENTS (SMOOTHED)	C
#299C	UDORTHENTS (SMOOTHED)	C
#299D	UDORTHENTS (SMOOTHED)	C
#299E	UDORTHENTS (SMOOTHED)	C
#500A	UDORTHENTS (LOAMY)	C

SLOPE: A = 0–3% B = 3–8% C = 8–15% D = 15–25% E = 25–50% F = 50%+

DENOMINATOR: /VPD = VERY POORLY DRAINED /PD = POORLY DRAINED /SWPD = SOMEWHAT POORLY DRAINED /MWD = MODERATELY WELL DRAINED



LOCATION PLAN
DOVER, NH
NOT TO SCALE



NOTES:

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1–A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE & BELIEF, THIS PARCEL DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF.: FEMA COMMUNITY #330150, MAP #33017C0310E, DATED: SEPTEMBER 30, 2015.
6. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.
7. THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN NOVEMBER OF 2020, WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 77,000.
8. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING WATERSHED CONDITIONS ON TAX MAP 33, LOT 1–A AS OF THE DATE OF THIS SURVEY

SYMBOLS LEGEND:

- # — SUBCATCHMENT AREA SYMBOL
- # — FLOW REACH SYMBOL
- # — POND DEVICE SYMBOL
- Tc. — TIME OF CONCENTRATION SEGMENT

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER PLANNING FILE #

REVISION	DATE	DESCRIPTION

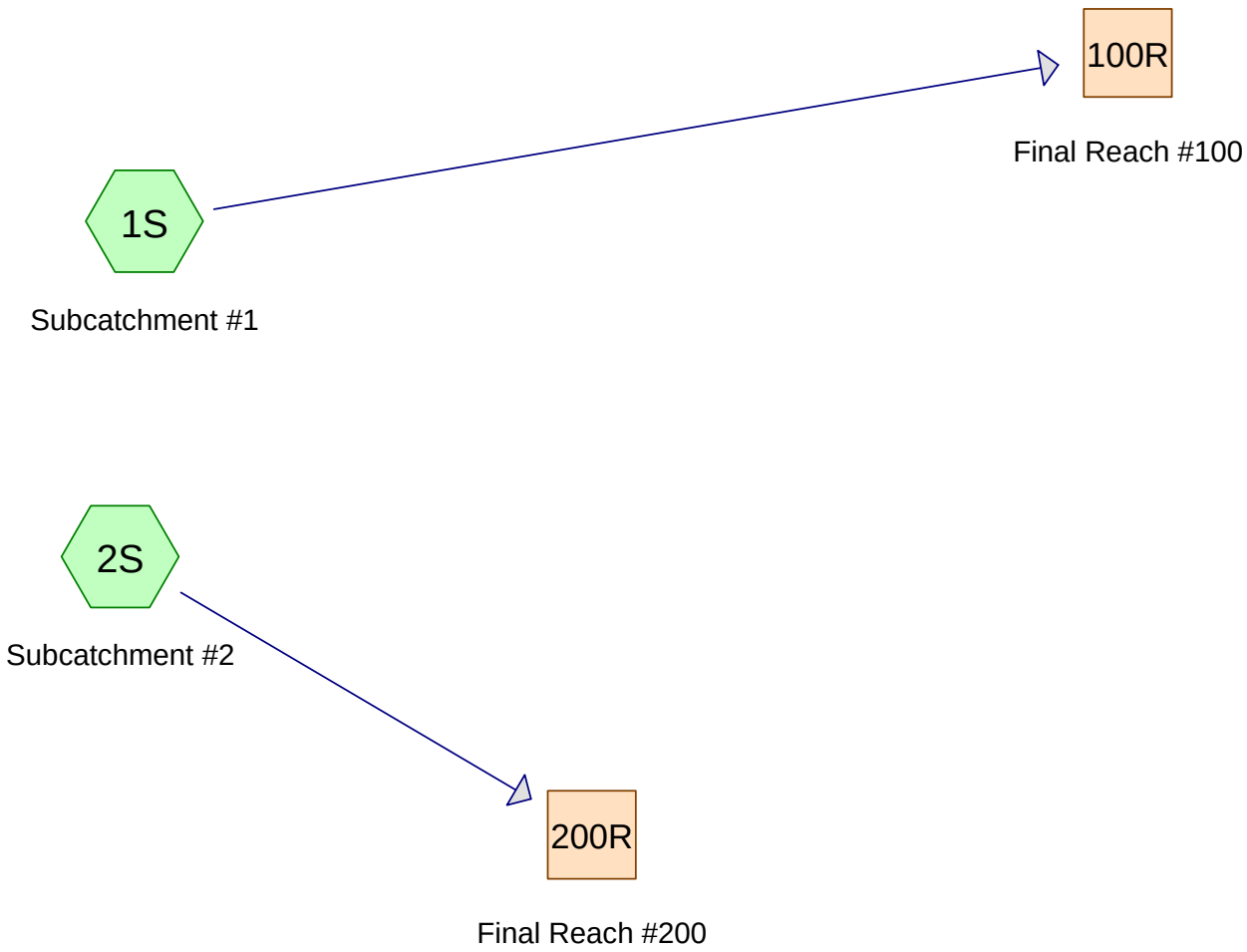
W–1 EXISTING CONDITIONS WATERSHED PLAN

LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 19244
LICENSED PROFESSIONAL ENGINEER



Subcat Reach Pond Link

Routing Diagram for 20-136 W1 Existing Watershed
Prepared by Berry Surveying & Engineering, Printed 5/5/2021
HydroCAD® 10.00-25 s/n 07605 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.484	74	>75% Grass cover, Good, HSG C (1S, 2S)
0.128	98	Paved parking, HSG C (1S, 2S)
0.071	98	Unconnected roofs, HSG C (1S, 2S)
0.347	70	Woods, Good, HSG C (1S, 2S)
1.030	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.030	HSG C	1S, 2S
0.000	HSG D	
0.000	Other	
1.030		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.484	0.000	0.000	0.484	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.128	0.000	0.000	0.128	Paved parking	1S, 2S
0.000	0.000	0.071	0.000	0.000	0.071	Unconnected roofs	1S, 2S
0.000	0.000	0.347	0.000	0.000	0.347	Woods, Good	1S, 2S
0.000	**0.000**	**1.030**	**0.000**	**0.000**	**1.030**	**TOTAL AREA**	

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>5.28"
Flow Length=180' Tc=6.0 min CN=86 Runoff=1.63 cfs 0.123 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>3.85"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=2.87 cfs 0.241 af

Reach 100R: Final Reach #100 Inflow=1.63 cfs 0.123 af
Outflow=1.63 cfs 0.123 af

Reach 200R: Final Reach #200 Inflow=2.87 cfs 0.241 af
Outflow=2.87 cfs 0.241 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.364 af Average Runoff Depth = 4.24"
80.63% Pervious = 0.831 ac 19.37% Impervious = 0.200 ac

Summary for Subcatchment 1S: Subcatchment #1

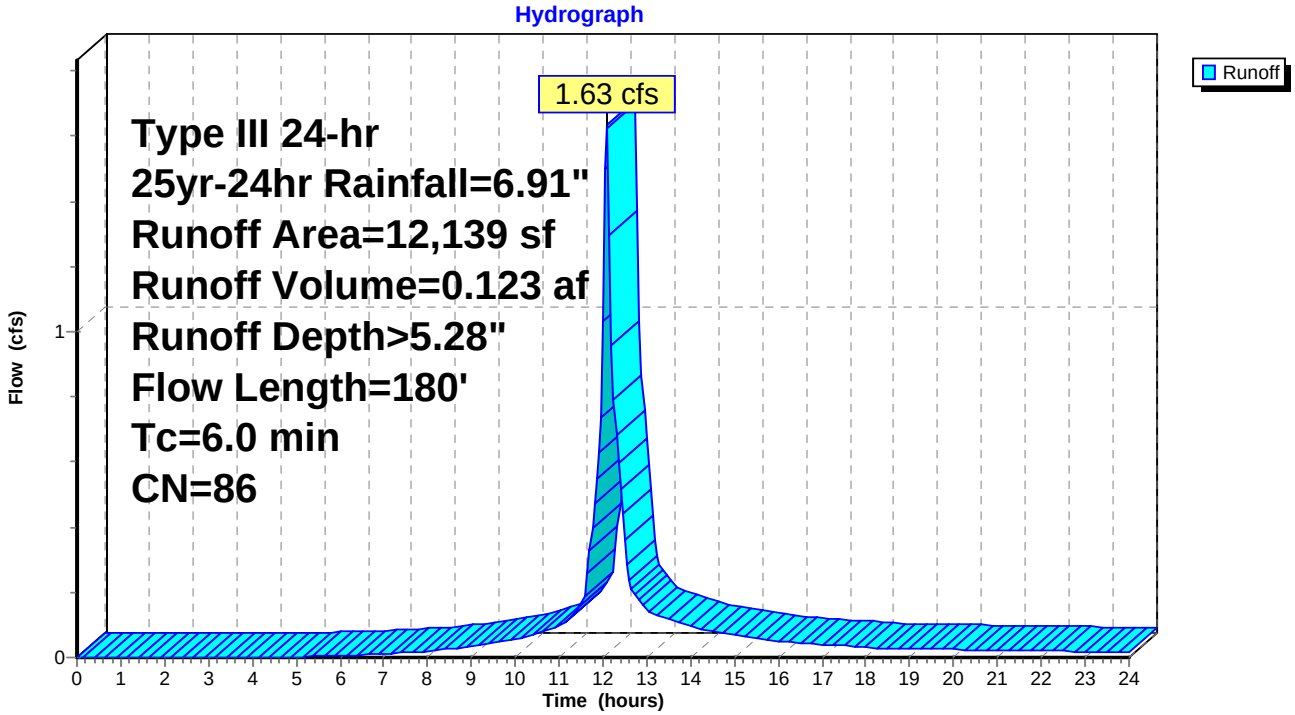
Runoff = 1.63 cfs @ 12.09 hrs, Volume= 0.123 af, Depth> 5.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Description
917	98	Unconnected roofs, HSG C
5,768	74	>75% Grass cover, Good, HSG C
5,164	98	Paved parking, HSG C
290	70	Woods, Good, HSG C
12,139	86	Weighted Average
6,058		49.91% Pervious Area
6,081		50.09% Impervious Area
917		15.08% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	76	0.0628	0.27		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.62"
0.5	104	0.0314	3.60		**Shallow Concentrated Flow, Segment #2** Paved Kv= 20.3 fps
5.2	180	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Subcatchment #1



Summary for Subcatchment 2S: Subcatchment #2

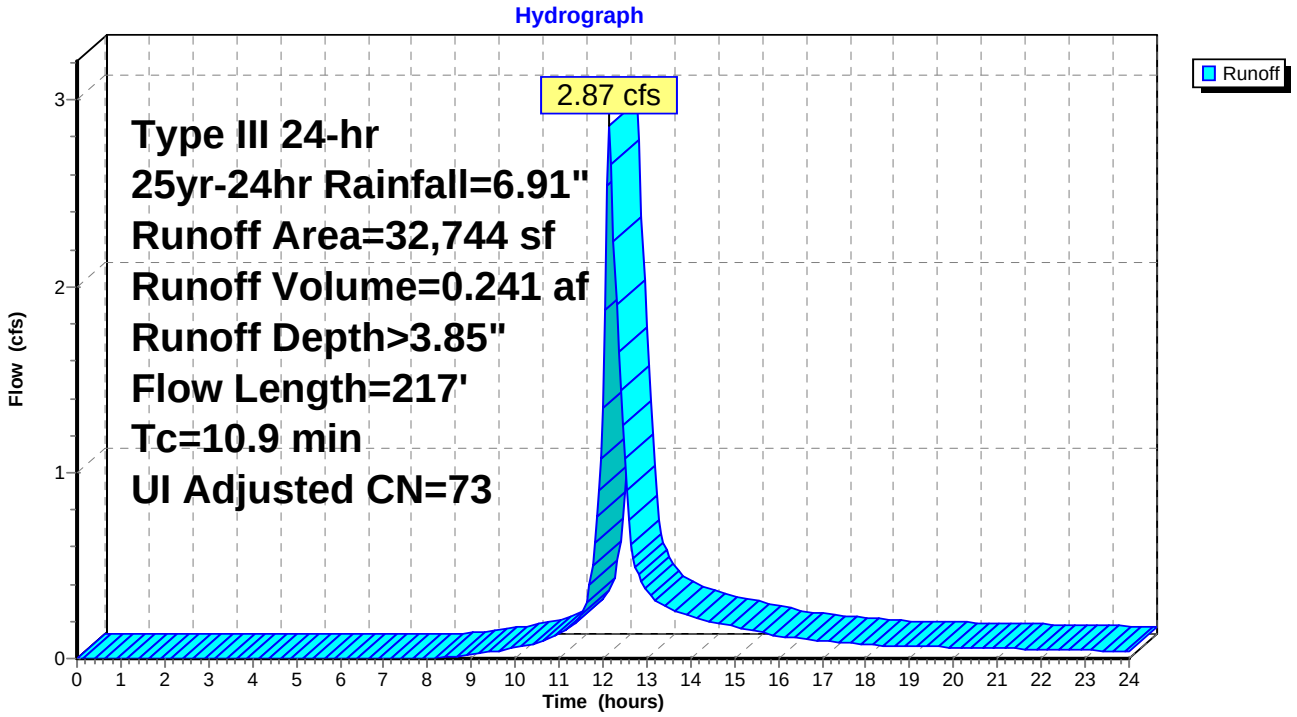
Runoff = 2.87 cfs @ 12.16 hrs, Volume= 0.241 af, Depth> 3.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Adj	Description
2,190	98		Unconnected roofs, HSG C
15,325	74		>75% Grass cover, Good, HSG C
424	98		Paved parking, HSG C
14,805	70		Woods, Good, HSG C
32,744	74	73	Weighted Average, UI Adjusted
30,130			92.02% Pervious Area
2,614			7.98% Impervious Area
2,190			83.78% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0500	0.23		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.62"
2.7	16	0.0780	0.10		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.62"
3.3	34	0.0290	0.17		**Sheet Flow, Segment #3** Grass: Short n= 0.150 P2= 3.62"
0.8	69	0.0400	1.40		**Shallow Concentrated Flow, Segment #4** Short Grass Pasture Kv= 7.0 fps
0.4	48	0.1875	2.17		**Shallow Concentrated Flow, Segment #5** Woodland Kv= 5.0 fps
10.9	217	Total			

Subcatchment 2S: Subcatchment #2



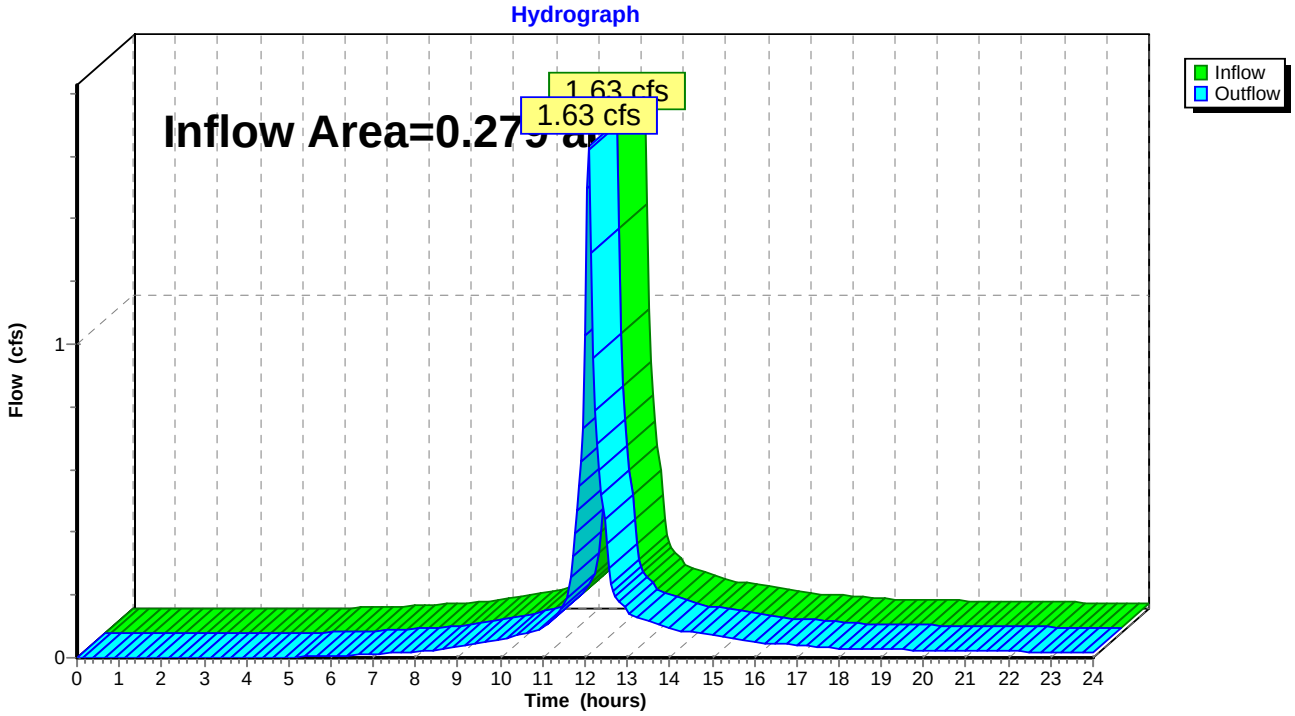
Summary for Reach 100R: Final Reach #100

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.279 ac, 50.09% Impervious, Inflow Depth > 5.28" for 25yr-24hr event
Inflow = 1.63 cfs @ 12.09 hrs, Volume= 0.123 af
Outflow = 1.63 cfs @ 12.09 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

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

Reach 100R: Final Reach #100



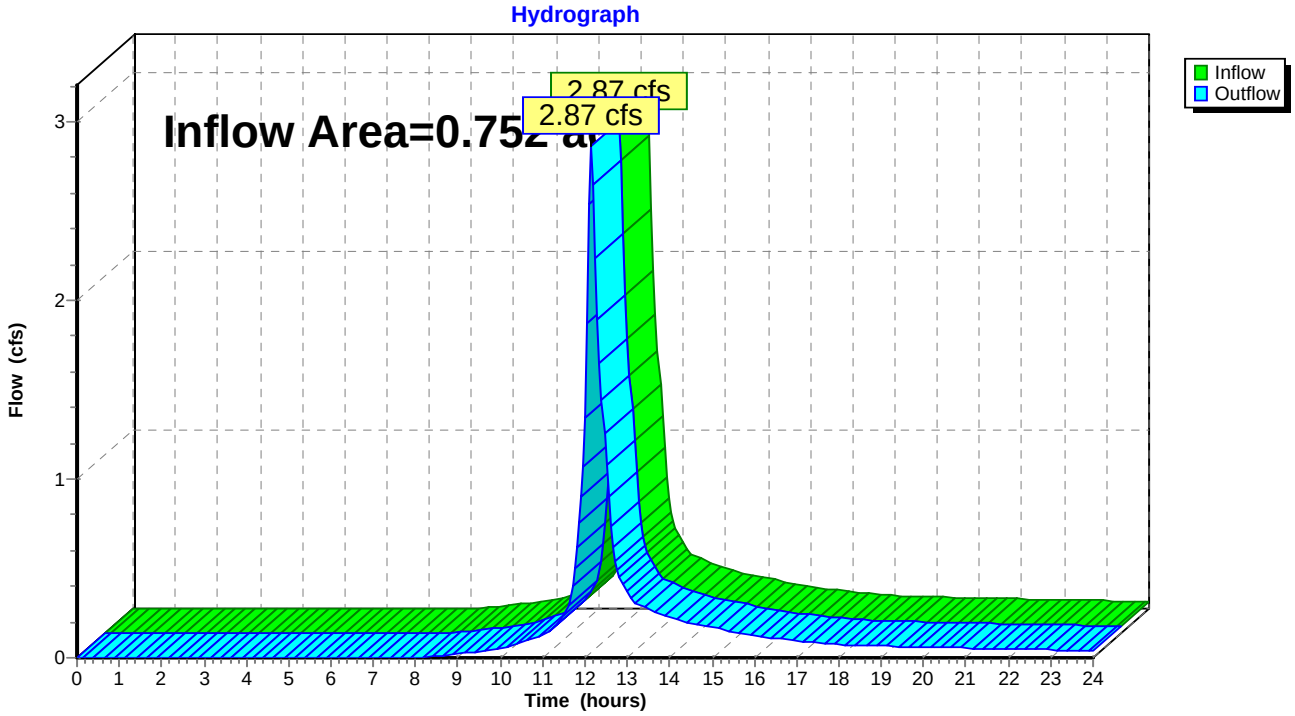
Summary for Reach 200R: Final Reach #200

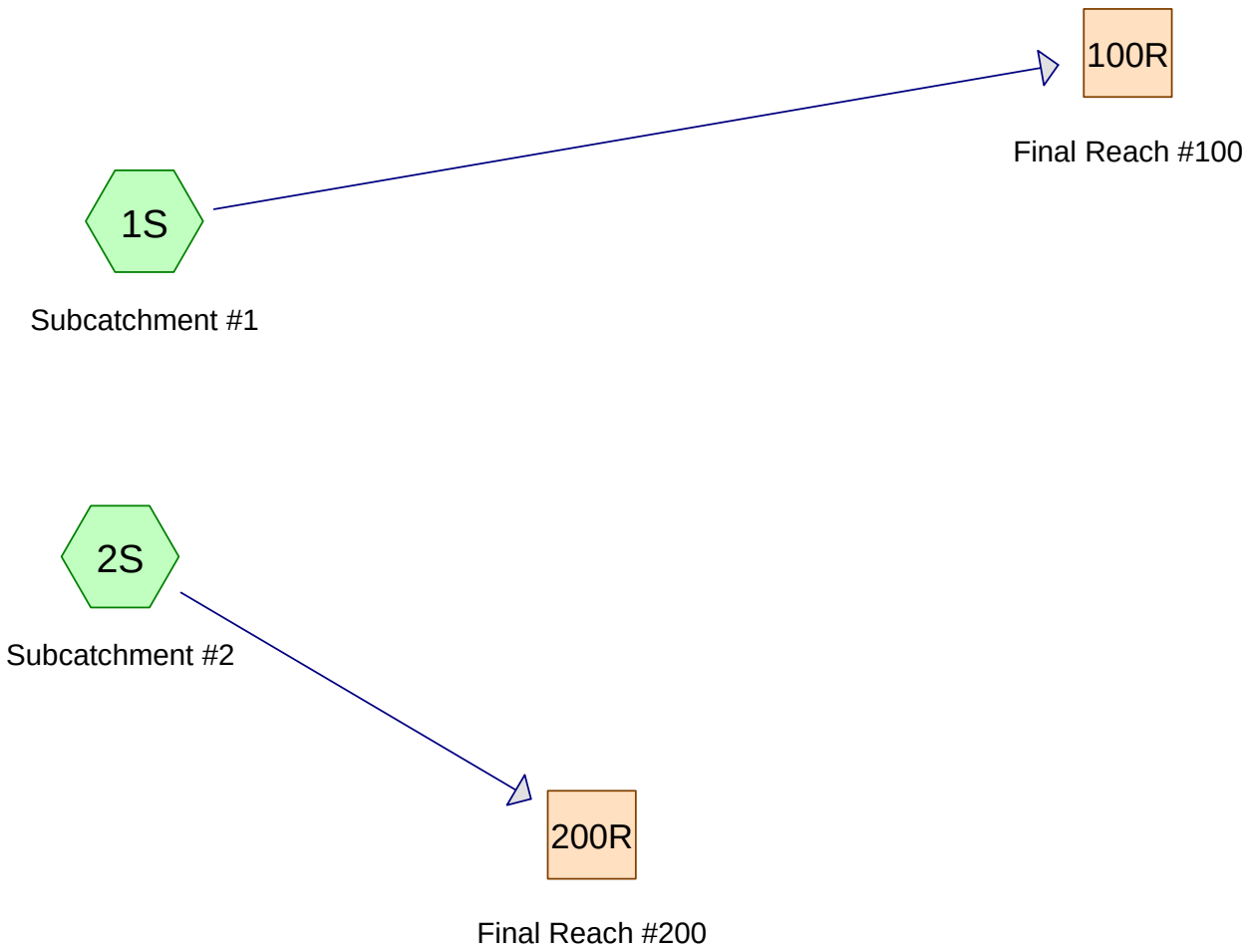
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.752 ac, 7.98% Impervious, Inflow Depth > 3.85" for 25yr-24hr event
Inflow = 2.87 cfs @ 12.16 hrs, Volume= 0.241 af
Outflow = 2.87 cfs @ 12.16 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

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

Reach 200R: Final Reach #200





Subcat Reach Pond Link

Routing Diagram for 20-136 W1 Existing Watershed
Prepared by Berry Surveying & Engineering, Printed 5/5/2021
HydroCAD® 10.00-25 s/n 07605 © 2019 HydroCAD Software Solutions LLC

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>2.20"
Flow Length=180' Tc=6.0 min CN=86 Runoff=0.70 cfs 0.051 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>1.26"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=0.90 cfs 0.079 af

Reach 100R: Final Reach #100 Inflow=0.70 cfs 0.051 af
Outflow=0.70 cfs 0.051 af

Reach 200R: Final Reach #200 Inflow=0.90 cfs 0.079 af
Outflow=0.90 cfs 0.079 af

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>3.90"
Flow Length=180' Tc=6.0 min CN=86 Runoff=1.22 cfs 0.090 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>2.64"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=1.96 cfs 0.165 af

Reach 100R: Final Reach #100 Inflow=1.22 cfs 0.090 af
Outflow=1.22 cfs 0.090 af

Reach 200R: Final Reach #200 Inflow=1.96 cfs 0.165 af
Outflow=1.96 cfs 0.165 af

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>5.28"
Flow Length=180' Tc=6.0 min CN=86 Runoff=1.63 cfs 0.123 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>3.85"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=2.87 cfs 0.241 af

Reach 100R: Final Reach #100 Inflow=1.63 cfs 0.123 af
Outflow=1.63 cfs 0.123 af

Reach 200R: Final Reach #200 Inflow=2.87 cfs 0.241 af
Outflow=2.87 cfs 0.241 af

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>6.58"
Flow Length=180' Tc=6.0 min CN=86 Runoff=2.01 cfs 0.153 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>5.03"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=3.74 cfs 0.315 af

Reach 100R: Final Reach #100 Inflow=2.01 cfs 0.153 af
Outflow=2.01 cfs 0.153 af

Reach 200R: Final Reach #200 Inflow=3.74 cfs 0.315 af
Outflow=3.74 cfs 0.315 af

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

Subcatchment 1S: Subcatchment #1 Runoff Area=12,139 sf 50.09% Impervious Runoff Depth>8.15"
Flow Length=180' Tc=6.0 min CN=86 Runoff=2.46 cfs 0.189 af

Subcatchment 2S: Subcatchment #2 Runoff Area=32,744 sf 7.98% Impervious Runoff Depth>6.49"
Flow Length=217' Tc=10.9 min UI Adjusted CN=73 Runoff=4.80 cfs 0.406 af

Reach 100R: Final Reach #100 Inflow=2.46 cfs 0.189 af
Outflow=2.46 cfs 0.189 af

Reach 200R: Final Reach #200 Inflow=4.80 cfs 0.406 af
Outflow=4.80 cfs 0.406 af

DEIDRA BENJAMIN, CWS #295

JOHN P. HAYES, CSS #87

NRCS SOILS:

BxB – BUXTON SILT LOAM, 3 TO 8% SLOPES

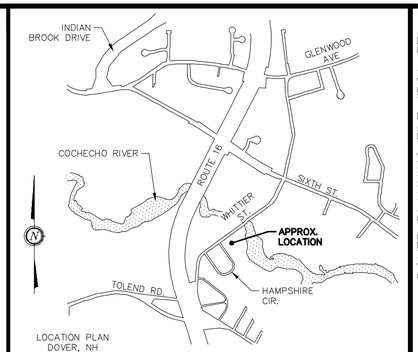
SEE WEBSOIL USDA–NRCS

SITE SPECIFIC SOILS LEGEND

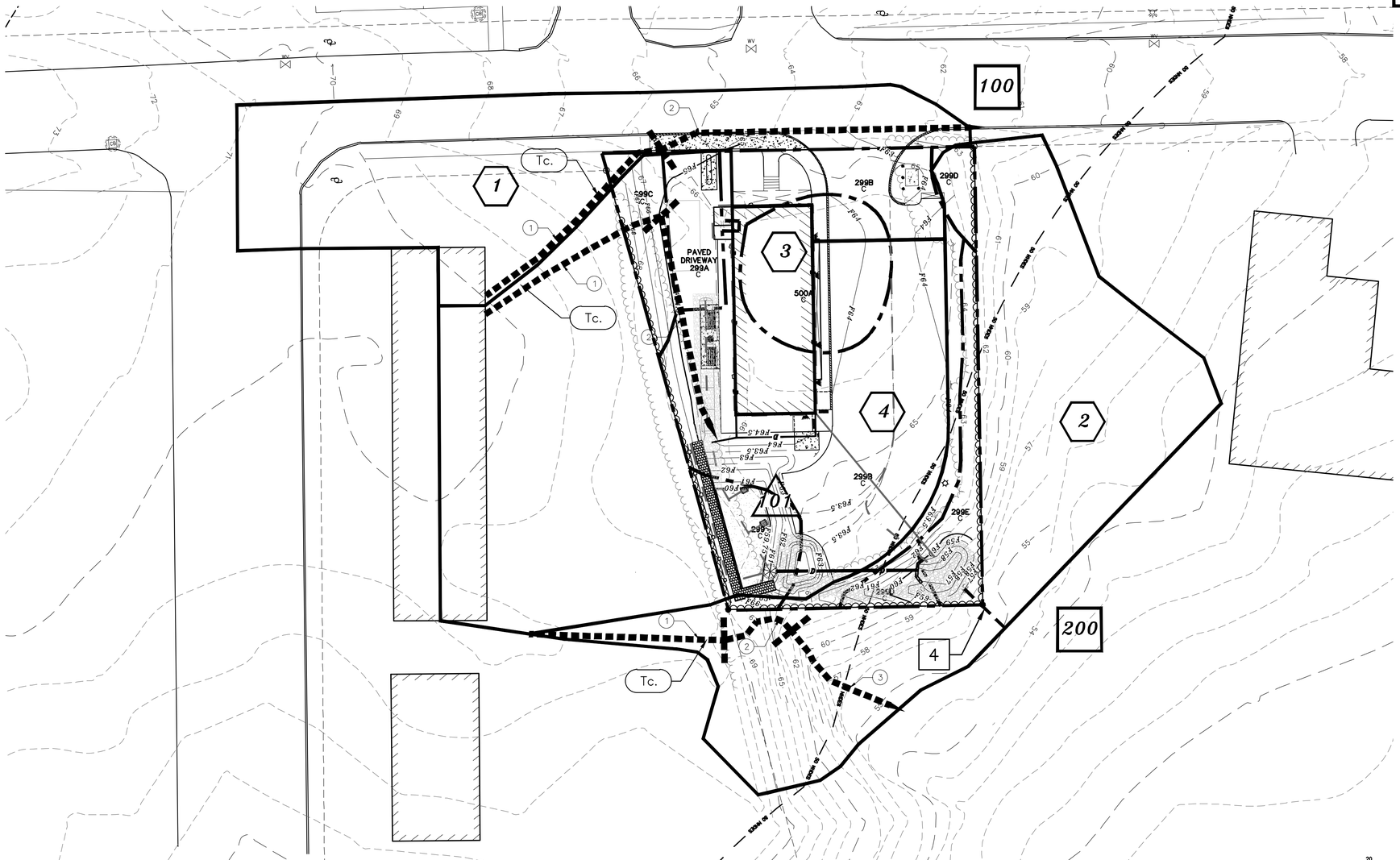
SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
#299B	UDORTHENTS (SMOOTHED)	C
#299C	UDORTHENTS (SMOOTHED)	C
#299D	UDORTHENTS (SMOOTHED)	C
#299E	UDORTHENTS (SMOOTHED)	C
#500A	UDORTHENTS (LOAMY)	C

SLOPE: A = 0–3% B = 3–8% C = 8–15% D = 15–25% E = 25–50% F = 50%+

DENOMINATOR: /VPD = VERY POORLY DRAINED /PD = POORLY DRAINED /SWPD = SOMEWHAT POORLY DRAINED /MWD = MODERATELY WELL DRAINED



LOCATION PLAN
DOVER, NH
NOT TO SCALE



NOTES:

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1–A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE & BELIEF, THIS PARCEL DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF.: FEMA COMMUNITY #330150, MAP #33017C0310E, DATED: SEPTEMBER 30, 2015.
6. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.
7. THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN NOVEMBER OF 2020, WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 77,000.
8. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED WATERSHED CONDITIONS ON TAX MAP 33, LOT 1–A AS OF THE DATE OF THIS SURVEY

SYMBOLS LEGEND:

- SUBCATCHMENT AREA SYMBOL
- FLOW REACH SYMBOL
- POND DEVICE SYMBOL
- TIME OF CONCENTRATION SEGMENT

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER PLANNING FILE #P21–37

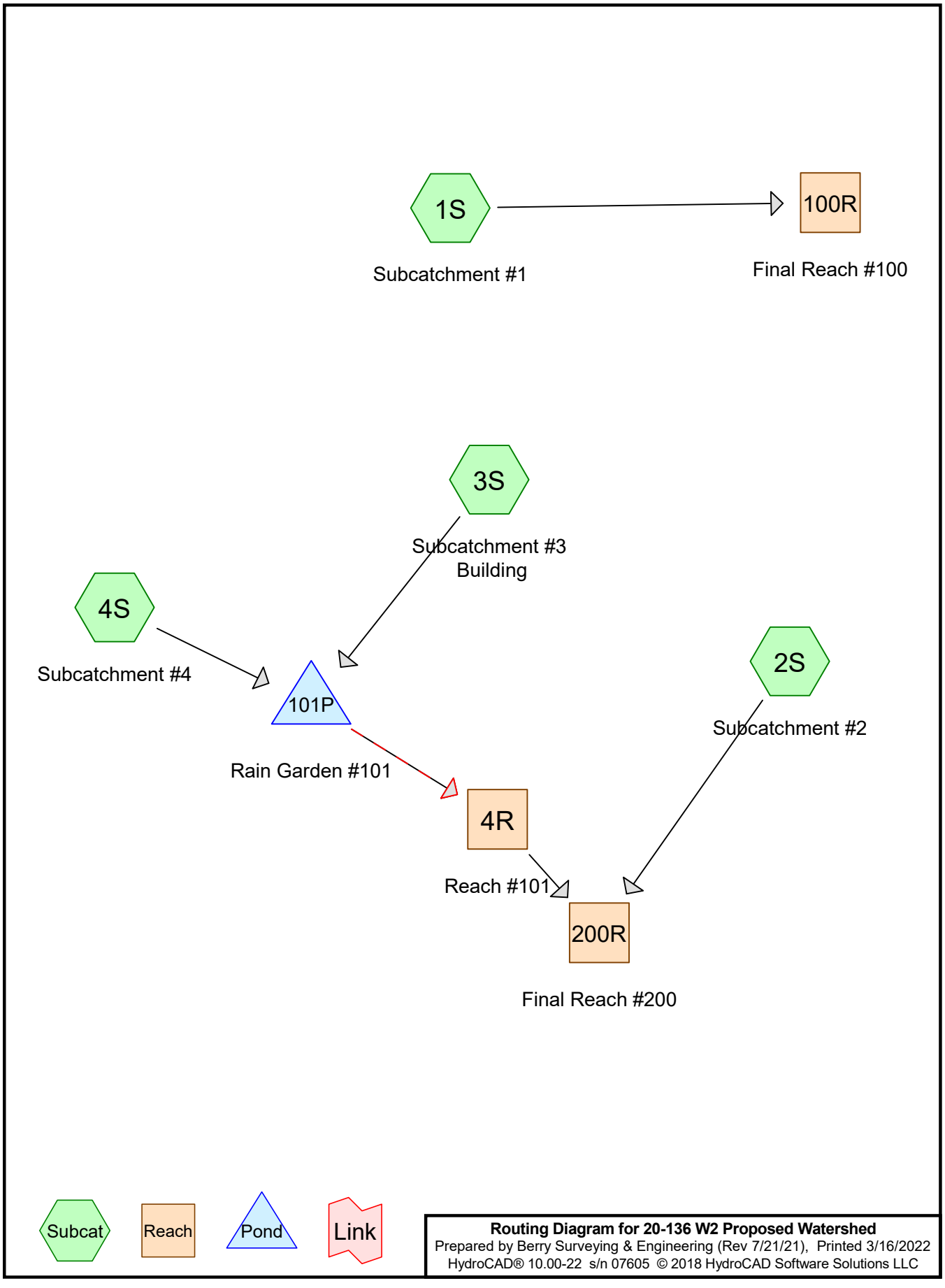
REVISION	DATE	DESCRIPTION
#1	7–20–21	REVISED PER DOVER TRC COMMENT

W–2 PROPOSED CONDITIONS WATERSHED PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1–A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 – 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
NO. 15474
LICENSED PROFESSIONAL ENGINEER



Routing Diagram for 20-136 W2 Proposed Watershed
Prepared by Berry Surveying & Engineering (Rev 7/21/21), Printed 3/16/2022
HydroCAD® 10.00-22 s/n 07605 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.426	74	>75% Grass cover, Good, HSG C (1S, 2S, 4S)
0.142	98	Paved parking, HSG C (1S)
0.116	98	Unconnected pavement, HSG C (4S)
0.088	98	Unconnected roofs, HSG C (1S, 3S, 4S)
0.257	70	Woods, Good, HSG C (2S, 4S)
1.030	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.030	HSG C	1S, 2S, 3S, 4S
0.000	HSG D	
0.000	Other	
1.030		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.426	0.000	0.000	0.426	>75% Grass cover, Good	1S, 2S, 4S
0.000	0.000	0.142	0.000	0.000	0.142	Paved parking	1S
0.000	0.000	0.116	0.000	0.000	0.116	Unconnected pavement	4S
0.000	0.000	0.088	0.000	0.000	0.088	Unconnected roofs	1S, 3S, 4S
0.000	0.000	0.257	0.000	0.000	0.257	Woods, Good	2S, 4S
0.000	**0.000**	**1.030**	**0.000**	**0.000**	**1.030**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	101P	57.25	57.00	46.5	0.0054	0.012	12.0	0.0	0.0

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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>5.62"
Flow Length=180' Tc=6.0 min CN=89 Runoff=1.45 cfs 0.110 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>3.64"
Flow Length=132' Tc=8.9 min CN=71 Runoff=1.23 cfs 0.099 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>6.67"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>4.94"
Flow Length=137' Tc=6.0 min CN=83 Runoff=2.38 cfs 0.176 af

Reach 4R: Reach #101 Avg. Flow Depth=0.11' Max Vel=2.81 fps Inflow=1.37 cfs 0.190 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=1.40 cfs 0.190 af

Reach 100R: Final Reach #100 Inflow=1.45 cfs 0.110 af
Outflow=1.45 cfs 0.110 af

Reach 200R: Final Reach #200 Inflow=2.59 cfs 0.289 af
Outflow=2.59 cfs 0.289 af

Pond 101P: Rain Garden #101 Peak Elev=62.32' Storage=2,379 cf Inflow=2.65 cfs 0.199 af
Primary=1.37 cfs 0.190 af Secondary=0.00 cfs 0.000 af Outflow=1.37 cfs 0.190 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.408 af Average Runoff Depth = 4.75"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

Summary for Subcatchment 1S: Subcatchment #1

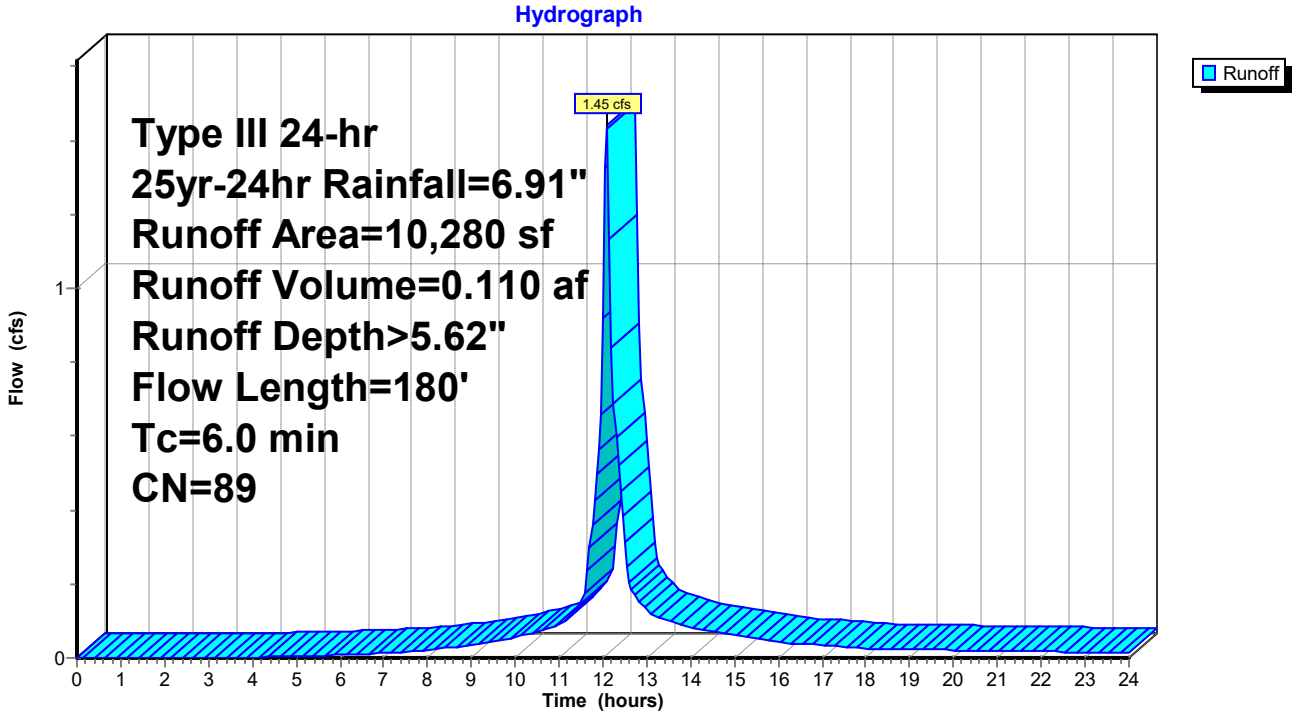
Runoff = 1.45 cfs @ 12.09 hrs, Volume= 0.110 af, Depth> 5.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Description
444	98	Unconnected roofs, HSG C
3,660	74	>75% Grass cover, Good, HSG C
6,176	98	Paved parking, HSG C
10,280	89	Weighted Average
3,660		35.60% Pervious Area
6,620		64.40% Impervious Area
444		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	76	0.0628	0.27		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.62"
0.5	104	0.0314	3.60		**Shallow Concentrated Flow, Segment #2** Paved Kv= 20.3 fps
5.2	180	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Subcatchment #1



Summary for Subcatchment 2S: Subcatchment #2

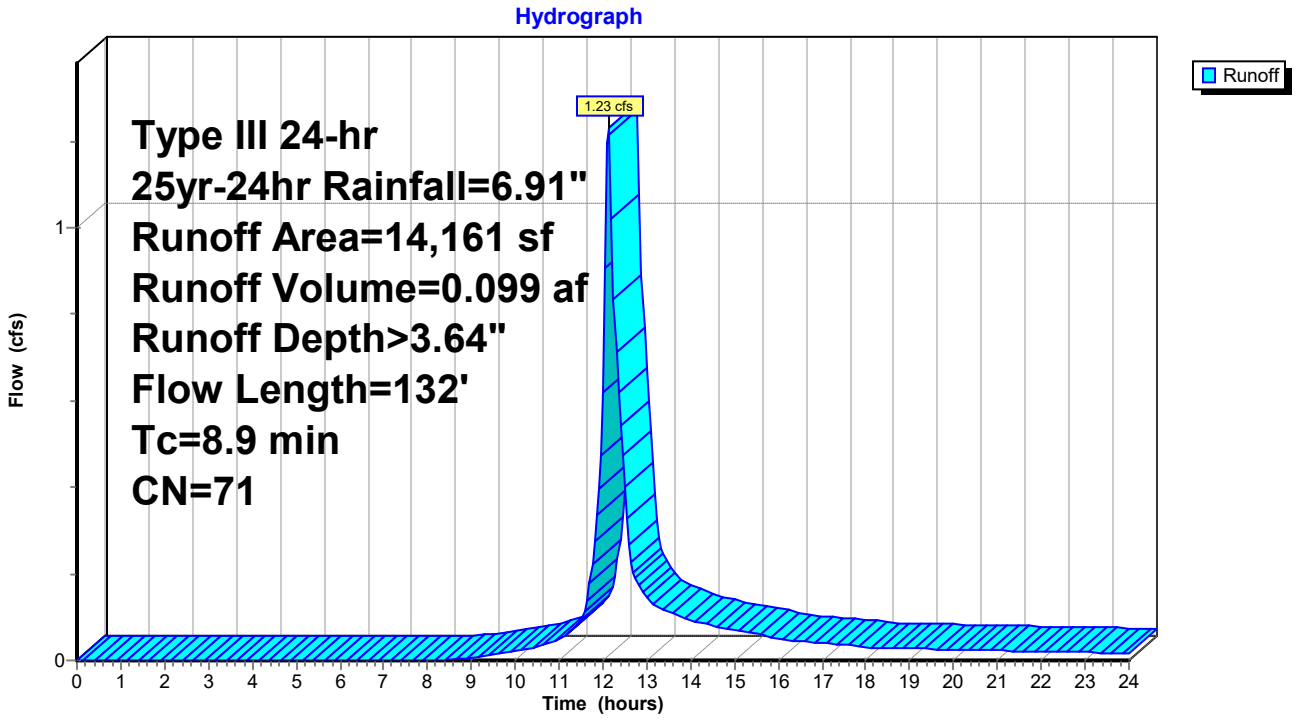
Runoff = 1.23 cfs @ 12.13 hrs, Volume= 0.099 af, Depth> 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Description
3,476	74	>75% Grass cover, Good, HSG C
10,685	70	Woods, Good, HSG C
14,161	71	Weighted Average
14,161		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	64	0.0234	0.18		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.62"
2.5	26	0.2593	0.18		**Sheet Flow, Segment #2** Woods: Light underbrush n= 0.400 P2= 3.62"
0.3	42	0.1727	2.08		**Shallow Concentrated Flow, Segment #3** Woodland Kv= 5.0 fps
8.9	132	Total			

Subcatchment 2S: Subcatchment #2



Summary for Subcatchment 3S: Subcatchment #3 Building

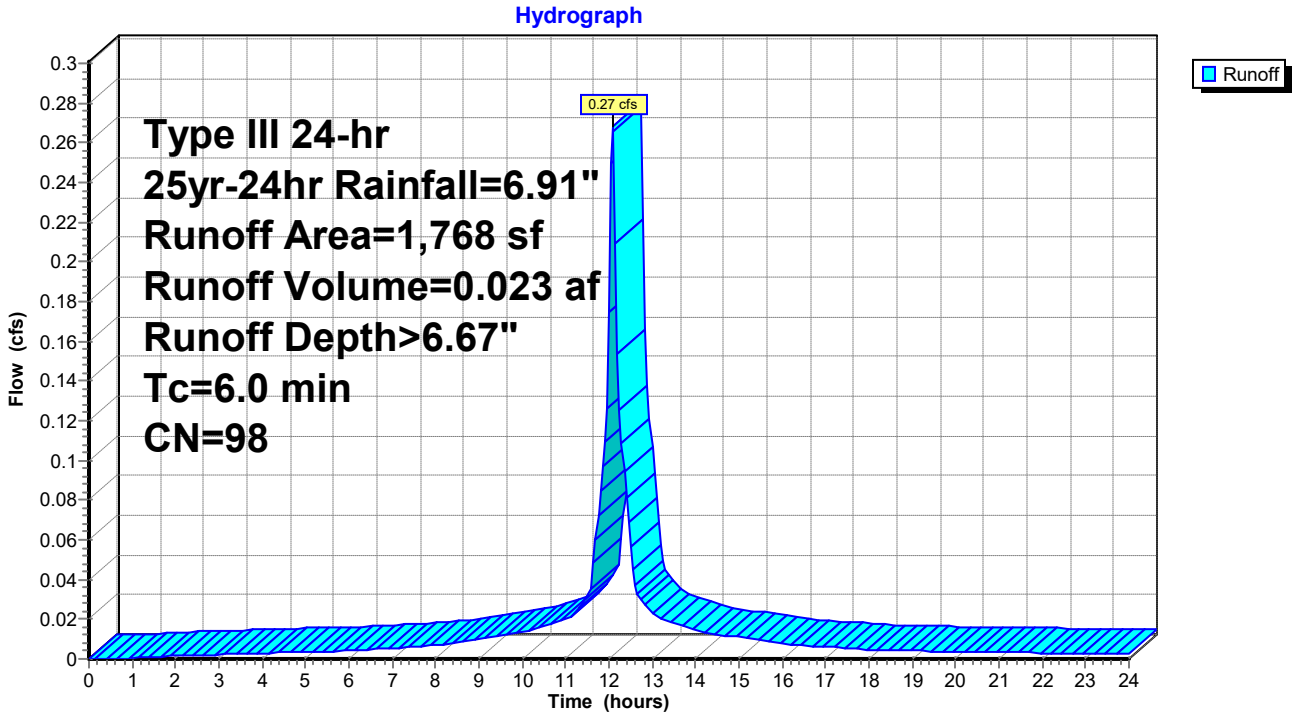
Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Description
1,768	98	Unconnected roofs, HSG C
1,768		100.00% Impervious Area
1,768		100.00% Unconnected

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

Subcatchment 3S: Subcatchment #3 Building



Summary for Subcatchment 4S: Subcatchment #4

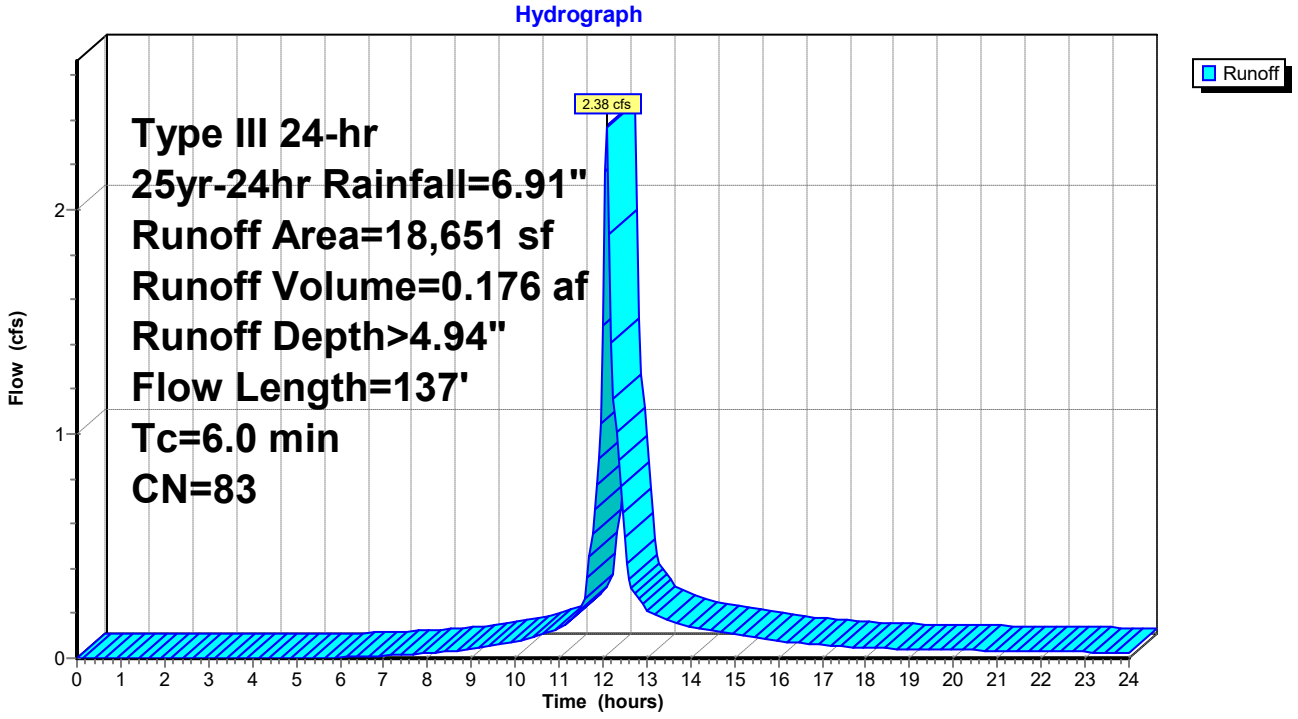
Runoff = 2.38 cfs @ 12.09 hrs, Volume= 0.176 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr-24hr Rainfall=6.91"

Area (sf)	CN	Description
1,641	98	Unconnected roofs, HSG C
11,413	74	>75% Grass cover, Good, HSG C
5,066	98	Unconnected pavement, HSG C
531	70	Woods, Good, HSG C
18,651	83	Weighted Average
11,944		64.04% Pervious Area
6,707		35.96% Impervious Area
6,707		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	67	0.1346	0.36		**Sheet Flow, Segment #1** Grass: Short n= 0.150 P2= 3.62"
0.7	70	0.0143	1.79		**Shallow Concentrated Flow, Segment #2** Grassed Waterway Kv= 15.0 fps
3.8	137	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Subcatchment #4



Summary for Reach 4R: Reach #101

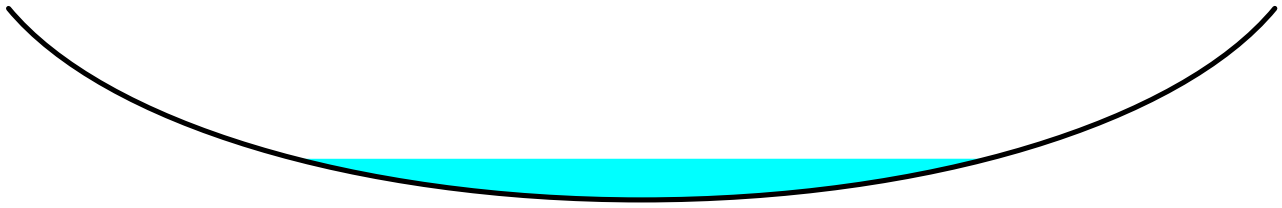
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=4)

Inflow Area = 0.469 ac, 41.51% Impervious, Inflow Depth > 4.87" for 25yr-24hr event
Inflow = 1.37 cfs @ 12.24 hrs, Volume= 0.190 af
Outflow = 1.40 cfs @ 12.25 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.81 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 0.2 min

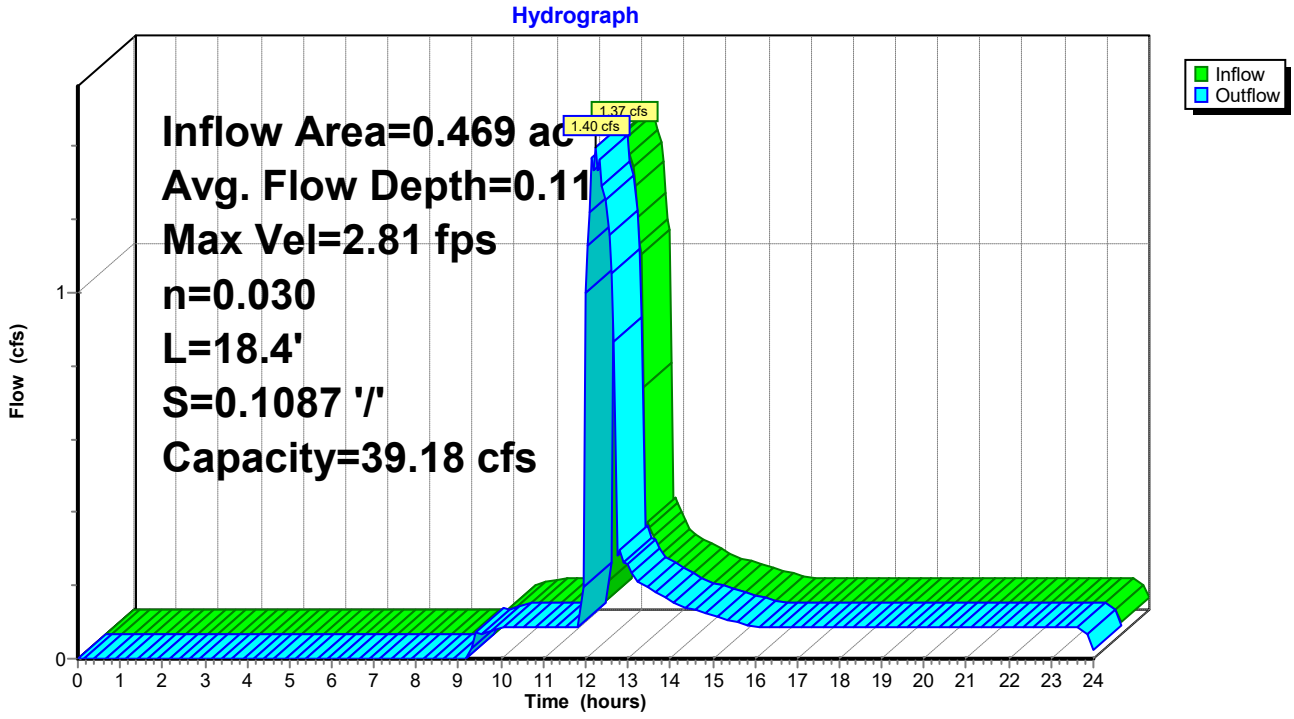
Peak Storage= 9 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 0.50' Flow Area= 5.0 sf, Capacity= 39.18 cfs

15.00' x 0.50' deep Parabolic Channel, n= 0.030 Earth, grassed & winding
Length= 18.4' Slope= 0.1087 '/'
Inlet Invert= 57.00', Outlet Invert= 55.00'



‡

Reach 4R: Reach #101



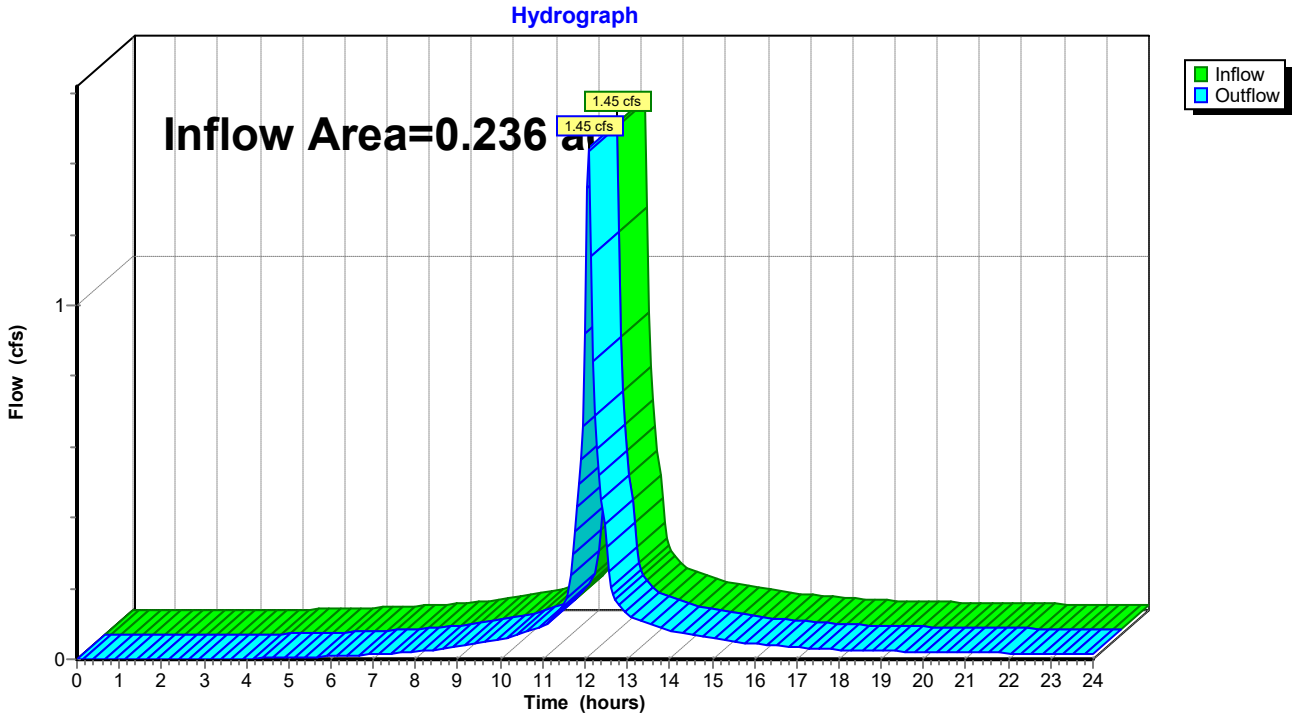
Summary for Reach 100R: Final Reach #100

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.236 ac, 64.40% Impervious, Inflow Depth > 5.62" for 25yr-24hr event
Inflow = 1.45 cfs @ 12.09 hrs, Volume= 0.110 af
Outflow = 1.45 cfs @ 12.09 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

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

Reach 100R: Final Reach #100



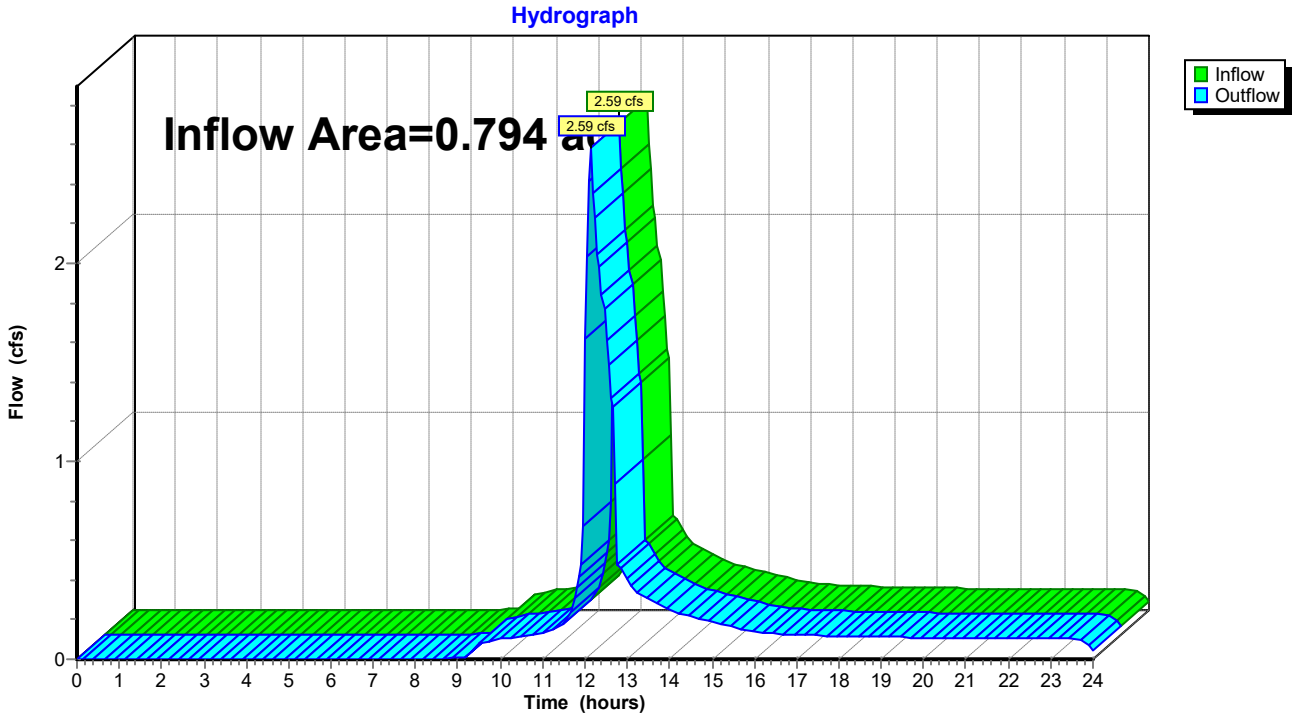
Summary for Reach 200R: Final Reach #200

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.794 ac, 24.51% Impervious, Inflow Depth > 4.37" for 25yr-24hr event
Inflow = 2.59 cfs @ 12.15 hrs, Volume= 0.289 af
Outflow = 2.59 cfs @ 12.15 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min

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

Reach 200R: Final Reach #200



Summary for Pond 101P: Rain Garden #101

Inflow Area = 0.469 ac, 41.51% Impervious, Inflow Depth > 5.09" for 25yr-24hr event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 0.199 af
Outflow = 1.37 cfs @ 12.24 hrs, Volume= 0.190 af, Atten= 48%, Lag= 8.9 min
Primary = 1.37 cfs @ 12.24 hrs, Volume= 0.190 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 62.32' @ 12.24 hrs Surf.Area= 366 sf Storage= 2,379 cf
Flood Elev= 63.50' Surf.Area= 366 sf Storage= 3,572 cf

Plug-Flow detention time= 117.6 min calculated for 0.190 af (96% of inflow)
Center-of-Mass det. time= 93.4 min (887.3 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1	57.25'	180 cf	**Stone Base (Irregular)** Listed below (Recalc) -Impervious 449 cf Overall x 40.0% Voids
#2	58.25'	110 cf	**Bio Media (Irregular)** Listed below (Recalc) 549 cf Overall x 20.0% Voids
#3	57.25'	415 cf	**StormTech Base (Irregular)** Listed below (Recalc) -Impervious 1,313 cf Overall - 276 cf Embedded = 1,037 cf x 40.0% Voids
#4	59.75'	2,473 cf	**Open Water Storage (Irregular)** Listed below (Recalc) -Impervious
#5	57.75'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #3 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#6	61.00'	120 cf	**Sediment Forebay (Irregular)** Listed below (Recalc) -Impervious
		3,572 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
57.25	449	121.1	0	0	449
58.25	449	121.1	449	449	570

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
58.25	366	84.8	0	0	366
59.75	366	84.8	549	549	493

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
57.25	375	107.9	0	0	375
60.75	375	107.9	1,313	1,313	753

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
59.75	366	84.8	0	0	366
60.00	390	86.8	94	94	401
61.00	488	94.8	438	533	548
62.00	633	106.6	559	1,092	762
62.50	714	114.3	337	1,428	908
63.00	1,025	149.6	432	1,860	1,652
63.50	1,437	209.8	613	2,473	3,376

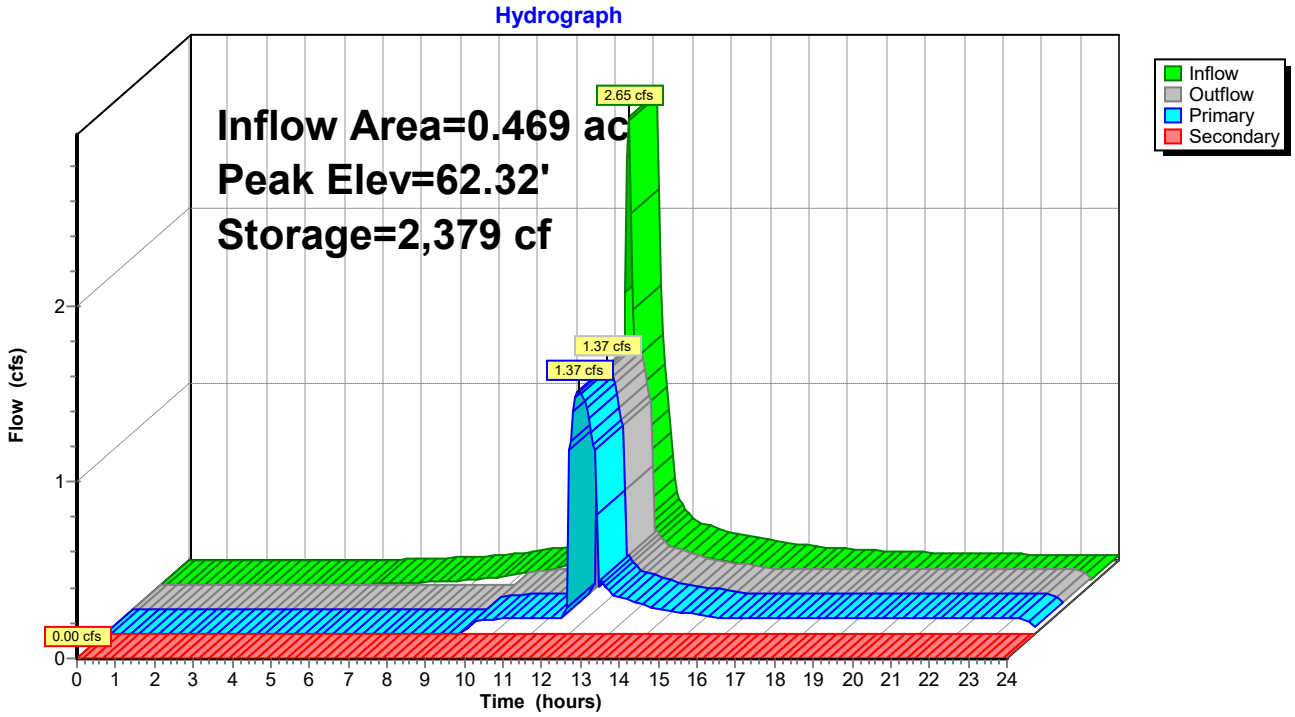
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
61.00	32	22.4	0	0	32
62.00	96	38.3	61	61	115
62.50	139	45.3	58	120	166

Device	Routing	Invert	Outlet Devices
#1	Primary	57.25'	**12.0" Round 12" HDPE N-12** L= 46.5' Ke= 0.900 Inlet / Outlet Invert= 57.25' / 57.00' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	57.25'	**4.5" Vert. 4.5" Orifice in Under Drain** C= 0.600
#3	Device 2	58.25'	**10.000 in/hr Exfiltration Through Media over Surface area**
#4	Device 1	62.75'	**12.0" Vert. 12" Top Structure** C= 0.600
#5	Secondary	63.00'	**5.0' long x 7.0' breadth 5" E Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78
#6	Device 2	61.00'	**12.0" Horiz. 12" Yard Drain** C= 0.600 Limited to weir flow at low heads
#7	Device 2	61.00'	**12.0" Horiz. 12" Yard Drain** C= 0.600 Limited to weir flow at low heads
#8	Device 1	61.50'	**3.0" Vert. 3" Orifice** C= 0.600

Primary OutFlow Max=1.37 cfs @ 12.24 hrs HW=62.32' TW=57.11' (Dynamic Tailwater)
- **1=12" HDPE N-12** (Passes 1.37 cfs of 6.38 cfs potential flow)
  - **2=4.5" Orifice in Under Drain** (Orifice Controls 1.17 cfs @ 10.64 fps)
    - **3=Exfiltration Through Media** (Passes < 0.08 cfs potential flow)
    - **6=12" Yard Drain** (Passes < 4.34 cfs potential flow)
    - **7=12" Yard Drain** (Passes < 4.34 cfs potential flow)
  - **4=12" Top Structure** (Controls 0.00 cfs)
  - **8=3" Orifice** (Orifice Controls 0.20 cfs @ 4.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.25' TW=57.00' (Dynamic Tailwater)
- **5=5" E Spillway** (Controls 0.00 cfs)

Pond 101P: Rain Garden #101



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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>2.47"
Flow Length=180' Tc=6.0 min CN=89 Runoff=0.66 cfs 0.049 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=132' Tc=8.9 min CN=71 Runoff=0.36 cfs 0.031 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>3.38"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>1.96"
Flow Length=137' Tc=6.0 min CN=83 Runoff=0.96 cfs 0.070 af

Reach 4R: Reach #101 Avg. Flow Depth=0.06' Max Vel=1.91 fps Inflow=0.43 cfs 0.073 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=0.42 cfs 0.073 af

Reach 100R: Final Reach #100 Inflow=0.66 cfs 0.049 af
Outflow=0.66 cfs 0.049 af

Reach 200R: Final Reach #200 Inflow=0.59 cfs 0.104 af
Outflow=0.59 cfs 0.104 af

Pond 101P: Rain Garden #101 Peak Elev=61.07' Storage=1,547 cf Inflow=1.10 cfs 0.081 af
Primary=0.43 cfs 0.073 af Secondary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.073 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.161 af Average Runoff Depth = 1.87"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>4.21"
Flow Length=180' Tc=6.0 min CN=89 Runoff=1.10 cfs 0.083 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>2.47"
Flow Length=132' Tc=8.9 min CN=71 Runoff=0.83 cfs 0.067 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>5.22"
Tc=6.0 min CN=98 Runoff=0.21 cfs 0.018 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>3.59"
Flow Length=137' Tc=6.0 min CN=83 Runoff=1.75 cfs 0.128 af

Reach 4R: Reach #101 Avg. Flow Depth=0.10' Max Vel=2.66 fps Inflow=1.12 cfs 0.137 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=1.16 cfs 0.137 af

Reach 100R: Final Reach #100 Inflow=1.10 cfs 0.083 af
Outflow=1.10 cfs 0.083 af

Reach 200R: Final Reach #200 Inflow=1.96 cfs 0.204 af
Outflow=1.96 cfs 0.204 af

Pond 101P: Rain Garden #101 Peak Elev=61.64' Storage=1,884 cf Inflow=1.96 cfs 0.146 af
Primary=1.12 cfs 0.137 af Secondary=0.00 cfs 0.000 af Outflow=1.12 cfs 0.137 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.295 af Average Runoff Depth = 3.44"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>5.62"
Flow Length=180' Tc=6.0 min CN=89 Runoff=1.45 cfs 0.110 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>3.64"
Flow Length=132' Tc=8.9 min CN=71 Runoff=1.23 cfs 0.099 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>6.67"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>4.94"
Flow Length=137' Tc=6.0 min CN=83 Runoff=2.38 cfs 0.176 af

Reach 4R: Reach #101 Avg. Flow Depth=0.11' Max Vel=2.81 fps Inflow=1.37 cfs 0.190 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=1.40 cfs 0.190 af

Reach 100R: Final Reach #100 Inflow=1.45 cfs 0.110 af
Outflow=1.45 cfs 0.110 af

Reach 200R: Final Reach #200 Inflow=2.59 cfs 0.289 af
Outflow=2.59 cfs 0.289 af

Pond 101P: Rain Garden #101 Peak Elev=62.32' Storage=2,379 cf Inflow=2.65 cfs 0.199 af
Primary=1.37 cfs 0.190 af Secondary=0.00 cfs 0.000 af Outflow=1.37 cfs 0.190 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.408 af Average Runoff Depth = 4.75"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>6.94"
Flow Length=180' Tc=6.0 min CN=89 Runoff=1.76 cfs 0.136 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>4.80"
Flow Length=132' Tc=8.9 min CN=71 Runoff=1.62 cfs 0.130 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>8.02"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.027 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>6.22"
Flow Length=137' Tc=6.0 min CN=83 Runoff=2.97 cfs 0.222 af

Reach 4R: Reach #101 Avg. Flow Depth=0.11' Max Vel=2.92 fps Inflow=1.57 cfs 0.235 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=1.58 cfs 0.235 af

Reach 100R: Final Reach #100 Inflow=1.76 cfs 0.136 af
Outflow=1.76 cfs 0.136 af

Reach 200R: Final Reach #200 Inflow=3.03 cfs 0.365 af
Outflow=3.03 cfs 0.365 af

Pond 101P: Rain Garden #101 Peak Elev=62.87' Storage=2,833 cf Inflow=3.29 cfs 0.249 af
Primary=1.57 cfs 0.235 af Secondary=0.00 cfs 0.000 af Outflow=1.57 cfs 0.235 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.516 af Average Runoff Depth = 6.01"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

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

Subcatchment 1S: Subcatchment #1 Runoff Area=10,280 sf 64.40% Impervious Runoff Depth>8.52"
Flow Length=180' Tc=6.0 min CN=89 Runoff=2.14 cfs 0.168 af

Subcatchment 2S: Subcatchment #2 Runoff Area=14,161 sf 0.00% Impervious Runoff Depth>6.23"
Flow Length=132' Tc=8.9 min CN=71 Runoff=2.10 cfs 0.169 af

Subcatchment 3S: Subcatchment #3 Runoff Area=1,768 sf 100.00% Impervious Runoff Depth>9.62"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.033 af

Subcatchment 4S: Subcatchment #4 Runoff Area=18,651 sf 35.96% Impervious Runoff Depth>7.77"
Flow Length=137' Tc=6.0 min CN=83 Runoff=3.66 cfs 0.277 af

Reach 4R: Reach #101 Avg. Flow Depth=0.15' Max Vel=3.47 fps Inflow=2.75 cfs 0.290 af
n=0.030 L=18.4' S=0.1087 '/' Capacity=39.18 cfs Outflow=2.78 cfs 0.290 af

Reach 100R: Final Reach #100 Inflow=2.14 cfs 0.168 af
Outflow=2.14 cfs 0.168 af

Reach 200R: Final Reach #200 Inflow=4.64 cfs 0.459 af
Outflow=4.64 cfs 0.459 af

Pond 101P: Rain Garden #101 Peak Elev=63.14' Storage=3,106 cf Inflow=4.05 cfs 0.310 af
Primary=2.15 cfs 0.285 af Secondary=0.60 cfs 0.006 af Outflow=2.75 cfs 0.290 af

Total Runoff Area = 1.030 ac Runoff Volume = 0.646 af Average Runoff Depth = 7.53"
66.35% Pervious = 0.683 ac 33.65% Impervious = 0.347 ac

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	70.874 degrees West
Latitude	43.198 degrees North
Elevation	0 feet
Date/Time	Tue, 09 Mar 2021 12:38:57 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	2.00	2.60	2.87	**1yr**	2.31	2.76	3.16	3.89	4.45	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.91	2.45	3.15	3.51	**2yr**	2.79	3.38	3.87	4.61	5.24	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.39	3.08	3.98	4.50	**5yr**	3.53	4.33	4.95	5.82	6.57	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.85	**10yr**	1.23	1.69	2.18	2.83	3.66	4.75	5.43	**10yr**	4.21	5.22	5.96	6.94	7.81	**10yr**
25yr	0.46	0.74	0.94	1.30	1.72	2.27	**25yr**	1.49	2.09	2.70	3.53	4.61	6.01	6.96	**25yr**	5.32	6.70	7.63	8.78	9.80	**25yr**
50yr	0.52	0.83	1.06	1.49	2.00	2.67	**50yr**	1.73	2.46	3.18	4.19	5.49	7.18	8.41	**50yr**	6.35	8.09	9.21	10.49	11.65	**50yr**
100yr	0.58	0.94	1.21	1.71	2.33	3.13	**100yr**	2.01	2.89	3.75	4.96	6.53	8.58	10.16	**100yr**	7.59	9.77	11.11	12.54	13.86	**100yr**
200yr	0.64	1.05	1.36	1.96	2.71	3.68	**200yr**	2.34	3.40	4.44	5.90	7.80	10.26	12.28	**200yr**	9.08	11.81	13.40	14.99	16.48	**200yr**
500yr	0.76	1.25	1.63	2.36	3.31	4.55	**500yr**	2.86	4.22	5.51	7.38	9.82	12.99	15.78	**500yr**	11.50	15.18	17.19	19.00	20.75	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.92	1.26	1.58	2.14	2.45	**1yr**	1.90	2.36	2.88	3.36	4.03	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.35	3.04	3.40	**2yr**	2.69	3.27	3.75	4.47	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.77	3.71	4.13	**5yr**	3.29	3.97	4.62	5.41	6.11	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.44	3.12	4.27	4.78	**10yr**	3.78	4.60	5.32	6.24	7.01	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.83	3.64	4.92	5.78	**25yr**	4.36	5.56	6.49	7.54	8.41	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.19	**50yr**	1.52	2.14	2.35	3.19	4.09	5.61	6.67	**50yr**	4.97	6.41	7.53	8.69	9.64	**50yr**
100yr	0.54	0.81	1.01	1.47	2.01	2.51	**100yr**	1.73	2.45	2.63	3.56	4.56	6.38	7.68	**100yr**	5.65	7.38	8.73	10.03	11.04	**100yr**
200yr	0.59	0.89	1.13	1.64	2.29	2.87	**200yr**	1.97	2.80	2.93	3.99	5.09	7.26	8.84	**200yr**	6.42	8.50	10.12	11.57	12.66	**200yr**
500yr	0.69	1.03	1.33	1.93	2.74	3.45	**500yr**	2.36	3.37	3.40	4.61	5.89	8.57	10.64	**500yr**	7.58	10.23	12.29	13.99	15.12	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.24	1.74	2.21	2.88	3.10	**1yr**	2.55	2.98	3.44	4.23	4.82	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.47	1.95	2.51	3.30	3.64	**2yr**	2.92	3.50	4.01	4.76	5.46	**2yr**
5yr	0.39	0.61	0.75	1.03	1.31	1.58	**5yr**	1.13	1.55	1.86	2.50	3.20	4.25	4.87	**5yr**	3.76	4.68	5.29	6.25	7.01	**5yr**
10yr	0.46	0.70	0.87	1.22	1.57	1.92	**10yr**	1.36	1.88	2.24	3.05	3.86	5.22	6.08	**10yr**	4.62	5.85	6.69	7.67	8.55	**10yr**
25yr	0.56	0.85	1.05	1.50	1.98	2.48	**25yr**	1.71	2.43	2.88	3.97	4.97	7.09	8.18	**25yr**	6.28	7.86	8.97	10.10	11.15	**25yr**
50yr	0.64	0.98	1.22	1.75	2.36	3.00	**50yr**	2.04	2.93	3.50	4.83	6.03	8.76	10.25	**50yr**	7.75	9.86	11.22	12.42	13.63	**50yr**
100yr	0.75	1.13	1.42	2.05	2.81	3.63	**100yr**	2.43	3.54	4.24	5.92	7.34	10.83	12.86	**100yr**	9.58	12.36	14.02	15.31	16.68	**100yr**
200yr	0.87	1.31	1.66	2.40	3.35	4.40	**200yr**	2.89	4.30	5.16	7.24	8.92	13.42	16.14	**200yr**	11.88	15.52	17.55	18.85	20.43	**200yr**
500yr	1.07	1.58	2.04	2.96	4.21	5.65	**500yr**	3.64	5.52	6.67	9.47	11.57	17.84	21.80	**500yr**	15.79	20.96	23.63	24.86	26.74	**500yr**

Powered by ACIS Northeast Regional Climate Center

RIP RAP CALCULATIONS

20-136 Dover Housing Authority
48 Whittier Street, Dover, NH

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH

5/6/2021; Rev 7/21/21

Rip Rap equations were obtained from the *Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.* Rip Rap was sized for the 25 year storm event. (Some d50 sizes and T values have been modified)

TAILWATER < HALF THE Do

La = (1.8 x Q) / Do 3/2 + (7 x Do) Q = Peak Flow & Do is Pipe Diameter
W = La + 3*Do or defined channel width
d50 = (0.02 x Q4/3) / (Tw x Do) Tw = Tailwater Depth
T = Largest Stone Size x 1.5

Culvert or Catch Basin	Tailwater (Feet) Tw	Discharge (C.F.S.) Q	Diameter of Pipe Do	Length of Rip Rap La (feet)	Width of Rip Rap W (feet)	d50-Stone Rip Rap d50(ft.)	Actual Size	Thickness
12" HDPE (Pond #101)	0.20	1.37	1.00	9.5	12.5	0.15	0.50	1.20

Please note that the designer chose to use the 25 Year Event for the dimensional calculations.

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d50 Size =	0.5	Feet	6	Inches
% of Weight Smaller Than the Given d50 Size	Size of Stone (Inches) From		To	
100%	9		12	
85%	8		11	
50%	6		9	
50%	6		9	
15%	2		3	

Summary for Pond 101P: Rain Garden #101

Inflow Area = 0.469 ac, 41.51% Impervious, Inflow Depth > 6.38" for 50yr-24hr event
Inflow = 3.29 cfs @ 12.09 hrs, Volume= 0.249 af
Outflow = 1.57 cfs @ 12.26 hrs, Volume= 0.235 af, Atten= 52%, Lag= 10.3 min
Primary = 1.57 cfs @ 12.26 hrs, Volume= 0.235 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 62.87' @ 12.26 hrs Surf.Area= 366 sf Storage= 2,833 cf
Flood Elev= 63.50' Surf.Area= 366 sf Storage= 3,572 cf

Plug-Flow detention time= 103.5 min calculated for 0.235 af (94% of inflow)
Center-of-Mass det. time= 73.1 min (861.3 - 788.2)

Volume	Invert	Avail.Storage	Storage Description
#1	57.25'	180 cf	**Stone Base (Irregular)** Listed below (Recalc) -Impervious 449 cf Overall x 40.0% Voids
#2	58.25'	110 cf	**Bio Media (Irregular)** Listed below (Recalc) 549 cf Overall x 20.0% Voids
#3	57.25'	415 cf	**StormTech Base (Irregular)** Listed below (Recalc) -Impervious 1,313 cf Overall - 276 cf Embedded = 1,037 cf x 40.0% Voids
#4	59.75'	2,473 cf	**Open Water Storage (Irregular)** Listed below (Recalc) -Impervious
#5	57.75'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #3 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#6	61.00'	120 cf	**Sediment Forebay (Irregular)** Listed below (Recalc) -Impervious
		3,572 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
57.25	449	121.1	0	0	449
58.25	449	121.1	449	449	570

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
58.25	366	84.8	0	0	366
59.75	366	84.8	549	549	493

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
57.25	375	107.9	0	0	375
60.75	375	107.9	1,313	1,313	753

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
59.75	366	84.8	0	0	366
60.00	390	86.8	94	94	401
61.00	488	94.8	438	533	548
62.00	633	106.6	559	1,092	762
62.50	714	114.3	337	1,428	908
63.00	1,025	149.6	432	1,860	1,652
63.50	1,437	209.8	613	2,473	3,376

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
61.00	32	22.4	0	0	32
62.00	96	38.3	61	61	115
62.50	139	45.3	58	120	166

Device	Routing	Invert	Outlet Devices
#1	Primary	57.25'	**12.0" Round 12" HDPE N-12** L= 46.5' Ke= 0.900 Inlet / Outlet Invert= 57.25' / 57.00' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	57.25'	**4.5" Vert. 4.5" Orifice in Under Drain** C= 0.600
#3	Device 2	58.25'	**10.000 in/hr Exfiltration Through Media over Surface area**
#4	Device 1	62.75'	**12.0" Vert. 12" Top Structure** C= 0.600
#5	Secondary	63.00'	**5.0' long x 7.0' breadth 5" E Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78
#6	Device 2	61.00'	**12.0" Horiz. 12" Yard Drain** C= 0.600 Limited to weir flow at low heads
#7	Device 2	61.00'	**12.0" Horiz. 12" Yard Drain** C= 0.600 Limited to weir flow at low heads
#8	Device 1	61.50'	**3.0" Vert. 3" Orifice** C= 0.600

Primary OutFlow Max=1.56 cfs @ 12.26 hrs HW=62.87' TW=57.11' (Dynamic Tailwater)
- **1=12" HDPE N-12** (Passes 1.56 cfs of 6.75 cfs potential flow)
  - **2=4.5" Orifice in Under Drain** (Orifice Controls 1.24 cfs @ 11.22 fps)
    - **3=Exfiltration Through Media** (Passes < 0.08 cfs potential flow)
    - **6=12" Yard Drain** (Passes < 5.17 cfs potential flow)
    - **7=12" Yard Drain** (Passes < 5.17 cfs potential flow)
  - **4=12" Top Structure** (Orifice Controls 0.06 cfs @ 1.16 fps)
  - **8=3" Orifice** (Orifice Controls 0.26 cfs @ 5.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.25' TW=57.00' (Dynamic Tailwater)
- **5=5" E Spillway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 101P: Rain Garden #101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
57.25	0	0
57.35	0	33
57.45	0	66
57.55	0	99
57.65	0	132
57.75	0	165
57.85	0	207
57.95	0	250
58.05	0	292
58.15	0	334
58.25	**366**	376
58.35	366	408
58.45	366	439
58.55	366	470
58.65	366	500
58.75	366	531
58.85	366	561
58.95	366	591
59.05	366	621
59.15	366	650
59.25	366	680
59.35	366	708
59.45	366	737
59.55	366	765
59.65	366	792
59.75	366	819
59.85	366	876
59.95	366	932
60.05	366	988
60.15	366	1,044
60.25	366	1,100
60.35	366	1,157
60.45	366	1,214
60.55	366	1,273
60.65	366	1,333
60.75	366	1,394
60.85	366	1,440
60.95	366	1,488
61.05	366	1,539
61.15	366	1,592
61.25	366	1,648
61.35	366	1,706
61.45	366	1,766
61.55	366	1,827
61.65	366	1,891
61.75	366	1,957
61.85	366	2,026
61.95	366	2,096
62.05	366	2,169
62.15	366	2,244
62.25	366	2,322
62.35	366	2,402
62.45	366	2,485
62.55	366	2,564
62.65	366	2,641
62.75	366	2,724
62.85	366	2,814
62.95	366	2,909
63.05	366	3,012
63.15	366	3,122
63.25	366	3,240
63.35	366	3,367
63.45	366	**3,502**
63.55	366	**3,572**
63.65	366	3,572
63.75	366	3,572

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Rain Garden #101**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.42	ac	A = Area draining to the practice	
0.15	ac	A_I = Impervious area draining to the practice	
0.35	decimal	I = percent impervious area draining to the practice, in decimal form	
0.36	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.15	ac-in	WQV= 1" x Rv x A	
557	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
139	cf	25% x WQV (check calc for sediment forebay volume)	
418	cf	75% x WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
120	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
395	sf	A_{SA} = surface area of the practice	
10.00	iph	$Ksat_{DESIGN}$ = design infiltration rate[1]	
Yes	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
1.7	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
58.25	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
63.30	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
60.30	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
58.25	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
(2.05)	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
(5.05)	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
63.06	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
63.50	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	
N/A	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← **yes**
1,408	cf	V = volume of storage[3] (attach a stage-storage table)	← **≥ WQV**
18.0	inches	D_{FC} = filter course thickness	← **18", or 24" if within GPA**
Sheet	R-101	Note what sheet in the plan set contains the filter course specification	
2.0	:1	Pond side slopes	← **≥3:1**
Sheet	R-101	Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
-	acres	A_{SA} = surface area of the pervious pavement	
#DIV/0!	:1	ratio of the contributing area to the pervious surface area	← **5:1**
-	inches	D_{FC} = filter course thickness	← **12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	← **304.1 sand**

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:

Sediment Forebay volume paved parking and traveled way only.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Strafford County, New Hampshire



March 30, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Strafford County, New Hampshire.....13
BzB—Buxton silt loam, 3 to 8 percent slopes.....13
W—Water.....14
References.....15

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,230 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 20, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	6.0	99.8%
W	Water	0.0	0.2%
Totals for Area of Interest		**6.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Strafford County, New Hampshire

BzB—Buxton silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9d6p
Elevation: 0 to 260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buxton

Setting

Parent material: Glaciomarine

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 28 inches: silty clay loam
H3 - 28 to 43 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F145XY006CT - Semi-Rich Moist Lake Plain
Hydric soil rating: No

Minor Components

Elmwood

Percent of map unit: 10 percent
Hydric soil rating: No

Not named

Percent of map unit: 5 percent
Hydric soil rating: No

W—Water

Map Unit Composition

Water (less than 40 acres): 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

John P. Hayes III CSS, CWS,
7 Limestone Way
North Hampton, NH 03862
603-205-4396
johnphayes@comcast.net

3/19/21

Job # 21-010

Christopher Berry
Berry Surveying and Engineering
335 Second Crown Point Road
Barrington NH 03825

3/11/21
Site Specific Soil Survey
Map 33 Lot 1-A
48 Whittier Street Dover, NH

Dear Chris,

This letter report presents the findings of a Site Specific Soil Survey conducted on the referenced property by John P. Hayes III on March 11, 2021. The soil survey was conducted in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standard For New Hampshire and Vermont, Version 5.0, December 2017, Special Publication # 3, published by the Society of Soil Scientist of Northern New England.

The property that is subject of the soil survey is located on the southwest side of Whittier Street, and southwest of the Cochecho River, in Dover NH. The area of the pacel is 0.35 acres in size. The plans used for these soil maps are a 20 scale plan, where 1 inch equals 20 feet, with one foot contours.

The purpose of the soil survey is to provide the client with soils information for urban and suburban or rural land planning. Soil characteristics on the property were evaluated through observation of numerous test holes and hand auger probes conducted throughout the property. Slope phases were determined with the use of the topography provided on the plan. The Site-specific Soil Map Units identified are taken from the New Hampshire State-Wide Numerical Soils Legend, Issue #10 January 2011, and are briefly described below. Official Series Descriptions (OSD) for each of these soil series are enclosed with this report. The soil map units comply with the Range In Characteristics described in the OSD. Dissimilar inclusions are noted above. Limits of the Site Specific mapping units are highlighted on the plan.

The portions of the soil map units 299 and 500, are disturbed soils filled, or that have been excavated and/or regraded, and are sandy in texture. A Disturbed Soil Mapping Unit Supplement for New Hampshire DES AoT Site Specific Soil Maps, is also included. This supplement explains the additional information given about each of the disturbed soil map units that are present on the site.

MAP UNIT #	SOIL TAXANOMIC NAME	DESCRIPTION
299B (decdc)	**Udorthents (smoothed)**	This map unit represents areas that have been cut and filled to create a large level or nearly level area. Soil material making up the map units typically came from the immediate area. School athletic fields are an example. The hydrologic soil group is C. Slopes range from 3% to 8 %.
299C (decdc)	**Udorthents (smoothed)**	This map unit represents areas that have been cut and filled to create a large level or nearly level area. Soil material making up the map units typically came from the immediate area. School athletic fields are an example. The hydrologic soil group is C. Slopes range from 8% to 15 %.
299D (decdc)	**Udorthents (smoothed)**	This map unit represents areas that have been cut and filled to create a large level or nearly level area. Soil material making up the map units typically came from the immediate area. School athletic fields are an example. The hydrologic soil group is C. Slopes range from 15% to 25%.
299E (decdc)	**Udorthents (smoothed)**	This map unit represents areas that have been cut and filled to create a large level or nearly level area. Soil material making up the map units typically came from the immediate area. School athletic fields are an example. The hydrologic soil group is C. Slopes range from 25% to 50 %.
500A (decdc)	**Udorthents (Loamy)**	This map unit is characterized typically by soil textures that are sandy loam, loam, or silt loam within the particle size control section (25 – 100cm or 10 – 40"). Saturated hydraulic conductivity (Ksat) is low through high. Drainage class ranges from well drained to somewhat poorly drained. These areas typically represent excavated glacial till or perhaps areas where sand and gravel was excavated down to the loamy underlying material. The hydrologic soil group is C. Slope ranges from 0% to 3%.

Slope Phases

Alpha Slope Symbol	Range
A	0 – 3%
B	3 – 8%
C	8 – 15%
D	15 – 25%
E	25 – 50%
F	> 50%

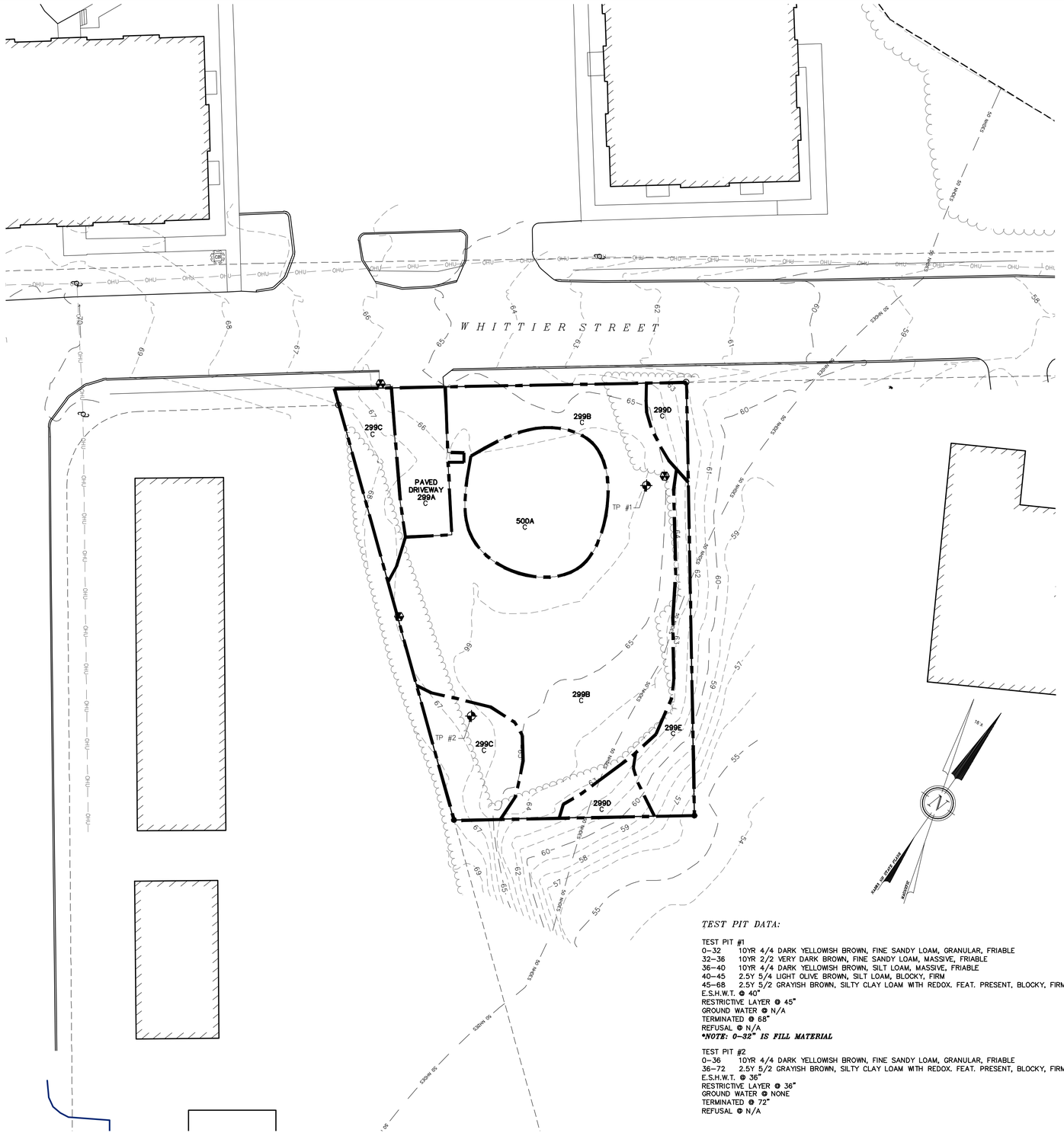
I trust that this Soil Survey and report meet your current planning needs. Please do not hesitate to contact me if you have any questions.

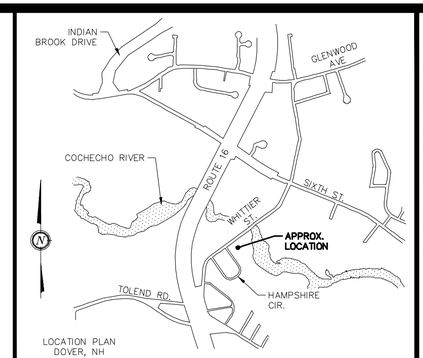
Sincerely:





John P. Hayes III CSS, CWS





LOCATION PLAN
DOVER, NH
NOT TO SCALE

NOTES:

OWNER: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

1. TAX MAP 33, LOT 1-A
2. PROJECT ADDRESS: 48 WHITTIER STREET
3. LOT AREA: 15,394 Sq. Ft., 0.35 Ac.
4. S.C.R.D. BOOK 4716, PAGE 900
5. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SOILS CONDITIONS OF TAX MAP 33, LOT 1-A, LOCATED IN DOVER, N.H., AS OF THE SOIL SURVEY. SEE REPORT DATED MARCH 2021.
6. I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN FLOOD HAZARD REF: FEMA COMMUNITY #330150, MAP 33017C0310D, DATED: MAY 17, 2005.
7. VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS.
8. TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED JULY 2020.

SITE SPECIFIC SOILS LEGEND

SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
#299B	UDORTHENTS (SMOOTHED)	C
#299C	UDORTHENTS (SMOOTHED)	C
#299D	UDORTHENTS (SMOOTHED)	C
#299E	UDORTHENTS (SMOOTHED)	C
#500A	UDORTHENTS (LOAMY)	C

SLOPE: A = 0-3% B = 3-8% C = 8-15% D = 15-25% E = 25-50% F = 50%+

DENOMINATOR: /VPD = VERY POORLY DRAINED /PD = POORLY DRAINED /SWPD = SOMEWHAT POORLY DRAINED /MWD = MODERATELY WELL DRAINED

SOIL DATA:

BzB ~ BUXTON SILT LOAM, 3 TO 8% SLOPES

NRCS, SEE WEBSOIL

TEST PIT DATA:

TEST PIT #1
0-32 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
32-36 10YR 2/2 VERY DARK BROWN, FINE SANDY LOAM, MASSIVE, FRIABLE
36-40 10YR 4/4 DARK YELLOWISH BROWN, SILT LOAM, MASSIVE, FRIABLE
40-45 2.5Y 5/4 LIGHT OLIVE BROWN, SILT LOAM, BLOCKY, FIRM
45-68 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 40"
RESTRICTIVE LAYER @ 45"
GROUND WATER @ N/A
TERMINATED @ 68"
REFUSAL @ N/A
NOTE: 0-32" IS FILL MATERIAL

TEST PIT #2
0-36 10YR 4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
36-72 2.5Y 5/2 GRAYISH BROWN, SILTY CLAY LOAM WITH REDOX. FEAT. PRESENT, BLOCKY, FIRM
E.S.H.W.T. @ 36"
RESTRICTIVE LAYER @ 36"
GROUND WATER @ NONE
TERMINATED @ 72"
REFUSAL @ N/A

DEIDRA BENJAMIN, CWS #295

STATE OF NEW HAMPSHIRE
DEIDRA L. BENJAMIN
No. 295
CERTIFIED WETLAND SCIENTIST

JOHN P. HAYES, CSS #87

STATE OF NEW HAMPSHIRE
JOHN P. HAYES III
No. 087
CERTIFIED SOIL SCIENTIST

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DOVER PLANNING FILE #

REVISION	DATE	DESCRIPTION

SITE SPECIFIC SOILS MAP
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : APRIL 19, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 7976
LICENSED PROFESSIONAL ENGINEER

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
Fax: (603) 335-4623
www.BerrySurveying.Com

Stormwater System Management

Inspection and Maintenance Manual

48 Whittier Street

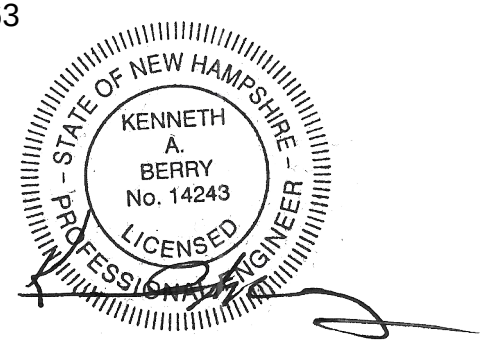
Prepared for

Dover Housing Authority
62 Whittier Street
DOVER, NH 03820

Prepared By

Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
603-332-2863

File Number
DB2020-136



May 6, 2021

Stormwater System Management

Inspection and Maintenance Manual

Table of Contents

Introduction w/ Practice Inventory ..... Page 2

Conveyance & Treatment Swales w/ Check Dams..... Page 3

Rain Garden / Bioretention Systems ..... Page 3

StormTech Chambers (Storage Reservoir) ..... Page 4

Outlet Protection, Level Spreader, & Emergency Spillway ..... Page 5

Control of Invasive Species..... Page 5

Annual Report ..... Page 6

Inspection & Maintenance Manual Checklist ..... Page 7

Inspection & Maintenance Log Sheet..... Page 10

Deicing Log Sheet.....Page 11

Owner Certification .....Page 12

Site Plan Attached – 1 Page

Control of Invasive Plants, NH Department of Agriculture Attached – 4 Pages

NHDES Green SnoPro Utilization Chart

Introduction

The Best Management Practices (BMP) described in this manual are specified in more detail within the plan set giving design details and specifications. The New Hampshire Stormwater Manual, Volume 2, Post-Construction Best Management Practices Selection & Design (December 2008, NHDES & US EPA) is included by reference to this manual. Additional details, construction specifications, and example drawings are provided within this reference. (http://des.nh.gov/organization/divisions/water/stormwater/)

The BMP's are covered below in the general order in which the storm water flows. Each BMP has a description and maintenance consideration listed. A Check List table is proved after the narrative to summarize the maintenance responsibilities and schedule. A Log Form is also provided for the owners use.

For details regarding the design of the Storm Water System see also Drainage Analysis & Sediment and Erosion Control Plan also published by Berry Surveying & Engineering dated March 29, 2021, as revised. See also plan set completed for Dover Housing Authority originally dated March 29, 2021, as revised.

Dover Housing Authority is responsible for the Stormwater System Operation and Maintenance. A significant step in this responsibility is the Inspection and Maintenance of each component of the system. Ongoing, semi-annual, and annual inspection and maintenance requirement are documented below and must be taken seriously. Failure of any component of the system can result in surface water run-off ponding and/or freezing in the roadway and parking lots, leaving the developed site untreated, and/or causing violations to issued permits. The owner must maintain, and have available, plans of the Stormwater System in order properly inspect and maintain the system. (Reduced copies attached.) It is assumed in this document that the Dover Housing Authority will keep and maintain this property without future transfer.

Dover Housing Authority is proposing the construction of 6 unit building used for temporary housing. The existing driveway will be expanded to provide adequate access and parking for the proposed units.

The following drainage features will all require periodic inspections and maintenance based on this manual in addition to deep sump catch basins throughout:

Rain Garden #101

Conveyance, Diversion, & Treatment Swales

Description: "Swales are stabilized channels designed to convey runoff at non-erosive velocities." (NHDES SWM) A conveyance swale is intended to move surface water runoff from one point to another where as a treatment swale will slow the velocity to a point where sediment will settle out of the stormwater flow. A treatment swale will be constructed to a width of between four and eight feet and have a minimum length of 100 feet. The flow characteristics will also meet design criteria. A conveyance swale will be designed so that there is the capacity to convey the 10 year 24 hour storm event.

Maintenance Considerations: Grassed swales will be inspected twice annually, removing accumulated sediment and gross solids. Grass will be mowed periodically but to a depth of not less than 4 inches. Any damage to the vegetation will be repaired and woody vegetation and invasive vegetation will be removed.

Bioretention System (Rain Gardens)

Description: Rain Gardens, or bioretention areas are located close to the source of runoff. They are intended to integrate with the site landscaping a become an aesthetically attractive opportunity to provide highly effective stormwater treatment. The rain gardens associated with this proposed development contribute toward recharge of surface water run-off into the ground. It is important that sediment be removed from run-off prior to discharge into the bioretention area to preserve the mulch and soil mix ratio. During construction it is important that the ground surface not be exposed to traffic or construction equipment to preserve the infiltration capabilities of the existing soil. Construction specifications are included in the plan set and New Hampshire Stormwater Manual, Volume 2, 4-3 Treatment Practices, 4c Bioretention System.

Maintenance Considerations:
Rain Gardens should be inspected at least twice annually and following any rainfall event exceeding 0.25 inches in a twenty-four hour period. Maintenance rehabilitation will be conducted as warranted by each inspection. Trash and debris will be removed at each inspection.

On an annual basis the infiltration capabilities need to be confirmed by evaluation the drawdown time. If the bioretention system does not drain within 72-hours following a rainfall event, a qualified professional will assess the condition of the rain garden to

determine measures required to restore the infiltration function. This is normally the direct result of sediment accumulation which will be removed to restore the filter media ratio.

Also on an annual basis the vegetation should be inspected to ensure healthy condition. Invasive species need to be removed along with dead or diseased vegetation.

StormTech Chamber System

Description: The StormTech Chamber System is a trademark product of the Advance Drainage System (ADS) company. The purchase and installation of this system will conform to ADS proprietary rights. The design engineer has specifically used the StormTech Chamber specifications in the design of this installation. The design is based on the StormTech SC-740 Chambers. The system is designed to provide additional storage and retention of stormwater within the stone reservoir. The volume in the washed crushed stone and in the specified chambers will act as detention in connection with the Outlet Structure orifice. The system for this applicant and owner consists of 20 chambers in five rows of four chambers. The orifice located in the outlet structure is located to direct all runoff to the level spreader. The top of the outlet structure is designed to pass larger storm events. Multiple inspection ports are located throughout the system.

Inspection & Maintenance Considerations: The StormTech chamber system is to be buried within washed crushed stone. Stormwater will only enter the stone reservoir after being treated through the Bio-Media of the rain garden. Inspection ports should be inspected semi-annually to be sure the stone reservoir completely drains through the underdrains. Clean-outs are provided to jet the underdrains. Likewise, the orifice cap can be removed for similar cleaning.

ADS / StormTech Contact: Aaron Cheever, PE, Advance Drainage Systems, Inc.
aaron.cheever@ads-pipe.com 1-978-302-0650

Rip Rap Outlet Protection, Level Spreaders, & Emergency Spillways

Description: Outlet Protection consists of a riprap apron or preformed scour hole that is designed to provide velocity reduction of the surface water run-off that is leaving a culvert. The design is dependent on the culvert size, soil conditions, velocity, and quantity of the run-off. There are to be no bend or curves at the intersection of the conduit and apron. Level spreaders are intended to provide a level lip where surface water runoff is allowed to continue downhill closer to sheet flow. The level lip is to be constructed as level as possible for the entire length. Emergency Spillways are rip rap reinforced outlets near the top of the berm that allow runoff to leave a practice during

periods of very high flow. Ref.: NHDES SWM Volume 2, Section 4-6 Conveyance Practices, 6. Outlet Protection and 1. Detention Ponds, Note 3, Page 158.

Inspection: Semi-annual inspection and after a major storm event.

Maintenance Considerations: The riprap outlet protection will be inspected annually for damage, which must be corrected immediately. Any sediment buildup will be removed and disposed of correctly. Sediment and subsequent vegetation will build up in the Level Spreader. This material will be cleaned out along with any gross solids and disposed of properly. (See invasive species below) Any rip rap that has been displaced from the original construction will be repaired, especially recreating the level lip.

CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.

Annual Report

Description: The owner is responsible to keep an I & M Activity Log that documents inspection, maintenance and repairs to the storm water management system, and a Deicing Log to track the amount and type of deicing material applied to the site. The original owner is responsible to ensure that any subsequent owner (s) have copies of the Stormwater System Operation and Maintenance Plan & Inspection and Maintenance Manual, copies of past logs and check lists. This includes any owner association for potential condominium conversion of the property. The Annual Report will be prepared and submitted to the City of Dover, Community Services, Engineering Department with copies of both logs and check lists no later than December 15th of each year and made available to NHDES upon request. Upon an ownership change, the Annual Report will include the Transfer of Ownership Responsibility Forms duplicated from the form found below.

The plan that accompanies this manual includes a one sheet, "Drainage Operation & Maintenance Plan". The owner will also maintain a complete set of the approved original design plans.

Respectfully,
BERRY SURVEYING & ENGINEERING

Christopher R. Berry,
Principal President

Kenneth A. Berry, PE, LLS
CPSWQ, CPESC, CESSWI
Principal, VP – Technical Operations

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Checklist

48 Whittier Street – Dover, NH
Dover Housing Authority
62 Whittier Street
Dover, NH 03820

☑	Date	BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
		Pavement Sweeping	Three Times Per Year	N/A	N/A
		Litter/Trash Removal	Routinely	Inspect dumpsters, outdoor waste receptacles area, and yard areas.	Parcel will be free of litter/trash.
		Deicing Agents	N/A	N/A	Use salt as the primary agent for roadway safety during winter.
		Invasive Species	Two times per year.	Inspect for Invasive Species	Remove and dispose invasive species.
		Closed Drainage System:			
		Drainage Pipes	1 time per 2 years	Check for sediment accumulation & clogging.	Less than 2" sediment depth
		Deep Sump Catch Basins / Outlet Structures	2 times per year	Check for sediment accumulation & clogging.	Sediment accumulated to a depth of 2 feet.

☑	Date	BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
		Rain Gardens	2 times per year	Check for sediment and debris accumulation buildup.	Remove sediment & debris when required. Remove Invasive Species
		Riprap Outlet Protection	Annually	Check for sediment buildup and structure damage.	Remove excess sediment and repair damage.
		Winter Maintenance	Ongoing	Remove snow as directed.	Ongoing
		Post Winter Maintenance	Annually	Remove excess sand, gross solids, and repair vegetation and plantings	Parcel will be free of excess sand, litter/trash. Vegetation per approved plans.
		Annual Report	1 time per year	Submit Annual Report to Dover Engineering Dept. and kept on file by the owner.	Report to be submitted on or before December 15th each year. Make copies available to NHDES upon request.

Inspection Check List: Page 3

The following drainage features will all require periodic inspections and maintenance based on this manual in addition to deep sump catch basins throughout:

Rain Garden #101

Inspection Notes:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Log Form

48 Whittier Street – Dover, NH
Dover Housing Authority
62 Whittier Street
Dover, NH 03820

BMP / System	Date Inspected	Inspector	Cleaning/Repair (List Items & Comments)	Repair Date	Performed By:

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Deicing Log Form

48 Whittier Street – Dover, NH
Dover Housing Authority
62 Whittier Street
Dover, NH 03820

Date	Amount Applied	Performed By:	Date	Amount Applied	Performed By:

STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN CERTIFICATION

Owner	Responsibility
Name: Dover Housing Authority Eric Sanderson, Capital Improvements Coordinator Address: 62 Whittier Street Dover, NH 03820 Telephone: 603-742-5804 ext 143	The owner is responsible for the conduct of all construction activities, and ultimate compliance with all the provisions of the Stormwater System Operation & Maintenance Plan and the implementation of the Inspection and Maintenance Manual.

OWNER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____ Date: _____

Printed Name:

Representing:

48 Whittier Street – Dover, NH
Dover Housing Authority
62 Whittier Street
Dover, NH 03820

NOTES:

1.) THE INTENT OF THIS PLAN SET IS TO DEMONSTRATE THE DRAINAGE INFRASTRUCTURE WHICH WILL REQUIRE INSPECTION AND MAINTENANCE DURING CONSTRUCTION AND POST-CONSTRUCTION AT 48 WHITTIER STREET. THIS PLAN IS INTENDED TO ACCOMPANY THE STORMWATER SYSTEM MANAGEMENT: INSPECTION AND MAINTENANCE MANUAL.

2.) OWNER & APPLICANT: DOVER HOUSING AUTHORITY
62 WHITTIER STREET
DOVER, NH 03820

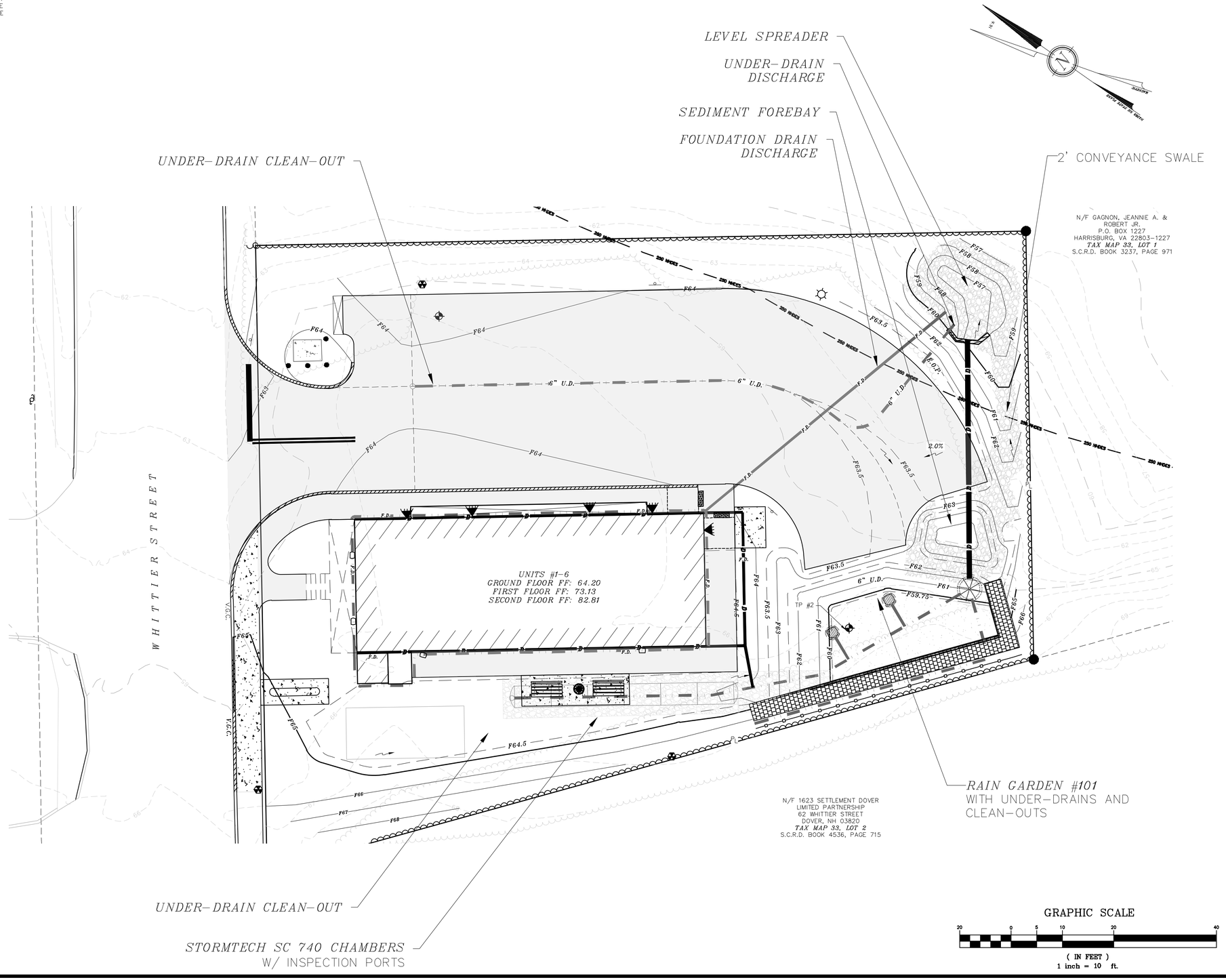
3.) THE PROJECT PARCEL IS TAX MAP 33, LOT 1-A OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4.) THE PROJECT PARCEL CONTAINS 0.35 ACRES OR 15,394 SQUARE FEET AREA OF LAND.

5.) TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, (S.C.R.D.) BOOK NO. 4716, PAGE NO. 900.

6.) PLANS PUBLISHED AT HALF-SCALE OR 11 X 17, HAVE A SCALE TWICE THAT OF THE PUBLISHED SCALE.

7.) THE INTENT OF THIS PLAN IS TO DEMONSTRATE THE DRAINAGE INFRASTRUCTURE THAT WILL REQUIRE PERIODIC INSPECTION AND MAINTENANCE BOTH DURING CONSTRUCTION AND POST CONSTRUCTION. THIS PLAN WILL ACCOMPANY A DOCUMENT ENTITLED "STORMWATER SYSTEM MANAGEMENT: INSPECTION AND MAINTENANCE MANUAL, 48 WHITTIER STREET".



DOVER PLANNING FILE #P21-37

REVISION	DATE	DESCRIPTION
#1	7-20-21	REVISED PER DOVER TRC COMMENT

STORMWATER INSPECTION & MAINTENANCE PLAN
LAND OF
DOVER HOUSING AUTHORITY
48 WHITTIER STREET
DOVER, N.H.
TAX MAP 33, LOT 1-A

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT ROAD
BARRINGTON, NH 03825 (603)332-2863

SCALE : 1 IN. EQUALS 10 FT.
DATE : MAY 6, 2021
FILE NO. : DB 2020 - 136

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14243
LICENSED PROFESSIONAL ENGINEER

Control of Invasive Plants

New Hampshire
Department of Agriculture,
Markets & Food
Douglas Cygan
603-271-3488
doug.cygan@agr.nh.gov

This guide lists garden plants and weeds which are already causing significant changes to natural areas in the Mid-Atlantic. **Measures for controlling each species are indicated by number, e.g., (3), in the text with a full explanation at the end of this article.** Click on the word Control: to jump to that section. Then click your "back" button to return to the text. Following each section suggested alternative plants are given. These alternatives are native plants, well adapted and needing little care, attractive to birds and butterflies, and an important part of the food web for our indigenous species.

INVASIVE TREES

NORWAY MAPLE (*Acer platanoides*) has large leaves similar to sugar maple. To easily confirm that the plant is Norway maple, break off a leaf and if it's truly Norway maple it will exude milky white sap. Fall foliage is yellow. (Exception: cultivars such as 'Crimson King,' which have red leaves in spring or summer, may have red autumn leaves.) The leaves turn color late, usually in late October after native trees have dropped their foliage. This tree suppresses growth of grass, garden plants, and forest understory beneath it, at least as far as the drip-line. Its wind-borne seeds can germinate and grow in deep shade. The presence of young Norway maples in our woodlands is increasing.

Control: (1); (7), (8), (9), or (10); (11) in mid-October to early November, before the leaves turn color.

TREE OF HEAVEN (*Ailanthus altissima*), is incredibly tough and can grow in the poorest conditions. It produces huge quantities of wind-borne seeds, grows rapidly, and secretes a toxin that kills other plants. Its long compound leaves, with 11-25 lance-shaped leaflets, smell like peanut butter or burnt coffee when crushed. Once established, this tree cannot be removed by mechanical means alone.

Control: (1) - seedlings only. Herbicide - use Garlon 3a (9) with no more than a 1" gap between cuts, or (10); plus (11) on re-growth. Or paint bottom 12" of bark with Garlon 4 Ultra (in February or March to protect surrounding plants). USE MAXIMUM STRENGTH SPECIFIED ON LABEL for all herbicide applications on Ailanthus. Glyphosate is not effective against Ailanthus.

INVASIVE SHRUBS

AUTUMN OLIVE (*Eleagnus umbellata*): Formerly recommended for erosion control and wildlife value, these have proved highly invasive and diminish the overall quality of wildlife habitat.

Control: (1) - up to 4" diameter trunks; (7) or (10) or bury stump. Do not mow.

MULTIFLORA ROSE (*Rosa multiflora*), formerly recommended for erosion control, hedges, and wildlife habitat, becomes a huge shrub that chokes out all other vegetation and is too dense for many species of birds to nest in, though a few favor it. In shade, it grows up trees like a vine. It is covered with white flowers in June. (Our native roses have fewer flowers, mostly pink.) Distinguish multiflora by its size, and by the presence of very hard, curved thorns, and a fringed edge to the leaf stalk.

Control: (1) - pull seedlings, dig out larger plants at least 6" from the crown and 6" down; (4) on extensive infestations; (10) or (11). It may remain green in winter, so herbicide may *applied when other plants are dormant. For foliar application, mix Rodeo with extra sticker-spreader, or use Roundup Sure Shot Foam on small plants.*

BUSH HONEYSUCKLES (*Lonicera spp.*), including Belle, Amur, Morrow's, and Tatarian honeysuckle. (In our region, assume that any honeysuckle is exotic unless it is a scarlet-flowered vine). Bush honeysuckles create denser shade than native shrubs, reducing plant diversity and eliminating nest sites for many forest interior species.
Control: (2) on ornamentals; (1); on shady sites only, brush cut in early spring and again in early fall (3); (4) during the growing season; (7); or (10) late in the growing season.

BLUNT-LEAVED PRIVET (*Ligustrum* obtusifolium). *Control:* (1); (7) or (10); or trim off all flowers. Do not cut back or mow.

BURNING BUSH, WINGED EUONYMUS (*Euonymus alatus*), identified by wide, corky wings on the branches.
Control: (1); (7) or (10); or trim off all flowers.

JAPANESE BARBERRY (*Berberis thunbergii*), and all cultivars and varieties.
Control: (1); (7) or (10); or trim off all flowers.

INVASIVE WOODY VINES

All of these vines shade out the shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle. DO NOT PLANT NEXT TO OPEN SPACE.

JAPANESE HONEYSUCKLE (*Lonicera japonica*), including Hall's honeysuckle, has gold-and-white flowers with a heavenly scent and sweet nectar in June. This is probably the familiar honeysuckle of your childhood. It is a rampant grower that spirals around trees, often strangling them.
Control: (1); (3); (10); (11) in fall or early spring when native vegetation is dormant. Plan to re-treat repeatedly.

ORIENTAL BITTERSWEET (*Celastrus orbiculatus*) has almost completely displaced American bittersweet (*C. scandens*). The Asian plant has its flowers and bright orange seed capsules in clusters all along the stem, while the native species bears them only at the branch tips.
Control: (1); keep ornamental plants cut back, remove all fruits as soon as they open, and bag or burn fruits; to eradicate use Garlon 3a (10).

JAPANESE KNOTWEED, MEXICAN BAMBOO (*Polygonum cuspidatum*) can grow in shade. The stems have knotty joints, reminiscent of bamboo. It grows 6-10' tall and has large pointed oval or triangular leaves.
Control: Cut at least 3 times each growing season and/or treat with Rodeo (10) or (11). In gardens, heavy mulch or dense shade may kill it.

INVASIVE HERBACEOUS PLANTS

GARLIC MUSTARD (*Alliaria petiolata*, *A. officinalis*), a white-flowered biennial with rough, scalloped leaves (kidney-, heart- or arrow-shaped), recognizable by the smell of garlic and taste of mustard when its leaves are crushed. (The odor fades by fall.)
Control: Pull before it flowers in spring (1), removing crown and roots. Tamp down soil afterwards. Once it has flowered, cut (2), being careful not to scatter seed, then bag and burn or send to the landfill. (11) may be appropriate in some settings.

JAPANESE STILT GRASS (*Microstegium vimineum*) can be identified by its lime-green color and a line of silvery hairs down the middle of the 2-3" long blade. It tolerates sun or dense shade and quickly invades areas left bare or disturbed by tilling or flooding. An annual grass, it builds up a large seed bank in the soil.

Control: Easily pulled in early to mid-summer (1) - be sure to pull before it goes to seed. If seeds have formed, bag and burn or send to landfill. Mowing weekly or when it has just begun to flower may prevent it from setting seed (3). Use glyphosate (11) or herbicidal soap (less effective) on large infestations. Follow up with (5) in spring.

MILE-A-MINUTE VINE, DEVIL'S TAIL TEARTHUMB (*Polygonum perfoliatum*), a rapidly growing annual vine with triangular leaves, barbed stems, and turquoise berries in August which are spread by birds. It quickly covers and shades out herbaceous plants.
Control: same as for stilt grass.

SPOTTED KNAPWEED (*Centaurea maculosa*), a biennial with thistle-like flowers.
Control: Do NOT pull (1) unless the plant is young and the ground is very soft - the tap root will break off and produce several new plants. Wear sturdy gloves. (2); (6); (10) or (11).

CONTROL MEASURES

(1) PULL seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs.
(2) DEADHEAD to prevent spread of seeds of invasive plants. Cut off seeds or fruits before they ripen. Bag, and burn or send to a landfill.
(3) MOW or CUTTING at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year.
(4) CONTROLLED BURNING during the spring, repeated over several years, allows native vegetation to compete more effectively with the invasive species. This requires a permit. Spot treatment with glyphosate in late fall can be used to make this method more effective.
(5) Use a CORN-BASED PRE-EMERGENCE HERBICIDE on annual weeds. This product is also an organic fertilizer, i.e., it can stimulate growth of existing plants, including weeds, so it is appropriate for lawns and gardens but may not be appropriate in woodlands.
(6) In lawns, SPOT TREAT with BROAD-LEAF WEEDKILLER. Good lawn-care practices (test soil; use lime and fertilizer only when soil test shows a need; mow high and frequently; leave clippings on lawn) reduce weed infestations.
(7) CUT DOWN the tree. Grind out the stump, or clip off re-growth.
(8) GIRDLE tree: cut through the bark and growing layer (cambium) all around the trunk, about 6" above the ground. Girdling is most effective in spring when the sap is rising, and from middle to late summer when the tree is sending down food to the roots. Clip off sucker sprouts.
(9) FRILL: Using a machete, hatchet or similar device, hack scars (several holes in larger trees) downward into the cambium layer, and squirt in glyphosate (or triclopyr if recommended in text above). Follow label directions for Injection and Frill Applications. This is most effective from middle to late summer. Clip off any sucker sprouts or treat with glyphosate.
(10) CUT STEM / CUT STUMP WITH GLYPHOSATE (or triclopyr if specified above). Follow label directions for Cut Stump Application. Clip off sucker sprouts or paint with glyphosate. See Note on Herbicides.
(11) FOLIAR SPRAY WITH GLYPHOSATE herbicide (see Note on Herbicides). Use a backpack or garden sprayer or mist blower, following label directions. Avoid overspray and/or dripping onto non-target plants, because glyphosate kills most plants except moss. If it rolls off waxy or grass-like foliage, use additional sticker-spreader. Deciduous trees, shrubs, and perennials move nutrients down to the roots in late summer. Glyphosate is particularly effective at this time and when plants have just gone out of flowering. Several invasive species retain their foliage after native plants have lost theirs, and resume growth earlier in spring than most natives. This allows you to treat them without harming the natives. However, the plant must be actively growing for the herbicide to work. Retreatments may be necessary the following year if suckering occurs or the plant hasn't been entirely killed.

NOTE ON HERBICIDES: It is highly recommended that small populations try to be controlled using non-chemical methods wherever feasible. However, for large infestations, and for a few plants specified above, herbicide use is essential. Apply herbicides carefully to avoid non-target plants, glyphosate is the least environmentally damaging herbicide in most cases. Add food coloring for visibility, and a soap-based sticker such as Cide-Kick. Glyphosate is ineffective on some

plants; for these, triclopyr (Garlon) may be indicated. When using herbicides, read the entire label and observe all precautions listed, including proper disposal. If in doubt, call your local Cooperative Extension Service.

Pavement Temp. (°F) and Trend (↑ ↓)	Weather Condition	Maintenance Actions	Application Rate (lbs/per 1000 sq.ft.)			
			Salt Prewetted/Pretreated with salt brine	Salt Prewetted/Pretreated with other blends	Dry salt	Winter sand
>30 ↑	Snow	Plow, treat intersections only				Not recommended
	Frz. Rain	Apply chemical				Not recommended
30 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				Not recommended
25 - 30 ↑	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				Not recommended
25 - 30 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
20 - 25 ↑	Snow or frz. Rain	Plow and Apply chemical				3.25 for frz. Rain
20 - 25 ↓	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
15 - 20 ↑	Snow	Plow and apply chemical				Not recommended
	Frz. Rain	Apply chemical				3.25
15 - 20 ↓	Snow or Frz. Rain	Plow and apply chemical				3.25 for frz. Rain
0 to 15 ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended		Not recommended	5.0 and spot-treat as needed
< 0	Snow	Plow, treat with blends, sand hazardous areas	Not recommended		Not recommended	5.0 and spot-treat as needed

Table 19. Application Rates for Deicing

These rates & table format are based on road application guidelines (Mn Snow & Ice Control Field Handbook, Manual 2005-1). Develop your own application rates by adjusting your current rates incrementally downward toward these guidelines. Where temperature categories overlap, select the rate most applicable to your situation.

Welcome to New Hampshire's Watershed Report Cards built from the 2018, 305(b)/303(d)

Each Watershed Report Card covers a single 12 digit Hydrologic Unit Code (HUC12), on average a 34 square mile area. Each Watershed Report Card has three components;

1. REPORT CARD - A one page card that summarizes the overall use support for Aquatic Life Integrity, Primary Contact (i.e. Swimming), and Secondary Contact (i.e. Boating) Designated Uses on every Assessment Unit ID (AUID) within the HUC12.
2. HUC 12 MAP - A map of the watershed with abbreviated labels for each AUID within the HUC12.
3. ASSESSMENT DETAILS - Anywhere from one to forty pages with the detailed assessment information for each and every AUID in the Report Card and Map.

How are the Surface Water Quality Assessment determinations made?

All readily available data with reliable Quality Assurance/Quality Control is used in the biennial surface water quality assessments. For a full understanding of how the Surface Water Quality Standards (Env-Wq 1700) are translated into surface water quality assessments we urge the reader to review the 2018 Consolidated Assessment and Listing Methodology (CALM) at https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2018/documents/r-wd-19-04.pdf.

Where can I find more advanced mapping resources?

GIS files are available by assessment cycle at ftp://pubftp.nh.gov/DES/wmb/WaterQuality/SWQA/2018/GIS

I'd like to see the more raw water quality data?

The web mapping tool allows you to download the data used in the assessment of the primary contact and aquatic life designated uses by clicking on the "Data Access Waterbody Data (Aquatic Life and Swimming Uses)" link for any assessment unit. (https://www.des.nh.gov/organization/divisions/water/wmb/swqa/assessment-viewers.htm)

How are assessments coded in the report card?

Assessment outcomes are displayed on a color scale as well as an alpha numeric scale that provides additional distinctions for the designated use and parameter level assessments as outlined in the table below.

		Severe Not Supporting, Severe	**Poor** Not Supporting, Marginal	**Likely Bad** Insufficient Information – Potentially Not Supporting	**No Data** No Data	**Likely Good** Insufficient Information – Potentially Full Supporting	**Marginal** Full Support, Marginal	**Good** Full Support, Good
CATEGORY	**Description**							
Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL* Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL^ Needed	5-P	5-M or 5-T					

* TMDL stands for Total Maximum Daily Load studies (http://des.nh.gov/organization/divisions/water/wmb/tmdl/index.htm)

WATERSHED 305(b) ASSESSMENT SUMMARY REPORT:

HUC 12 010600030608

HUC 12 NAME LOWER COCHECO RIVER

(Locator map on next page only applies to this HUC12)

Assessment Cycle 2018

Good		Full Support Good
Marginal		Full Support Marginal
Likely Good		Insufficient Information – Potentially Full Support
No Data		No Data
Likely Bad		Insufficient Information – Potentially Not Support
Poor		Not Support Marginal
Severe		Not Support Severe



ASSESSMENT UNIT ID	MAP LABEL	ASSESSMENT UNIT NAME	AQUATIC LIFE	SWIMMING	BOATING	FISH CONSUMP.
NHEST600030608-01	E*01	COCHECO RIVER	5-P	5-P	4A-M	5-M
NHIMP600030607-02	I*0607-02	COCHECO RIVER - GONIC DAM POND	5-M	4A-P	2-G	4A-M
NHIMP600030607-03	I*0607-03	COCHECO RIVER - MILL POND DAM	3-PAS	3-ND	3-ND	4A-M
NHIMP600030608-02	I*02	COCHECO RIVER - WATSON WALDRON DAM	5-M	2-G	2-G	4A-M
NHIMP600030608-04	I*04	COCHECO RIVER - CENTRAL AVE DAM	5-M	2-G	2-G	4A-M
NHIMP600030608-05	I*05	CONSERVATION POND DAM	3-ND	3-ND	3-ND	4A-M
NHIMP600030608-06	I*06	FRESH CREEK - FARM POND	3-ND	3-ND	3-ND	4A-M
NHLAK600030608-01	L*01	FRESH CREEK POND	5-M	4A-P	2-G	4A-M
NHLAK600030608-02	L*02	UNNAMED POND	3-ND	3-PAS	3-PAS	4A-M
NHRIV600030607-12	R*0607-12	UNNAMED TRIBUTARY - TO COCHECO RIVER	3-ND	3-ND	3-ND	4A-M
NHRIV600030607-13	R*0607-13	UNNAMED BROOK - TO COCHECO RIVER	3-ND	3-ND	3-ND	4A-M
NHRIV600030607-14	R*0607-14	COCHECO RIVER	3-ND	3-ND	3-ND	4A-M
NHRIV600030607-15	R*0607-15	COCHECO RIVER	5-M	2-G	2-G	4A-M
NHRIV600030608-02	R*02	BLACKWATER BROOK-CLARK BROOK	3-ND	4A-P	3-ND	4A-M
NHRIV600030608-03	R*03	COCHECO RIVER - UNNAMED BROOK	5-M	4A-M	2-G	4A-M
NHRIV600030608-04	R*04	REYNERS BROOK	3-ND	4A-P	3-ND	4A-M
NHRIV600030608-05	R*05	COCHECO RIVER	5-M	4A-M	2-G	4A-M
NHRIV600030608-06	R*06	INDIAN BROOK	5-P	4A-P	3-ND	4A-M
NHRIV600030608-07	R*07	EMERSON BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-08	R*08	FRESH CREEK - TWOMBLY BROOK	5-P	4A-M	3-ND	4A-M
NHRIV600030608-09	R*09	UNNAMED BROOK - ROLLINS BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-10	R*10	ROLLINS BROOK	5-P	4A-P	3-ND	4A-M
NHRIV600030608-11	R*11	FRESH CREEK	3-PNS	4A-P	4A-M	4A-M
NHRIV600030608-12	R*12	UNNAMED TRIBUTARY - TO COCHECO RIVER (DOVER (DOWNSTREAM OF PORTLAND AVE))	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-13	R*13	UNNAMED TRIBUTARY - TO COCHECO RIVER - (DOVER (UPSTREAM OF ATLANTIC AVE))	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-14	R*14	UNNAMED TRIB. TO COCHECO RIVER, DOVER (FROM LANDFILL)	5-M	3-ND	3-ND	4A-M
NHRIV600030608-15	R*15	BERRY BROOK	5-M	4A-P	2-G	4A-M

WATERSHED 305(b) ASSESSMENT SUMMARY REPORT:

HUC 12 010600030608

HUC 12 NAME LOWER COCHECO RIVER

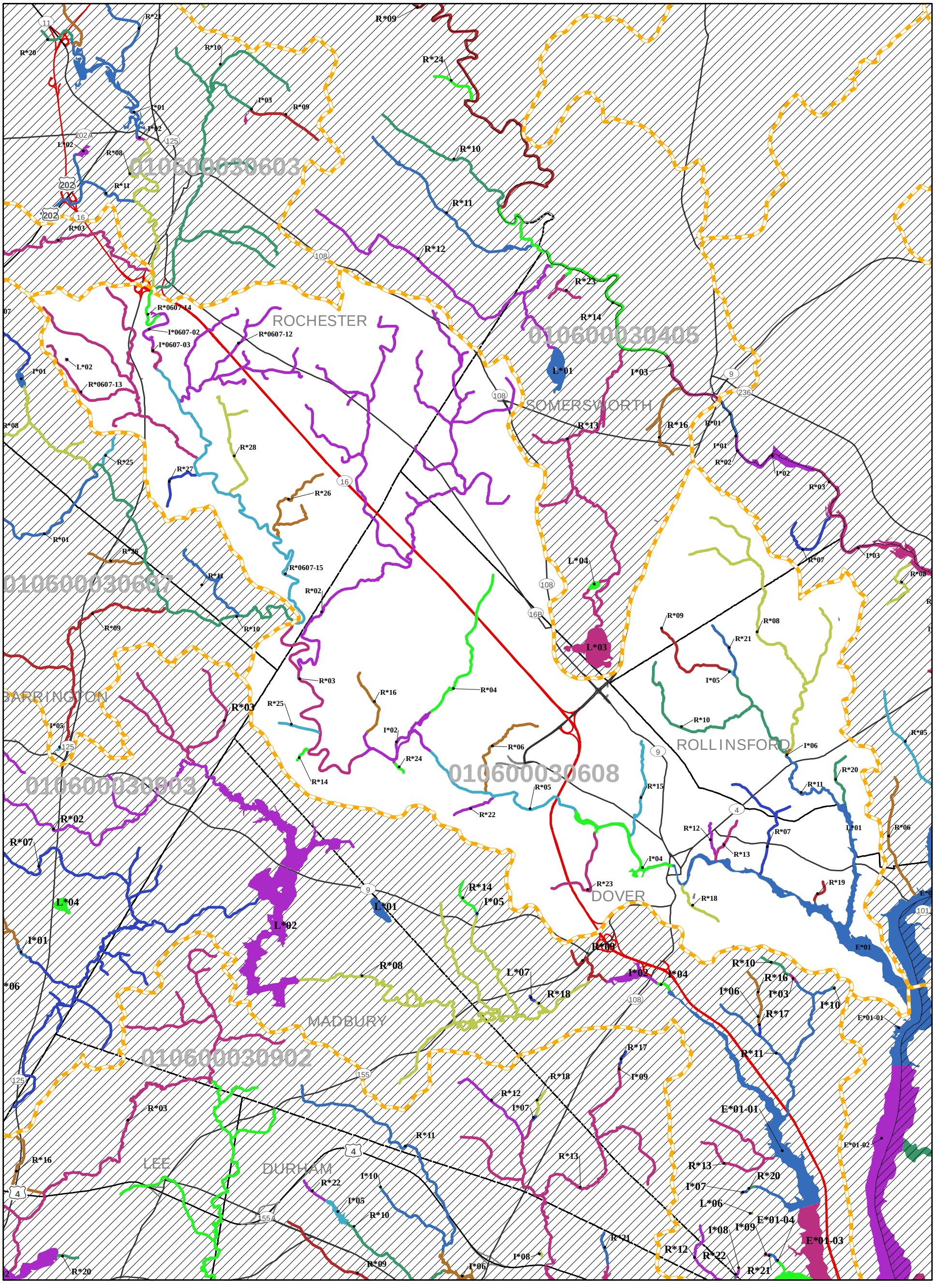
(Locator map on next page only applies to this HUC12)

Assessment Cycle 2018

Good		Full Support Good
Marginal		Full Support Marginal
Likely Good		Insufficient Information – Potentially Full Support
No Data		No Data
Likely Bad		Insufficient Information – Potentially Not Support
Poor		Not Support Marginal
Severe		Not Support Severe

ASSESSMENT UNIT ID	MAP LABEL	ASSESSMENT UNIT NAME	AQUATIC LIFE	SWIMMING	BOATING	FISH CONSUMP.
NHRIV600030608-16	R*16	JACKSON BROOK	3-ND	4A-P	3-ND	4A-M
NHRIV600030608-18	R*18	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-19	R*19	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-20	R*20	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-21	R*21	UNNAMED BROOK - TO ROLLINS BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-22	R*22	HORN BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-23	R*23	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-24	R*24	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-25	R*25	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-26	R*26	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-27	R*27	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M
NHRIV600030608-28	R*28	UNNAMED BROOK	3-ND	3-ND	3-ND	4A-M

AUIDs For HUC12: 010600030608 - Lower Cocheco River



HUC12 Boundaries
Town Boundaries
Major Roads
Interstate Highway
US Highway
State Highway

Assessment Unit Coloring
AUs Ending with:
0 =
1 =
2 =
3 =
4 =
5 =
6 =
7 =
8 =
9 =

N
W E
S

Abbrv. Label	HUC 12
L* 03	010 700060201

AUID = NH L AK 700060201 - 03

Assessment Unit IDs are derived from the HUC12 they reside within. The labels have been shortened on this map for presentation purposes.
Example: the Label "L*03" in HUC12 = 010700060201 represents AUID = "NHLAK700060201-03"
In rare cases where an AUID extends beyond the boundary of a single HUC12, additional portions of the end of the HUC 12 number have also been replaced.

0 0.6 1.2 1.8 2.4 Miles

Scale:1:59,820

S:\WD-Watershed\WQ_Planning\305b_303d\2018\AUIDs\HUC12Maps

Assessment Unit ID NHRIV600030608-05
Assessment Unit Name COCHECO RIVER
Primary Town DOVER

Size 2.0600 MILES
Beach N
Assessment Unit Category*~ 5-M

2018, 305(b)/303(d) - All Reviewed Parameters by Assessment Unit

Designated Use Description	*Desig. Use Category	Parameter Name	Parameter Threatened (Y/N)	Last Sample	Last Exceed	Parameter Category*	TMDL Priority
Aquatic Life Integrity	5-M	ALUMINUM	N	1999	1999	3-ND	
		AMMONIA (TOTAL)	N	2005	N/A	3-ND	
		ARSENIC	N	2004	N/A	3-ND	
		CADMIUM	N	1999	1999	3-ND	
		CHLORIDE	N	2013	N/A	3-PAS	
		COPPER	N	1999	N/A	3-ND	
		DISSOLVED OXYGEN SATURATION	N	2013	N/A	3-PAS	
		IRON	N	2004	N/A	3-ND	
		LEAD	N	1999	1999	3-ND	
		OXYGEN, DISSOLVED	N	2013	N/A	3-PAS	
		PHOSPHORUS (TOTAL)	N	2013	NLV	3-PNS	
		TURBIDITY	N	2013	N/A	3-PAS	
		ZINC	N	1999	N/A	3-ND	
		pH	N	2013	2009	5-M	LOW
Fish Consumption	4A-M	ARSENIC	N	2004	2004	3-ND	
		COPPER	N	1999	N/A	3-ND	
		Mercury	N			4A-M	
		ZINC	N	1999	N/A	3-ND	
Potential Drinking Water Supply	2-G	ARSENIC	N	2004	2004	3-ND	
		COPPER	N	1999	N/A	3-ND	
		ESCHERICHIA COLI	N	2013	2013	3-PNS	
		IRON	N	2004	2004	3-ND	
		ZINC	N	1999	N/A	3-ND	
Primary Contact Recreation	4A-M	Escherichia coli	N	2013	2013	4A-M	
Secondary Contact Recreation	2-G	ESCHERICHIA COLI	N	2013	N/A	2-G	
Wildlife	3-ND						

Severe	Poor	Likely Bad	No Data	Likely Good	Marginal	Good
Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Full Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good

*DES Categories; 2-G = Supports Parameter well above criteria, 2-M = Supports Parameter marginally above criteria, 2-OBS = Exceeds WQ criteria but natural therefore not a WQ exceedence, 3-ND = Insufficient Information/No data, 3-PAS= Insufficient Information/Potentially Attaining Standard, 3-PNS= Insufficient Information/Potentially Not Attaining Standard, (4A=Impaired/TMDL Completed, 4B=Impaired/Other Measure will rectify Impairment, 4C=Impaired/Non-Pollutant, 5=Impaired/TMDL needed) M=Marginal Impairment, P=Severe Impairment, T=Threatened (http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm)

Cycle	Assessment Unit ID (AUID)	Assessment Unit Name	Town(s) Primary Town is Listed First	Water Size	Size Unit	Designated Use Description	Parameter Name	NHDES Category	Threatened	TMDL Priority
2018	NHRIV600030607-01	ISINGLASS RIVER	BARRINGTON, ROCHESTER	7.336	MILES	Aquatic Life Integrity	pH	5-P	N	LOW
2018	NHRIV600030607-03	AYERS POND BROOK	BARRINGTON	0.128	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	N	LOW
2018	NHRIV600030607-03	AYERS POND BROOK	BARRINGTON	0.128	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030607-04	AYERS POND BROOK	BARRINGTON	1.691	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	N	LOW
2018	NHRIV600030607-04	AYERS POND BROOK	BARRINGTON	1.691	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030607-08	HANSON BROOK	ROCHESTER, BARRINGTON	2.411	MILES	Aquatic Life Integrity	pH	5-M		LOW
2018	NHRIV600030607-09	GREEN HILL BROOK	BARRINGTON	3.224	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030607-10	ISINGLASS RIVER	ROCHESTER, BARRINGTON	3.796	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030607-15	COCHECO RIVER	ROCHESTER	4.414	MILES	Aquatic Life Integrity	Iron	5-M	N	LOW
2018	NHRIV600030607-15	COCHECO RIVER	ROCHESTER	4.414	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030607-16	SCRUTON POND OUTLET BROOK	BARRINGTON	0.071	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030607-16	SCRUTON POND OUTLET BROOK	BARRINGTON	0.071	MILES	Aquatic Life Integrity	pH	5-P	N	LOW
2018	NHRIV600030608-03	COCHECO RIVER - UNNAMED BROOK	DOVER, ROCHESTER	3.267	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030608-05	COCHECO RIVER	DOVER	2.060	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030608-06	INDIAN BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Chloride	5-P	N	LOW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY BROOK	ROLLINSFORD, SOMERSWORTH	4.983	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY BROOK	ROLLINSFORD, SOMERSWORTH	4.983	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030608-14	UNNAMED TRIB. TO COCHECO RIVER,	DOVER	0.169	MILES	Aquatic Life Integrity	Iron	5-M	N	LOW
2018	NHRIV600030608-15	BERRY BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments	5-M	N	LOW
2018	NHRIV600030608-15	BERRY BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Chloride	5-M	N	LOW
2018	NHRIV600030701-01	LAMPREY RIVER - AND HEADWATER	NORTHWOOD, DEERFIELD	13.652	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030701-01	LAMPREY RIVER - AND HEADWATER	NORTHWOOD, DEERFIELD	13.652	MILES	Aquatic Life Integrity	pH	5-P	N	LOW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	Aluminum	5-M	N	LOW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments	5-P	N	LOW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD	7.767	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD	7.767	MILES	Aquatic Life Integrity	pH	5-P	N	LOW
2018	NHRIV600030701-13	LAMPREY RIVER	DEERFIELD	0.041	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030702-06	NORTH BRANCH RIVER - UNNAMED	DEERFIELD, CANDIA	5.185	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030702-06	NORTH BRANCH RIVER - UNNAMED	DEERFIELD, CANDIA	5.185	MILES	Aquatic Life Integrity	pH	5-P	N	LOW
2018	NHRIV600030702-07	NORTH BRANCH RIVER - UNNAMED	CANDIA, DEERFIELD	10.013	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030702-07	NORTH BRANCH RIVER - UNNAMED	CANDIA, DEERFIELD	10.013	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-01	UNNAMED BROOK - TO ONWAY LAKE	RAYMOND, CANDIA	5.450	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessments	5-P	N	LOW
2018	NHRIV600030703-01	UNNAMED BROOK - TO ONWAY LAKE	RAYMOND, CANDIA	5.450	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD,	4.340	MILES	Aquatic Life Integrity	Lead	5-M	N	LOW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD,	4.340	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMED BROOK	RAYMOND, DEERFIELD,	4.340	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-05	LAMPREY RIVER	RAYMOND	2.647	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-09	LAMPREY RIVER	RAYMOND	2.295	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-10	LAMPREY RIVER	RAYMOND	0.558	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-11	LAMPREY RIVER	EPPING, RAYMOND	3.270	MILES	Aquatic Life Integrity	Aluminum	5-M	N	LOW
2018	NHRIV600030703-11	LAMPREY RIVER	EPPING, RAYMOND	3.270	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-14	PAWTUCKAWAY RIVER - UNNAMED	NOTTINGHAM, EPPING,	6.751	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P	N	LOW
2018	NHRIV600030703-14	PAWTUCKAWAY RIVER - UNNAMED	NOTTINGHAM, EPPING,	6.751	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-15	LAMPREY RIVER	EPPING	4.692	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-M	N	LOW
2018	NHRIV600030703-15	LAMPREY RIVER	EPPING	4.692	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-17	UNNAMED BROOK - TO LAMPREY RIVER	EPPING	3.280	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-18	LAMPREY RIVER	EPPING	3.247	MILES	Aquatic Life Integrity	pH	5-M	N	LOW
2018	NHRIV600030703-20	RUM BROOK	EPPING	4.791	MILES	Aquatic Life Integrity	pH	5-M	N	LOW

2018	NHRIV600030607-16	SCRUTON POND OUTLET B	BARRINGTON	0.071	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030607-16	SCRUTON POND OUTLET B	BARRINGTON	0.071	MILES	Aquatic Life Integrity	pH	5-P				Non-ORW
2018	NHRIV600030608-02	BLACKWATER BROOK-CLAI	ROCHESTER, D	15.228	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-03	COCHECO RIVER - UNNAM	DOVER, ROCHE	3.267	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030608-03	COCHECO RIVER - UNNAM	DOVER, ROCHE	3.267	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030608-03	COCHECO RIVER - UNNAM	DOVER, ROCHE	3.267	MILES	Primary Contact Recreation	Escherichia coli	4A-M	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-04	REYNERS BROOK	DOVER	1.77	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-05	COCHECO RIVER	DOVER	2.06	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030608-05	COCHECO RIVER	DOVER	2.06	MILES	Primary Contact Recreation	Escherichia coli	4A-M	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-06	INDIAN BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Chloride	5-P				Non-ORW
2018	NHRIV600030608-06	INDIAN BROOK	DOVER	1.106	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY	ROLLINSFORD,	4.983	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY	ROLLINSFORD,	4.983	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY	ROLLINSFORD,	4.983	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030608-08	FRESH CREEK - TWOMBLY	ROLLINSFORD,	4.983	MILES	Primary Contact Recreation	Escherichia coli	4A-M	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030608-10	ROLLINS BROOK	ROLLINSFORD	2.856	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-11	FRESH CREEK	ROLLINSFORD,	1.126	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-14	UNNAMED TRIB. TO COCH	DOVER	0.169	MILES	Aquatic Life Integrity	Iron	5-M				Non-ORW
2018	NHRIV600030608-15	BERRY BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessmer	5-M				Non-ORW
2018	NHRIV600030608-15	BERRY BROOK	DOVER	1.106	MILES	Aquatic Life Integrity	Chloride	5-M				Non-ORW
2018	NHRIV600030608-15	BERRY BROOK	DOVER	1.106	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030608-16	JACKSON BROOK	DOVER	0.724	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39272	Non-ORW
2018	NHRIV600030701-01	LAMPREY RIVER - AND HE/	NORTHWOOD,	13.652	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030701-01	LAMPREY RIVER - AND HE/	NORTHWOOD,	13.652	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030701-01	LAMPREY RIVER - AND HE/	NORTHWOOD,	13.652	MILES	Aquatic Life Integrity	pH	5-P				Non-ORW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	Aluminum	5-M				Non-ORW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessmer	5-P				Non-ORW
2018	NHRIV600030701-08	HARTFORD BROOK	DEERFIELD	10.734	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD	7.767	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD	7.767	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030701-09	LAMPREY RIVER	DEERFIELD	7.767	MILES	Aquatic Life Integrity	pH	5-P				Non-ORW
2018	NHRIV600030701-13	LAMPREY RIVER	DEERFIELD	0.041	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030701-13	LAMPREY RIVER	DEERFIELD	0.041	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030701-14	LAMPREY RIVER	RAYMOND, DE	6.776	MILES							Review OneStop GIS
2018	NHRIV600030702-01	TR NORTH BRANCH RIVER	CANDIA	8.629	MILES							ORW
2018	NHRIV600030702-02	UNNAMED BROOKS - TO N	CANDIA	3.68	MILES							ORW
2018	NHRIV600030702-03	UNNAMED BROOK - FROM	DEERFIELD	0.131	MILES							ORW
2018	NHRIV600030702-05	NORTH BRANCH RIVER - U	DEERFIELD, CA	3.563	MILES							ORW
2018	NHRIV600030702-06	NORTH BRANCH RIVER - U	DEERFIELD, CA	5.185	MILES							ORW
2018	NHRIV600030702-07	NORTH BRANCH RIVER - U	CANDIA, DEERI	10.013	MILES							ORW
2018	NHRIV600030702-08	UNNAMED BROOK - TO NO	CANDIA, RAYM	1.171	MILES							ORW
2018	NHRIV600030702-09	NORTH BRANCH RIVER	RAYMOND, CA	0.974	MILES							Review OneStop GIS
2018	NHRIV600030702-10	UNNAMED BROOK	CANDIA	1.071	MILES							ORW
2018	NHRIV600030702-11	UNNAMED BROOK	CANDIA	0.839	MILES							ORW
2018	NHRIV600030702-12	UNNAMED BROOK	DEERFIELD	0.59	MILES							ORW
2018	NHRIV600030703-01	UNNAMED BROOK - TO OI	RAYMOND, CA	5.45	MILES	Aquatic Life Integrity	Benthic-Macroinvertebrate Bioassessmer	5-P				Non-ORW
2018	NHRIV600030703-01	UNNAMED BROOK - TO OI	RAYMOND, CA	5.45	MILES	Aquatic Life Integrity	Habitat Assessment (Streams)	4C-M				Non-ORW
2018	NHRIV600030703-01	UNNAMED BROOK - TO OI	RAYMOND, CA	5.45	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMI	RAYMOND, DE	4.34	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMI	RAYMOND, DE	4.34	MILES	Aquatic Life Integrity	Lead	5-M				Non-ORW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMI	RAYMOND, DE	4.34	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030703-04	DUDLEY BROOK - UNNAMI	RAYMOND, DE	4.34	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-05	LAMPREY RIVER	RAYMOND	2.647	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-07-02	LAMPREY RIVER - CARROLI	RAYMOND	0.02	MILES	Primary Contact Recreation	Escherichia coli	4A-P	9/21/2010	NEW HAMPSHIRE STATEWIDE BACTERIA	39276	Non-ORW
2018	NHRIV600030703-09	LAMPREY RIVER	RAYMOND	2.295	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-10	LAMPREY RIVER	RAYMOND	0.558	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-11	LAMPREY RIVER	EPPING, RAYM	3.27	MILES	Aquatic Life Integrity	Aluminum	5-M				Non-ORW
2018	NHRIV600030703-11	LAMPREY RIVER	EPPING, RAYM	3.27	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-14	PAWTUCKAWAY RIVER - U	NOTTINGHAM,	6.751	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW
2018	NHRIV600030703-14	PAWTUCKAWAY RIVER - U	NOTTINGHAM,	6.751	MILES	Aquatic Life Integrity	Oxygen, Dissolved	5-P				Non-ORW
2018	NHRIV600030703-14	PAWTUCKAWAY RIVER - U	NOTTINGHAM,	6.751	MILES	Aquatic Life Integrity	pH	5-M				Non-ORW
2018	NHRIV600030703-15	LAMPREY RIVER	EPPING	4.692	MILES	Aquatic Life Integrity	Dissolved oxygen saturation	5-M				Non-ORW

City of Dover, New Hampshire
SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Chinburg Properties Telephone # 603-868-5995 x-25

Address of Applicant: 3 Penstock Way Newmarket, NH 03857

Name of Property Owner (*if different from applicant*): Dahn H. & Norma M. Tibbett / Jahn H. & Susan G. Janetos Telephone #_____

Address of Property Owner: 55 Carlton Way Hales Location, NH 03860

E-Mail Address: massia@chinburg.com

PROPERTY INFORMATION

Address of Property: Oak Street

Assessor's Map # N Lot(s) # 13-1

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

Size of Parcel: 34.53 ac Property Deed: Book 4465 Page: 298

Existing Use of Property: VACANT

SUBDIVISION INFORMATION

Subdivision Type: Conventional: _____ Open Space: X TDR: _____

Existing Number of Lots: 1 Proposed Number of Lots: 12

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: TBD feet

Estimated value of construction: TBD New impervious area (in s.f.): TBD

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: Section 157-32 J. "Dead-End Streets"

Justification for waiver request(s) (*attach additional sheets as needed*): See attached Waiver request.

SURVEYOR INFORMATION

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

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 E. Burt, NH CWS

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

Professional License #: NH 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: _____ Date: _____

Signature of Applicant (*if different from owner*): Matt Ossin Chinburg Properties Date: 3/21/22

Signature of Agent: _____ Date: 3/22/22

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 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: _____ Date: _____

Signature of Applicant (*if different from owner*): Matt Ossin Chinburg Properties Date: 3/21/22

CERTIFICATION OF FEES

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

Signature of Property Owner: _____ Date: _____

Signature of Applicant (*if different from owner*): Matt Ossin Chinburg Properties Date: 3/21/22

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: _____ Date: _____

Signature of Applicant (*if different from owner*): Matt Ossin Chinburg Properties Date: 3/21/22

LETTER OF AUTHORIZATION

We, Dahn H. Tibbett, Norma M. Tibbett, Jahn H. Janetos & Susan G. Janetos, co-owners of Tax Map N Lot 13, Dover, NH, do hereby authorize Chinburg Development LLC, Agent, Haight Engineering PLLC, 181 Watson Road, Dover, NH as agents for Chinburg Development LLC, to act on my behalf in matters to be discussed with the Dover Planning Board, State Departments and other Land Use Boards concerning the property previously mentioned.

I hereby appoint Haight Engineering PLLC as my agent to act on my behalf in the review process, to include any required signatures.

Witness

Dahn H. Tibbett 8/5/21
Dahn H. Tibbett Date

Norma M. Tibbett 8/5/21
Norma M. Tibbett Date

Jahn H. Janetos 8/9/21
Jahn H. Janetos Date

Susan G. Janetos 8/4/21
Susan G. Janetos Date

WAIVER REQUEST
Subdivision Application
for
Chinburg Properties
Tax Map N, Lot 13-1
3/22/22

The subject parcel contains 34.5 acre having several areas of steep slopes and a large wetland area and fronts on Oak Street, Country Club Estates Drive, and Fresh Creek Road. The proposed subdivision layout would result in 12 lots having access from both Oak Street and Fresh Creek Road and will be serviced by municipal water and sewer services. This design would require improvements/upgrades to a portion of Fresh Creek Road for the proposed lots fronting on a short cul-de-sac.

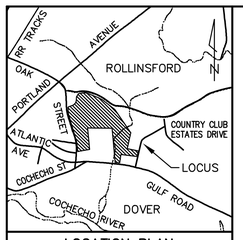
Per Dover Subdivision Regulations, Chapter 157-21 D., a yield plan is required to prove the feasibility of obtaining the same number of conventional lots as proposed in the Open Space Subdivision design. We have provided such a yield plan depicting 12 lots, however to do so requires showing a cul-de-sac for access to some of the lots.

Per Dover Subdivision Regulations, Chapter 157-32 J. regarding dead-end streets, a cul-de-sac is required to be not less than 500 feet, nor more than 1000 feet, in length. The submitted yield plan depicts a cul-de-sac of approximately 400 feet in length as measured from Fresh Creek Road. Of note is that the length of the cul-de-sac as measured from the intersection of Oak Street is over 500' and less than 1000'.

Dover Subdivision Regulations, Chapter 157-51 A. (2)
"Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations."

The 400 foot cul-de-sac design shown on the yield plan properly carries out the spirit and intent of the regulations and avoids impacts to the areas of steep slopes and wetlands.

Therefore, as requested by Planning Staff in order to move forward with the Open Space Subdivision design, the applicant is seeking relief from the minimum requirement of 500 feet to allow a cul-de-sac length of 400' as measured from the upgraded portion of Fresh Creek Road as depicted on the yield plan.



LOCATION PLAN
(NO SCALE)

LEGEND

- I.R.(set) – IRON ROD SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – SLOPES IN EXCESS OF 20 PERCENT

NH STATE PLANE NAD 83 - GPS OBS.

S.S. (fnd)
N – 257,453.86
E – 1,199,667.93

TOWN LINE

FRESH CREEK a.k.a. COUNTY ROAD
{public – R.O.W. width varies} {CLASS VI HIGHWAY}

ROLLINSFORD

TOWN LINE

DOVER

TOWN BOUND – ROLLINSFORD / DOVER #29

DOVER BOUND #29
GRANITE BOUND WITH DRILL HOLE IN TOP
0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE OF A WHITE PINE
VIEW LOOKING SOUTHERLY FROM ROADWAY.
THIS BOUND IS NOT LOCATED ON THE TOWN LINE. IT IS AN OFFSET WITNESS MONUMENT TO AN ANGLE POINT IN THE TOWN LINE.

RD 1899

3 / 23
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

25 / 80
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

3 / 21
MARK P. BARLOW
10 NORDIC LANE
ROLLINSFORD, NH 03869
4416 / 660

3 / 10
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820

25 / 43D
HUBBARD–LEARY, LLC
89 OAK STREET
DOVER, NH 03820
3245 / 2

25 / 43A
HOT ROD CITY, LLC
390 SIXTH STREET
DOVER, NH 03820
4184 / 143

OAK STREET {public – R.O.W. width varies}

35' WIDE EASEMENT TO GRANITE STATE GAS TRANSMISSION, INC.
REF. SCRD 666/341

50' WETLAND BUFFER

EDGE OF WETLAND (SEE NOTE 11)

N / 13-1

I.R.(set)
N – 256,955.318
E – 1,200,196.775

I.R.(set)
N – 256,947.966
E – 1,200,842.036

EMERSON BROOK

N / 13C-1
EDWARD J. MURPHY, JR.
ANN C. MURPHY
33 BELANGER DRIVE
DOVER, NH 03820
1019 / 622

25 / 41
GLENN S. WILSON
MARY F. MASTERSON
20 ELMWOOD AVENUE
DOVER, NH 03820
1571 / 289

ELMWOOD AVENUE

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

25 / 27
JOHN P. MAATTALA
JENNIFER A. MAATTALA
22 FAIRVIEW AVENUE
DOVER, NH 03820
4490 / 276

FAIRVIEW AVENUE

N / 13F
JAHN H. & SUSAN G. JANETOS
55 CARLTON WAY
HALES LOCATION, NH 03860
3655 / 154

30' WIDE ACCESS & UTILITY EASEMENT

WIRE FENCE LINE

BARN

GARAGE
HOUSE
DRIVEWAY

N / 13
N / 13C
JAHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

N / 13A

ZONE "X"
100 YEAR FLOOD
SEE NOTE 6

N / 13E
JEFFREY D. ANDRESS
ANNE K. ANDRESS
2A COUNTRY CLUB ESTATES
DOVER, NH 03820
4800 / 502

N / 12N
MARGARET A. CARTER
ROSEMARY L. FORCILLO
1 COUNTRY CLUB ESTATES DRIVE
1 COUNTRY CLUB
DOVER, NH 03820
4635 / 411

COUNTRY CLUB ESTATES DRIVE

N / 13B
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 321

N / 13B-1
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 320
S.S. (fnd)

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

25 / 1

ATLANTIC AVENUE

GULF ROAD {public – 66' wide R.O.W.} a.k.a. ELIOT BRIDGE ROAD

COCHECHO STREET

N / 14A
EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279
N / 15

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
HcC HOLLIS–CHARLTON FINE SANDY LOAMS,
8 TO 15 PERCENT SLOPES
HdB HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
3 TO 8 PERCENT SLOPES
HdC HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
8 TO 15 PERCENT SLOPES
HdD HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
15 TO 25 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		

21–1734	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.

YIELD LOT CALCULATIONS

LOT	FTG	AREA S.F.	Ac.	NON–WET NON–SLOPE	NON–BUFFER NON–SLOPE
1	150.0	66888.0	1.54	64597.0	53195.8
2	150.0	49883.6	1.15	40746.0	24103.2
3	150.0	40086.6	0.92	40086.6	40086.6
4	150.0	55476.4	1.27	41758.0	41758.0
5	157.8	43346.0	1.00	40081.8	40081.8
6	245.0	59179.8	1.36	40005.6	40005.6
7	150.0 SB	68301.0	1.57	40353.1	40353.1
8	150.0	54373.1	1.25	41419.5	41419.5
9	150.0	53614.5	1.23	50203.9	42131.4
10	167.6	97568.1	2.24	50372.1	26716.2
11	150.0	824714.0	18.93	113850.6	84529.6
12	575.2	50926.1	1.17	49239.4	36139.8

ROAD CL TO THROAT = 502.2'

1.) ZONING DISTRICT IS R40

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 40,000 S.F. = 40,000 S.F. NON–WETLAND NON–SLOPE = 24,000 S.F. OUTSIDE BUFFER (60%)
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

OSS YIELD PLAN
PREPARED FOR
DAHN H. TIBBETT & NORMA M. TIBBETT
AND
JAHN H. JANETOS & SUSAN G. JANETOS
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.	P 22–__
DRAWN BY: RJM	FILE: 1734\DWGS\22–1734 OSS
SCALE: 1" = 100'	DATE: FEBRUARY 10, 2022

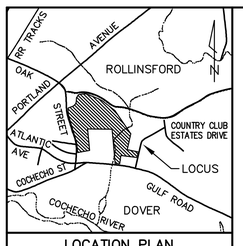
100 50 0 50 100 200 300 400

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

3/9/2022 08:34:00 File: \\CNE\server1\MSA Projects\1734\Drawings\22-1734 OSS.dwg Layout: OSS YIELD PLAN 2022-03-10



LOCATION PLAN
(NO SCALE)

LEGEND

I.R.(set) – IRON ROD SET
I.R.(fnd) – IRON ROD FOUND
S.S.(fnd) – STEEL STAKE FOUND
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
– STONE WALL
– EDGE OF WETLAND
– WETLAND
– SLOPES IN EXCESS OF 20 PERCENT

NH STATE PLANE NAD 83 – GPS OBS.

TOWN LINE

FRESH a.k.a. COUNTY ROAD

(public – R.O.W. width varies) (CLASS VI HIGHWAY)

ROLLINSFORD

DOVER

TOWN LINE

TOWN BOUND – ROLLINSFORD / DOVER #29

DOVER BOUND #29
GRANITE BOUND WITH DRILL HOLE IN TOP
0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE OF A WHITE PINE
VIEW LOOKING SOUTHERLY FROM ROADWAY.
THIS BOUND IS NOT LOCATED ON THE TOWN LINE. IT IS AN OFFSET WITNESS MONUMENT TO AN ANGLE POINT IN THE TOWN LINE.

RD 1899

3 / 23
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

25 / 80
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

3 / 21
MARK P. BARLOW
10 NORDIC LANE
ROLLINSFORD, NH 03869
4416 / 660

3 / 10
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820

S.S. (fnd)
N – 257,453.86
E – 1,199,667.93

25 / 43D
HUBBARD–LEARY, LLC
89 OAK STREET
DOVER, NH 03820
3245 / 2

25 / 43A
HOT ROD CITY, LLC
390 SIXTH STREET
DOVER, NH 03820
4184 / 143

OAK STREET (public – R.O.W. width varies)

LCA 10 – 20088 S.F.
LCA 11 – 19845 S.F.
LCA 9 – 17421 S.F.
LCA 8 – 19645 S.F.
LCA 5 – 25342 S.F.
LCA 4 – 25364 S.F.
LCA 12 – 6106 S.F.
LCA 6 – 15280 S.F.
LCA 3 – 27863 S.F.
LCA 2 – 25015 S.F.
LCA 1 – 18844 S.F.
LCA 13 – 36085 S.F.

50' WETLAND BUFFER

EDGE OF WETLAND (SEE NOTE 11)

35' WIDE EASEMENT TO GRANITE STATE GAS TRANSMISSION, INC.
REF. SCRD 666/341

N / 13-1

645.30'
N89°20'50"W

I.R.(set)
N – 256,955,318
E – 1,200,196,775

I.R.(set)
N – 256,947,966
E – 1,200,842,036

S05°19'55"E 445.70'

N05°19'55"W 900.00'

S34°29'32"E 738.23'

S12°28'08"W 240.00'

S77°31'52"E 300.00'

N08°12'54"W 221.45'

429.86'
N82°59'31"W

L1 S80°19'51"E 332.84'

N15°39'58"W 639.51'

S21°12'25"E 425.97'

No.	Bearing	Distance
L1	N05°48'59"W	15.56'
L2	N81°47'06"W	122.02'
L3	N15°41'21"W	94.61'
L4	N11°56'49"W	89.55'
L5	N01°27'45"W	94.54'
L6	N05°37'49"E	45.27'
L7	N68°12'33"E	111.97'
L8	N64°51'29"E	39.96'
L9	N46°36'13"E	78.90'
L10	N12°35'19"E	58.12'
L11	N03°44'27"E	99.80'
L12	N32°56'01"E	102.59'
L13	N80°09'31"E	120.00'
L14	N87°56'29"E	67.76'
L15	S73°55'09"E	55.67'
L16	S62°54'16"E	119.42'
L17	S12°28'08"W	190.00'
L18	S12°21'40"W	150.18'

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
HcC HOLLIS–CHARLTON FINE SANDY LOAMS,
8 TO 15 PERCENT SLOPES
HdB HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
3 TO 8 PERCENT SLOPES
HdC HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
8 TO 15 PERCENT SLOPES
HdD HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS,
15 TO 25 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\

25 / 41
GLENN S. WILSON
MARY F. MASTERSON
20 ELMWOOD AVENUE
DOVER, NH 03820
1571 / 289

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

25 / 27
JOHN P. MAATTALA
JENNIFER A. MAATTALA
22 FAIRVIEW AVENUE
DOVER, NH 03820
4490 / 276

25 / 1

N / 13
N / 13C
N / 13A
N / 13F
N / 14A
N / 15
N / 13C-1
N / 13B
N / 13B-1
N / 12N

ELMWOOD AVENUE
FAIRVIEW AVENUE
ATLANTIC AVENUE
GULF ROAD
COCHECHO STREET
EMERSON BROOK
COUNTRY CLUB ESTATES DRIVE
ELIOT BRIDGE ROAD (a.k.a.)
(public – 66' wide R.O.W.)

BARN
GARAGE
HOUSE
DRIVEWAY
WIRE FENCE LINE
30' WIDE ACCESS & UTILITY EASEMENT
ZONE "X" 100 YEAR FLOOD SEE NOTE 6

AHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

JAHN H. & SUSAN G. JANETOS
55 CARLTON WAY
HALES LOCATION, NH 03860
3655 / 154

EDWARD J. MURPHY, JR.
JAHN C. MURPHY
33 BELANGER DRIVE
DOVER, NH 03820
1019 / 622

JEFFREY D. ANDRESS
AMIE K. ANDRESS
2A COUNTRY CLUB ESTATES
DOVER, NH 03820
4800 / 502

MARGARET A. CARTER
ROSEMARY L. FORCILLO
ESTATES DRIVE
1 COUNTRY CLUB
DOVER, NH 03820
4635 / 411

NORMA TIBBETT
DAHN TIBBETT II
130 GULF ROAD
DOVER, NH 03820
3984 / 321

NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 320
S.S. (fnd)

COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

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.

NOTES:

1.) ZONING DISTRICT IS R40
OPEN SPACE SUBDIVISION

GENERAL REQUIREMENTS:

NO STRUCTURES OR SEPTIC SYSTEMS WILL BE ALLOWED TO BE BUILT IN:
SLOPE GREATER THAN 20 PERCENT
AREAS WITHIN CONSERVATION DISTRICTS
ALL FLOOD HAZARD AREAS
WETLANDS

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE SUBDIV. LOTS	= 20,000 S.F.
MINIMUM FRONTAGE SUBDIV. LOTS	= 40 FEET
MINIMUM BUFFER ALONG FRONTAGE	= 100 FEET
MINIMUM DISTANCE AROUND INDIVIDUAL UNITS IN CLUSTERS	
STREET SIDE UNITS	= 20 FEET
BETWEEN UNITS	= 30 FEET
MINIMUM BUILDING SETBACKS FOR SUBDIVISION LOTS	
ABUTTING A STREET	= 20 FEET
ABUTTING A LOT LINE	= 20 FEET
MINIMUM DISTANCE FROM EXISTING STRUCTURES OR DWELLING UNITS	= 100 FEET
MINIMUM DISTANCE FROM EXTERNAL BOUNDARIES	= 50 FEET

EXTERNAL BOUNDARY BUFFERS SHALL BE CONSIDERED AN UNDISTURBED NATURAL AREA FOR THE PURPOSE OF SHIELDING ABUTTERS

OPEN SPACE REQUIREMENTS.

THE AREA OF THE OPEN SPACE SHALL EQUAL OR EXCEED THE TOTAL ALLOWED REDUCTION IN THE LOT SIZES WITHIN THE OPEN SPACE SUBDIVISION AND SHALL BE PERMANENTLY DEDICATED AS OPEN SPACE OR FOR MUNICIPAL USE, AS AGREED UPON. A MINIMUM OF 50% OF THE TOTAL OPEN SPACE LAND MUST BE USABLE UPLANDS AND REASONABLY ACCESSIBLE TO ALL PROPERTY OWNERS IN THE PROJECT.

YIELD PLAN DEPICTS 12 CONVENTIONAL LOTS
12 * 20,000 S.F. = 240,000 S.F. MINIMUM OPEN SPACE
= 120,000 S.F. MINIMUM USABLE UPLANDS

CLUSTER SUBDIVISION

TOTAL PARCEL AREA = 1,503,926 S.F. / 34.53 Ac.
WETLANDS = = 422,414 S.F. / 9.70 Ac.

LCA – LIMITED COMMON AREA
TOTAL LCA = 329,622 S.F. / 7.57 Ac.

BUILDING FOOTPRINT SHOWN = 60' x 80'

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		
21–1734		SUBDIVISION	–	–
PROJECT NO		TYPE	FIELDBOOK & PAGES	

OSS CLUSTER PLAN
PREPARED FOR
DAHN H. TIBBETT & NORMA M. TIBBETT
AND
JAHN H. JANETOS & SUSAN G. JANETOS
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22–___

DRAWN BY: RJM | FILE: 1734\DWGS\22–1734 OSS
SCALE: 1" = 100' | DATE: FEBRUARY 10, 2022

100 50 0 50 100 200 300 400

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

3/9/2022 08:32:16 File: \\CNEserver1\MSA Projects\1734\Drawing\22-1734 OSS.dwg Layout: OSS CLUSTER PLAN 2022-02-10

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: Westfield, LLC Telephone # 603-749-2800

Address of Applicant: 340 Central Avenue, Suite 202 Dover, NH 03821

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

Address of Property Owner: SAME

E-Mail Address: chad@summitlanddev.com

PROPERTY INFORMATION

Address of Property: 64 Littleworth Road

Assessor's Map # G Lot(s) # 2

Zoning District(s) CM Overlay District(s) Conservation District

Size of Parcel: 58.91 ac Property Deed: Book 4733 Page: 471

Existing Use of Property: VACANT

SUBDIVISION INFORMATION

Existing Number of Lots: 1 Proposed Number of Lots: 3

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: 1434 feet

Estimated value of construction: $870,000 New impervious area (in s.f.): 58,180 s.f.

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.) 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

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.) Bruce A. Gilday, CSS, CWS

Address 43 Rockingham Street Concord, NH 03301 Telephone #: 603-228-5775

Professional License #: NH CSS#088, NH CWS#012 E-mail address: bagilday@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: 3/21/22

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

Signature of Agent: _____ Date: 3/22/22

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: 3/21/22

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: _____ Date: 3/21/22

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

CERTIFICATION OF FEES

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

Signature of Property Owner: _____ Date: 3/21/22

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: _____ Date: 3/21/22

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

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: Westfield, LLC Telephone # 603-749-2800

Address of Applicant: 340 Central Avenue, Suite 202 Dover, NH 03821

E-Mail Address: chad@summitlanddev.com

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

Address of Property Owner: SAME

PROPERTY INFORMATION

Assessor's Map # G Lot(s) # 2

Address of Property: 64 Littleworth Road

Zoning District(s) CM Overlay District(s) Conservation District

Existing Use of Property: VACANT

CONDITIONAL USE PERMIT INFORMATION

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

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

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

To allow for a wetland impact of 1,231 s.f. and associated wetland buffer impacts totalling 30,073 s.f. to intall a culvert and construct an entrance to the new lots and a road consisting of two cul-de-sacs.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NH DES Wetland Permit - submission to State is pending

Name of Professional That Prepared Plans: Kevin McEneaney, LLS- McEneaney Survey Associates

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

Professional License #: Kevin McEneaney, NH LLS 661 E-mail address: kevin@surveynh.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: 3/21/22

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

Signature of Agent: _____ Date: 3/22/22

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: 3/21/22

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
G	2	Westfield, LLC	340 Central Avenue, Suite 202 Dover, NH 03821

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

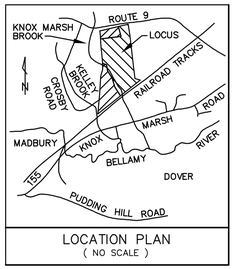
Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kevin McEneaney, LLS	McEneaney Survey Associates	24 Chestnut Street Dover, NH 03820
Stephen J. Haight, PE	Civilworks New England	P.O. Box 1166 Dover, NH 03821
Bruce A. Gilday, CSS, CWS		43 Rockingham Street Concord, NH 03301

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

3 LOT SUBDIVISION
FOR
WESTFIELD, LLC.
TAX MAP G, LOT No. 2
NH ROUTE 9 - LITTLEWORTH ROAD
DOVER, NH
MARCH 22, 2022



LOCATION PLAN
(NO SCALE)

OWNER

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
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

BRUCE A. GILDAY, CWS
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
(603) 228–5775

SHEET INDEX	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
SUBDIVISION PLAN (BY MCENEANEY SURVEY)	3 - 8
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	9 - 11
NOTE SHEET	12
ROAD & UTILITY PLAN	13
ROAD & UTILITY PROFILES	14 - 15
CONDITIONAL USE PLAN	16
EROSION CONTROL NOTES	17
EROSION CONTROL DETAILS	18
DETAILS	19 - 21



NEIGHBORHOOD PLAN

2

WESTFIELD, LLC
3 LOT SUBDIVSION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

DATE: 3-22-22				
SCALE: 1"=300'				
DRAWN BY: MJM				
DESIGN BY: DJL				
APPROVED BY:SJH				
PROJECT NO: 18043				
FILE: 18043-SITE	NO.	REVISION	APP'D	DATE

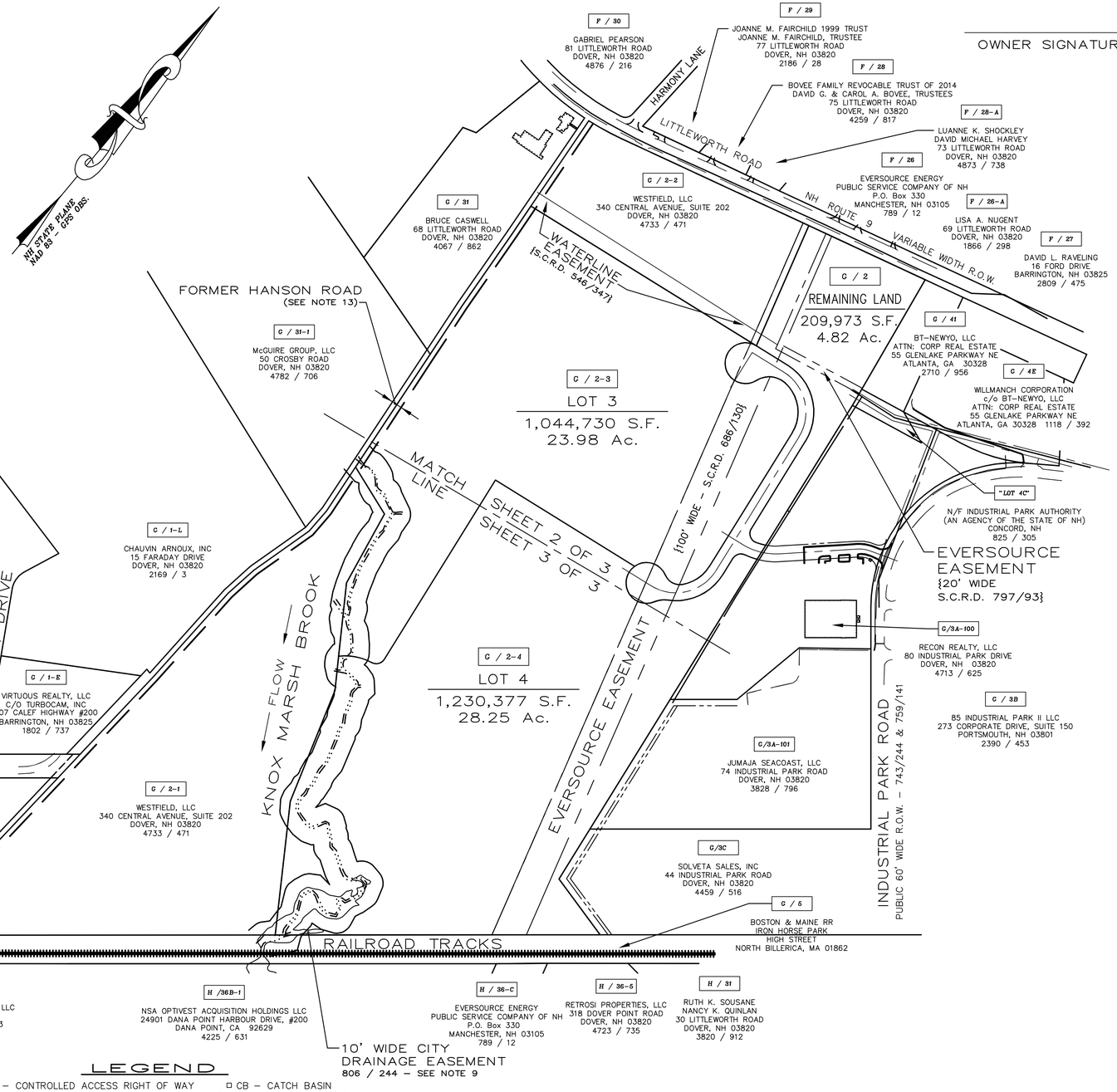
NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

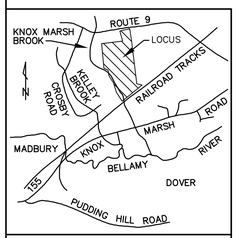
REFERENCE PLANS:

1.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 LITTLEWORTH ROAD & CROSBY ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 400'; DATED: FEBRUARY 9, 2021, REVISED THROUGH 3/24/21; BY THIS OFFICE. DOVER PLANNING FILE 21-07. RECORDED S.C.R.D. PLANS 12388, 12389, 12390.

2.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 NH ROUTE 9 – LITTLEWORTH ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 100'; DATED: JUNE 21, 2021, REVISED THROUGH 9/30/21; BY THIS OFFICE. DOVER PLANNING FILE 21-41. RECORDED S.C.R.D. PLANS 12514, 12515 & 12516.

3.) CITY OF DOVER, PUBLIC WORKS DEPT., PROPOSED DRAINAGE DITCH FROM DOVER INDUSTRIAL PARK THROUGH RILEY LAND TO BROOK. SCALE: 1" = 100'; DATED: MARCH 23, 1965; BY: CITY OF DOVER ENGINEERING, FILE No. 12-49.





LOCATION PLAN
(NO SCALE)

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	SUBDIV.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

LEGEND

C.A.R.O.W. – CONTROLLED ACCESS RIGHT OF WAY
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
CB – CATCH BASIN
SMH – SEWER MANHOLE
G PP – GAS – PLASTIC PIPE
HDPE – HIGH DENSITY POLYETHYLINE
CMP – CORRUGATED METAL PIPE
RCP – REINFORCED CONCRETE PIPE
PVC – POLYVINYL CHLORIDE

"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."

OWNER SIGNATURE

NOTES:

1.) OWNERS OF RECORD:
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4733, PAGE 471

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

3.) PLAN INTENT: TO SUBDIVIDE THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. LOTS ARE SERVED BY MUNICIPAL SEWER AND WATER SERVICE.

4.) TOTAL PARCEL AREA: 2,566,225 S.F. / 58.91 Ac.

5.) ZONING DISTRICT: COMMERCIAL MANUFACTURING (CM) DISTRICT:

MINIMUM LOT SIZE	= 20,000 S.F.
LOT COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 100 FEET
FRONT SETBACK	= 35 FEET
SIDE SETBACK	= 10 FEET MIN.
REAR SETBACK	= 10 FEET MIN.
BUILDING HEIGHT	= 50 FEET MAX.

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED IN THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015, THAT AREA DIRECTLY ADJACENT TO THE RAILROAD TRACKS AT KNOX MARSH BROOK.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JANUARY 22, 2021.

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

9.) THE PARCEL IS SUBJECT TO A TEN (10) FOOT WIDE DRAINAGE EASEMENT GRANTED TO THE CITY OF DOVER, AS DESCRIBED IN S.C.R.D. VOLUME 806, PAGE 244. (SEE REFERENCE PLAN No. 3).

10.) THE PARCEL IS SUBJECT TO RIGHTS OF DOVER TO MAINTAIN A WATER LINE AS DESCRIBED IN S.C.R.D. VOLUME 546, PAGE 347.

11.) THE PARCEL IS SUBJECT TO A 100' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MARCH 12, 1958 AND DESCRIBED IN S.C.R.D. VOLUME 686, PAGE 130.

12.) THE PARCEL IS SUBJECT TO A 20' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MAY 27, 1965 AND DESCRIBED IN S.C.R.D. VOLUME 797, PAGE 93.

13.) HANSON ROAD (A/K/A HANSON WAY) IS AN UNIMPROVED 33' WIDE ROAD. THE CITY OF DOVER DISCONTINUED HANSON ROAD AS A PUBLIC WAY WITH THE 2008 RESOLUTION, R-2008.05.14-80. PER ACCEPTED PRACTICE, TITLE TO THE UNDERLYING LAND OF THE ROAD EXTENDS TO THE CENTERLINE FOR ABUTTING PARCELS. USE RIGHTS OF THE ENTIRE WIDTH OF HANSON ROAD MAY EXIST FOR ABUTTING OWNERS.

14.) SEE SHEETS 2 AND 3 OF 3 FOR PARCEL METES AND BOUNDS.

15.) THE PARCELS ARE SUBJECT TO A DOVER CONSERVATION OVERRIDING DISTRICT, 170-27B.(2), AREAS WITHIN FIFTY (50) FEET OF A FRESHWATER BROOK.

CONTINUED ON SHEET 2 OF 3.

3 SHEET 1 OF 3

SUBDIVISION PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

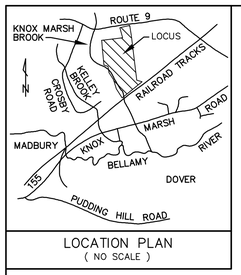
DOVER PLANNING FILE No. P 22-__

DRAWN BY: RJM	FILE: \2210\Dwgs\22-2210S
SCALE: 1" = 200'	DATE: MARCH 15, 2022

200 100 0 100 200 400 600 800

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)

NH STATE PLANE
NAD 83 - GPS OBS.

F / 30
GABRIEL PEARSON
81 LITTLEWORTH ROAD
DOVER, NH 03820
4876 / 216

F / 29
JOANNE M. FAIRCHILD 1999 TRUST
JOANNE M. FAIRCHILD, TRUSTEE
77 LITTLEWORTH ROAD
DOVER, NH 03820
2186 / 28

F / 28
BOVEE FAMILY REVOCABLE TRUST OF 2014
DAVID G. & CAROL A. BOVEE, TRUSTEES
75 LITTLEWORTH ROAD
DOVER, NH 03820
4259 / 817

F / 28-A
LUANNE K. SHOCKLEY
DAVID MICHAEL HARVEY
73 LITTLEWORTH ROAD
DOVER, NH 03820
4873 / 738

F / 26
EVERSOURCE ENERGY
PUBLIC SERVICE COMPANY OF NH
P.O. Box 330
MANCHESTER, NH 03105
789 / 12

F / 26-A
LISA A. NUGENT
69 LITTLEWORTH ROAD
DOVER, NH 03820
1866 / 298

F / 27
DAVID L. RAVELING
16 FORD DRIVE
BARRINGTON, NH 03825
2809 / 475

HARMONY LANE

LITTLEWORTH ROAD

NH ROUTE 9

VARIABLE WIDTH R.O.W.

C / 31
BRUCE CASWELL
68 LITTLEWORTH ROAD
DOVER, NH 03820
4067 / 862

C / 2-2
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471

WATERLINE EASEMENT
(SEE NOTE 10)

LIMITS OF FORMER HANSON
ROAD RIGHT OF WAY

L2

N05°12'28"W
274.32'

N81°47'48"E
842.67'

N16°23'24"W
416.75'

N74°55'12"E
408.04'

C / 2-3
LOT 3
1,044,730 S.F.
23.98 Ac.

C / 2
REMAINING LAND
209,973 S.F.
4.82 Ac.

C / 41
BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328
2710 / 956

C / 4E
WILLMANCH CORPORATION
c/o BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328 1118 / 392

FORMER HANSON ROAD
(SEE NOTE 13)

C / 31-1
McGUIRE GROUP, LLC
50 CROSBY ROAD
DOVER, NH 03820
4782 / 706

N06°32'55"W
185.10'

N06°32'55"W
429.88'

C4

L1

S09°36'54"E
461.57'

C5

C6

C7

C3

EVERSOURCE
EASEMENT
(20' WIDE)
(SEE NOTE 12)

CITY WATER
MAIN EASEMENT
510 / 315 & 288 / 203

"LOT 4C"

N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

EDGE OF WETLAND (TYP.)
50' WETLAND BUFFER (TYP.)

SMH
RIM = 115.0'

SMH
RIM = 115.1'

MATCH
LINE
SHEET
3

N71°33'50"W
175.63'

CONSERVATION DISTRICT
(50' FROM REFERENCE
LINE (TYP.)

N11°02'19"W
249.86'

KNOX MARSH BROOK
FLOW
(SEE NOTE 15)

670.31'
S08°12'12"E

S81°47'48"W
520.26'

EVERSOURCE EASEMENT
(100' WIDE)
(SEE NOTE 11)

499.47'
S08°12'12"E

N08°12'12"W
327.29'

522.59'
S08°12'12"E

C / 3A-100
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820
4713 / 625

20' WIDE WATER
MAIN EASEMENT
743/244 & 759/141

APPROXIMATE WATER
MAIN LOCATION

INDUSTRIAL
PARK ROAD
PUBLIC 60' WIDE R.O.W.
743/244 & 759/141

C / 3B
85 INDUSTRIAL PARK II LLC
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
2390 / 453

C / 2-1
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471

C / 2-4
LOT 4

C10
C9
C8
L3
C13
C14
L5
C15
C16
C17
C1
L2
L4
C2

523.88'
S08°12'12"E

APPROXIMATE WATER
MAIN LOCATION

NOTES CONTINUED FROM SHEET 1 OF 3

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

17.) WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED ON OCTOBER 5, 2021 BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS); 43 ROCKINGHAM STREET, CONCORD, NH 03301.

18.) GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND POINTS OF TANGENCY.
IRON RODS WITH SURVEY IDENTIFICATION CAPS TO BE SET AT ALL PROPERTY CORNERS.

* SEE SHEET 1 OF 3 FOR NOTES 1–15, REFERENCE PLANS AND LEGEND.

* SEE SHEET 3 OF 3 FOR LINE AND CURVE METES AND BOUNDS TABLES.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19–2210	SUBDIV.	20–13	65–75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

SUBDIVISION PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22–___

DRAWN BY: RJM	FILE: \2210\Dwgs\22–2210S
SCALE: 1" = 100'	DATE: MARCH 15, 2022

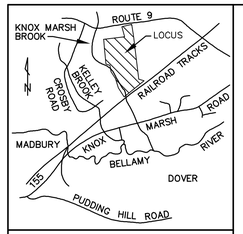
100 50 0 50 100 200 300 400

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

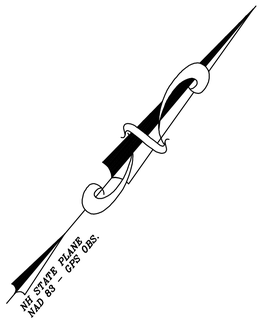
STATE OF NEW HAMPSHIRE
No. 661
KEVIN M. McENEANEY
LICENSED LAND SURVEYOR
SIGNATURE

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

SURVEYING – PLANNING – CONSULTING

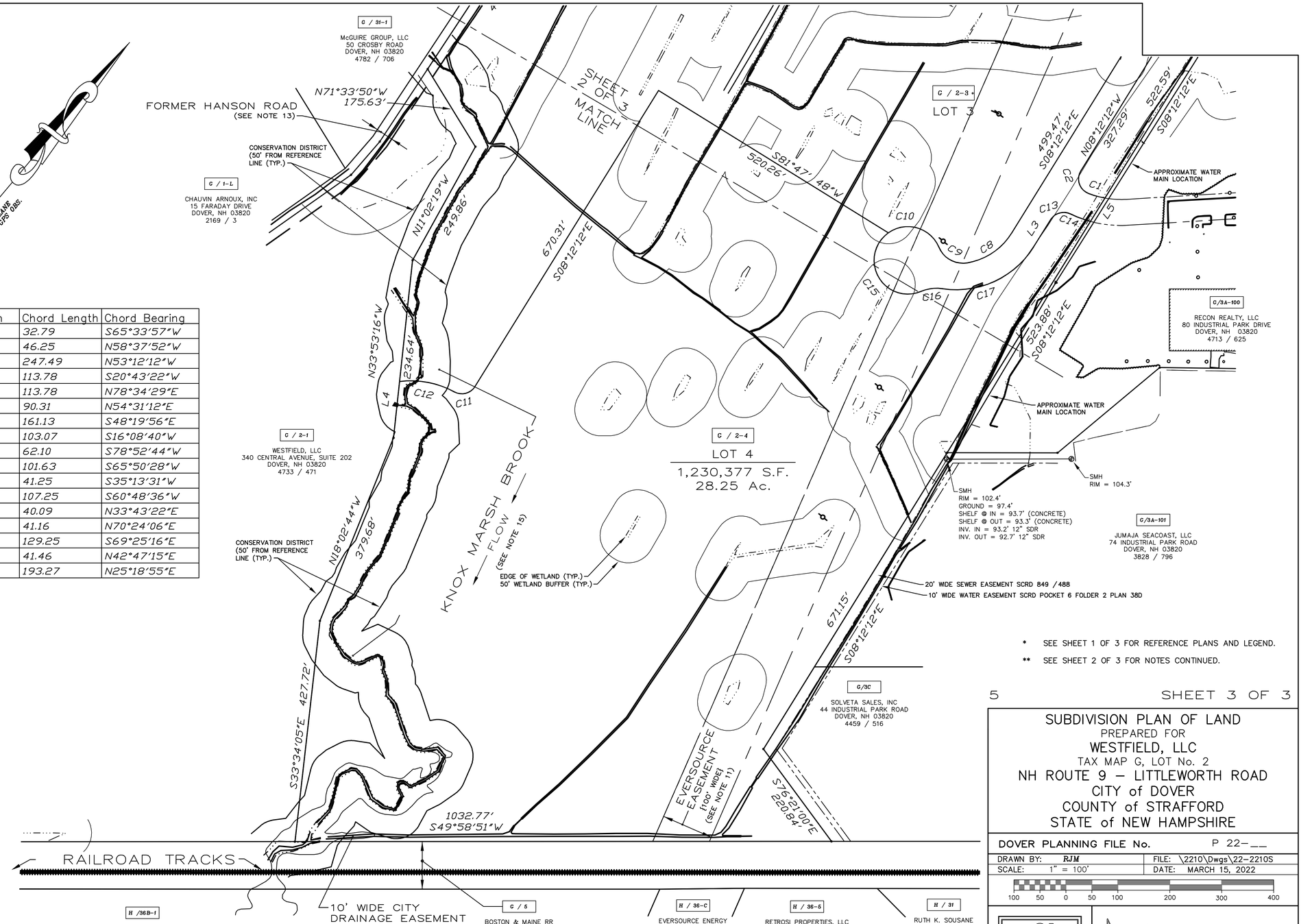


LOCATION PLAN
(NO SCALE)



No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	10°45'03"	175.00	32.84	32.79	S65°33'57"W
C2	100°51'20"	30.00	52.81	46.25	N58°37'52"W
C3	90°00'00"	175.00	274.89	247.49	N53°12'12"W
C4	122°08'53"	65.00	138.57	113.78	S20°43'22"W
C5	122°08'53"	65.00	138.57	113.78	N78°34'29"E
C6	74°02'18"	75.00	96.92	90.31	N54°31'12"E
C7	80°15'28"	125.00	175.10	161.13	S48°19'56"E
C8	48°41'42"	125.00	106.24	103.07	S16°08'40"W
C9	76°46'26"	50.00	67.00	62.10	S78°52'44"W
C10	102°50'57"	65.00	116.68	101.63	S65°50'28"W
C11	86°51'25"	30.00	45.48	41.25	S35°13'31"W
C12	35°41'14"	175.00	109.00	107.25	S60°48'36"W
C13	83°51'08"	30.00	43.90	40.09	N33°43'22"E
C14	10°29'42"	225.00	41.21	41.16	N70°24'06"E
C15	167°40'32"	65.00	190.22	129.25	S69°25'16"E
C16	32°05'34"	75.00	42.01	41.46	N42°47'15"E
C17	67°02'13"	175.00	204.75	193.27	N25°18'55"E

No.	Bearing	Distance
L1	S81°47'48"W	117.69'
L2	N05°49'11"W	109.82'
L3	N08°12'12"W	61.05'
L4	N33°53'16"W	109.23'
L5	N08°12'11"W	52.87'



* SEE SHEET 1 OF 3 FOR REFERENCE PLANS AND LEGEND.

** SEE SHEET 2 OF 3 FOR NOTES CONTINUED.

"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

19-2210	SUBDIV.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

5 SHEET 3 OF 3

SUBDIVISION PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 - LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-__

DRAWN BY: RJM	FILE: \2210\Dwgs\22-2210S
SCALE: 1" = 100'	DATE: MARCH 15, 2022

100 50 0 50 100 200 300 400

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

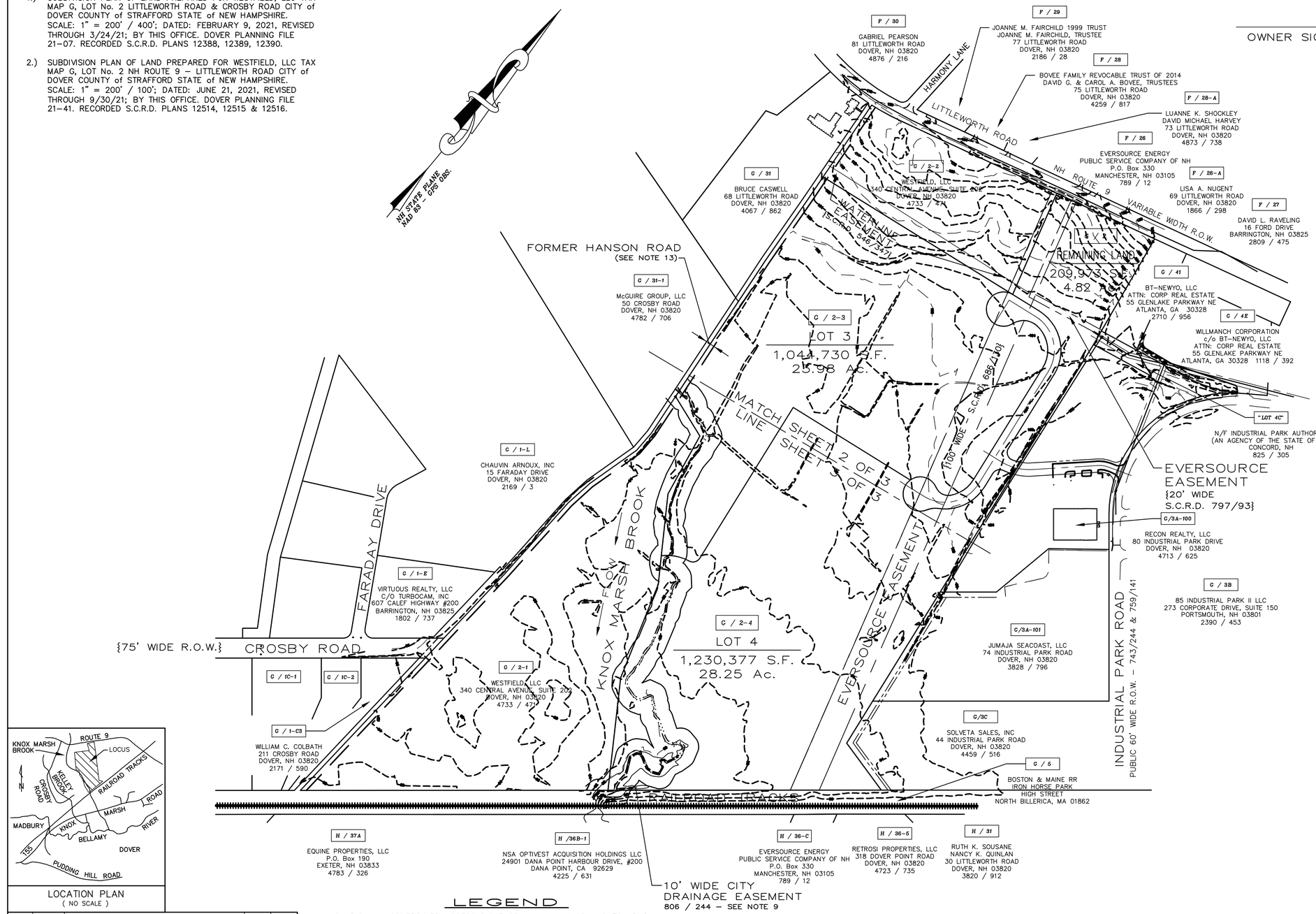
McEneaney Survey Associates
of NEW ENGLAND
P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

REFERENCE PLANS:

1.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 LITTLEWORTH ROAD & CROSBY ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 400'; DATED: FEBRUARY 9, 2021, REVISED THROUGH 3/24/21; BY THIS OFFICE. DOVER PLANNING FILE 21-07. RECORDED S.C.R.D. PLANS 12388, 12389, 12390.

2.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 NH ROUTE 9 – LITTLEWORTH ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 100'; DATED: JUNE 21, 2021, REVISED THROUGH 9/30/21; BY THIS OFFICE. DOVER PLANNING FILE 21-41. RECORDED S.C.R.D. PLANS 12514, 12515 & 12516.



LOCATION PLAN
(NO SCALE)

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	SUBDIV.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

LEGEND

C.A.R.O.W. – CONTROLLED ACCESS RIGHT OF WAY
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
CB – CATCH BASIN
SMH – SEWER MANHOLE
G PP – GAS – PLASTIC PIPE
HDPE – HIGH DENSITY POLYETHYLINE
CMP – CORRUGATED METAL PIPE
RCP – REINFORCED CONCRETE PIPE
PVC – POLYVINYL CHLORIDE
128 – CONTOUR LINE (2 FOOT INTERVAL)

"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."

NOTES:

1.) OWNERS OF RECORD:

OWNER SIGNATURE

WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4733, PAGE 471

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

3.) PLAN INTENT: TO SUBDIVIDE THE SUBJECT PARCEL INTO THREE (3) LOTS AS SHOWN. LOTS ARE SERVED BY MUNICIPAL SEWER AND WATER SERVICE.

4.) TOTAL PARCEL AREA: 2,566,225 S.F. / 58.91 Ac.

5.) ZONING DISTRICT: COMMERCIAL MANUFACTURING (CM) DISTRICT:

MINIMUM LOT SIZE	= 20,000 S.F.
LOT COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 100 FEET
FRONT SETBACK	= 35 FEET
SIDE SETBACK	= 10 FEET MIN.
REAR SETBACK	= 10 FEET MIN.
BUILDING HEIGHT	= 50 FEET MAX.

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED IN THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015, THAT AREA DIRECTLY ADJACENT TO THE RAILROAD TRACKS AT KNOX MARSH BROOK.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JANUARY 22, 2021.

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

9.) THE PARCEL IS SUBJECT TO A TEN (10) FOOT WIDE DRAINAGE EASEMENT GRANTED TO THE CITY OF DOVER, AS DESCRIBED IN S.C.R.D. VOLUME 806, PAGE 244. (SEE REFERENCE PLAN No. 3).

10.) THE PARCEL IS SUBJECT TO RIGHTS OF DOVER TO MAINTAIN A WATER LINE AS DESCRIBED IN S.C.R.D. VOLUME 546, PAGE 347.

11.) THE PARCEL IS SUBJECT TO A 100' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MARCH 12, 1958 AND DESCRIBED IN S.C.R.D. VOLUME 686, PAGE 130.

12.) THE PARCEL IS SUBJECT TO A 20' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MAY 27, 1965 AND DESCRIBED IN S.C.R.D. VOLUME 797, PAGE 93.

13.) HANSON ROAD (A/K/A HANSON WAY) IS AN UNIMPROVED 33' WIDE ROAD. THE CITY OF DOVER DISCONTINUED HANSON ROAD AS A PUBLIC WAY WITH THE 2008 RESOLUTION, R-2008.05.14-80. PER ACCEPTED PRACTICE, TITLE TO THE UNDERLYING LAND OF THE ROAD EXTENDS TO THE CENTERLINE FOR ABUTTING PARCELS. USE RIGHTS OF THE ENTIRE WIDTH OF HANSON ROAD MAY EXIST FOR ABUTTING OWNERS.

14.) SEE SHEETS 2 AND 3 OF 3 FOR PARCEL METES AND BOUNDS.

15.) THE PARCELS ARE SUBJECT TO A DOVER CONSERVATION OVERRIDING DISTRICT, 170-27B.(2), AREAS WITHIN FIFTY (50) FEET OF A FRESHWATER BROOK.

CONTINUED ON SHEET 2 OF 3.

6

TOPOGRAPHIC SUBDIVISION PLAN OF LAND

PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-__

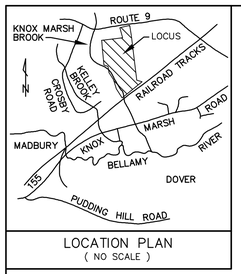
DRAWN BY: RJM	FILE: \2210\Dwgs\22-2210S
SCALE: 1" = 200'	DATE: MARCH 15, 2022

200 100 0 100 200 400 600 800

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)

NH STATE PLANE
NAD 83 - GPS OBS.

F / 30
GABRIEL PEARSON
81 LITTLEWORTH ROAD
DOVER, NH 03820
4876 / 216

F / 29
JOANNE M. FAIRCHILD 1999 TRUST
JOANNE M. FAIRCHILD, TRUSTEE
77 LITTLEWORTH ROAD
DOVER, NH 03820
2186 / 28

F / 28
BOVEE FAMILY REVOCABLE TRUST OF 2014
DAVID G. & CAROL A. BOVEE, TRUSTEES
75 LITTLEWORTH ROAD
DOVER, NH 03820
4259 / 817

F / 28-A
LUANNE K. SHOCKLEY
DAVID MICHAEL HARVEY
73 LITTLEWORTH ROAD
DOVER, NH 03820
4873 / 738

F / 26
EVERSOURCE ENERGY
PUBLIC SERVICE COMPANY OF NH
P.O. Box 330
MANCHESTER, NH 03105
789 / 12

F / 26-A
LISA A. NUGENT
69 LITTLEWORTH ROAD
DOVER, NH 03820
1866 / 298

F / 27
DAVID L. RAVELING
16 FORD DRIVE
BARRINGTON, NH 03825
2809 / 475

HARMONY LANE
LITTLEWORTH ROAD / NH ROUTE 9
VARIABLE WIDTH R.O.W.

C / 31
BRUCE CASWELL
68 LITTLEWORTH ROAD
DOVER, NH 03820
4067 / 862

C / 2-2
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471

C / 2-3
LOT 3
1044,730 S.F.
23.98 Ac.

C / 2
REMAINING LAND
209,973 S.F.
4.82 Ac.

C / 41
BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328
2710 / 956

C / 4E
WILLMANCH CORPORATION
c/o BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328 1118 / 392

LIMITS OF FORMER HANSON ROAD RIGHT OF WAY

WATERLINE EASEMENT (SEE NOTE 10)

L2 N05°12'28"W 274.32'

N05°32'55"W 185.10'

N81°47'48"E 842.67'

N15°23'24"W 416.75'

N84°55'12"E 408.04'

S19°36'54"E 461.57'

18" HDPE CULVERT
INV. IN = 102.7'
INV. OUT = 102.5'

FORMER HANSON ROAD
(SEE NOTE 13)

C / 31-1
McGUIRE GROUP, LLC
50 CROSBY ROAD
DOVER, NH 03820
4782 / 706

N06°32'55"W 429.88'

EDGE OF WETLAND (TYP.)
50' WETLAND BUFFER (TYP.)

EVERSOURCE EASEMENT
(20' WIDE)
(SEE NOTE 12)

CITY WATER MAIN EASEMENT
510 / 315 & 288 / 203

18" CMP CULVERT
INV. = 107.9'

"LOT 4C"
N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

8" PVC CULVERT
INV. = 112.1'

SMH
RIM = 115.0'

15" RCP CULVERT
INV. = 112.1'

15" RCP CULVERT
INV. = 112.6'

CB
RIM = 115.9'

SMH
RIM = 115.1'

18" RCP CULVERT
INV. = 110.0'

15" PVC CULVERT
INV. IN = 97.1'
INV. OUT = 96.8'

15" PVC CULVERT
INV. IN = 100.5'
INV. OUT = 100.1'

EVERSOURCE EASEMENT (100' WIDE) (SEE NOTE 11)

499.47' S08°12'12"E
522.59' S08°12'12"E
92.29' N08°12'12"E

C/3A-100
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820
4713 / 625

24" HDPE CULVERT
INV. IN = 102.7'
INV. OUT = 102.6'

APPROXIMATE WATER MAIN LOCATION

20' WIDE WATER MAIN EASEMENT
743/244 & 759/141

INDUSTRIAL PARK ROAD
PUBLIC 60' WIDE R.O.W.
743/244 & 759/141

C / 3B
85 INDUSTRIAL PARK II LLC
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
2390 / 453

MATCH LINE SHEET 3 OF 3

CONSERVATION DISTRICT (50' FROM REFERENCE LINE (TYP.)

N71°33'50"W 175.63'

N71°33'50"W 249.86'

KNOX MARSH BROOK FLOW (SEE NOTE 15)

15" PVC CULVERT
INV. IN = 93.6'
INV. OUT = 93.6'

S81°47'48"W 320.26'

670.31' S08°12'12"E

15" PVC TWIN CULVERTS
INV. IN = 93.1' N
INV. IN = 93.0' S
INV. OUT = 92.9' N
INV. OUT = 93.0' S

C / 2-1
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471

C / 2-4
LOT 4

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18

L1 L2 L3 L4 L5

S23°38'08"E
S08°12'12"E

APPROXIMATE WATER MAIN LOCATION

NOTES CONTINUED FROM SHEET 1 OF 3

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

17.) WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED ON OCTOBER 5, 2021 BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS); 43 ROCKINGHAM STREET, CONCORD, NH 03301.

18.) GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND POINTS OF TANGENCY. IRON RODS WITH SURVEY IDENTIFICATION CAPS TO BE SET AT ALL PROPERTY CORNERS.

* SEE SHEET 1 OF 3 FOR NOTES 1–15, REFERENCE PLANS AND LEGEND.

* SEE SHEET 3 OF 3 FOR LINE AND CURVE METES AND BOUNDS TABLES.

"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		

19–2210	SUBDIV.	20–13	65–75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

SHEET 2 OF 3

TOPOGRAPHIC SUBDIVISION PLAN OF LAND

PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22–___

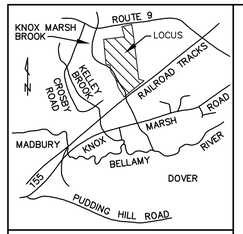
DRAWN BY: RJM	FILE: \2210\Dwgs\22–2210S
SCALE: 1" = 100'	DATE: MARCH 15, 2022

100 50 0 50 100 200 300 400

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

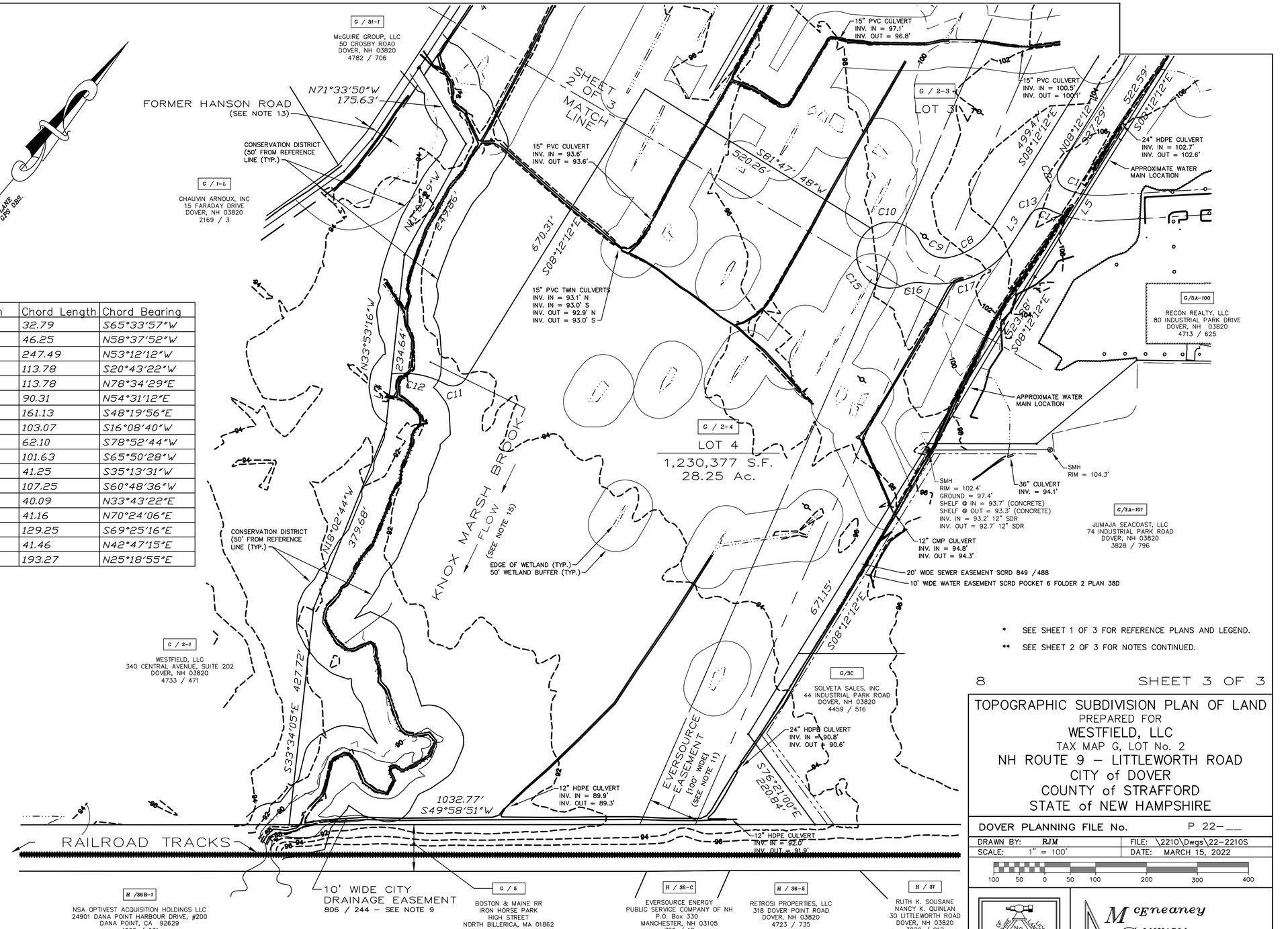


LOCATION PLAN
(NO SCALE)

NO STATE PLANE NAD 83 GPS OBS.

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	10°45'03"	175.00	32.84	32.79	S65°33'57"W
C2	100°51'20"	30.00	52.81	46.25	N58°37'52"W
C3	90°00'00"	175.00	274.89	247.49	N53°12'12"W
C4	122°08'53"	65.00	138.57	113.78	S20°43'22"W
C5	122°08'53"	65.00	138.57	113.78	N78°34'29"E
C6	74°02'18"	75.00	96.92	90.31	N54°31'12"E
C7	80°15'28"	125.00	175.10	161.13	S48°19'56"E
C8	48°41'42"	125.00	106.24	103.07	S16°08'40"W
C9	76°46'26"	50.00	67.00	62.10	S78°52'44"W
C10	102°50'57"	65.00	116.68	101.63	S65°50'28"W
C11	86°51'25"	30.00	45.48	41.25	S35°13'31"W
C12	35°41'14"	175.00	109.00	107.25	S60°48'36"W
C13	83°51'08"	30.00	43.90	40.09	N33°43'22"E
C14	10°29'42"	225.00	41.21	41.16	N70°24'06"E
C15	167°40'32"	65.00	190.22	129.25	S69°25'16"E
C16	32°05'34"	75.00	42.01	41.46	N42°47'15"E
C17	67°02'13"	175.00	204.75	193.27	N25°18'55"E

No.	Bearing	Distance
L1	S81°47'48"W	117.69'
L2	N05°49'11"W	109.82'
L3	N08°12'12"W	61.05'
L4	N33°53'16"W	109.23'
L5	N08°12'11"W	52.87'



* SEE SHEET 1 OF 3 FOR REFERENCE PLANS AND LEGEND.

** SEE SHEET 2 OF 3 FOR NOTES CONTINUED.

TOPOGRAPHIC SUBDIVISION PLAN OF LAND

PREPARED FOR

WESTFIELD, LLC

TAX MAP G, LOT No. 2

NH ROUTE 9 – LITTLEWORTH ROAD

CITY of DOVER

COUNTY of STRAFFORD

STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-__

DRAWN BY: RJM	FILE: \2210\Dwgs\22-2210S
SCALE: 1" = 100'	DATE: MARCH 15, 2022

100 50 0 50 100 200 300 400

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	SUBDIV.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

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

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

SIGNATURE

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

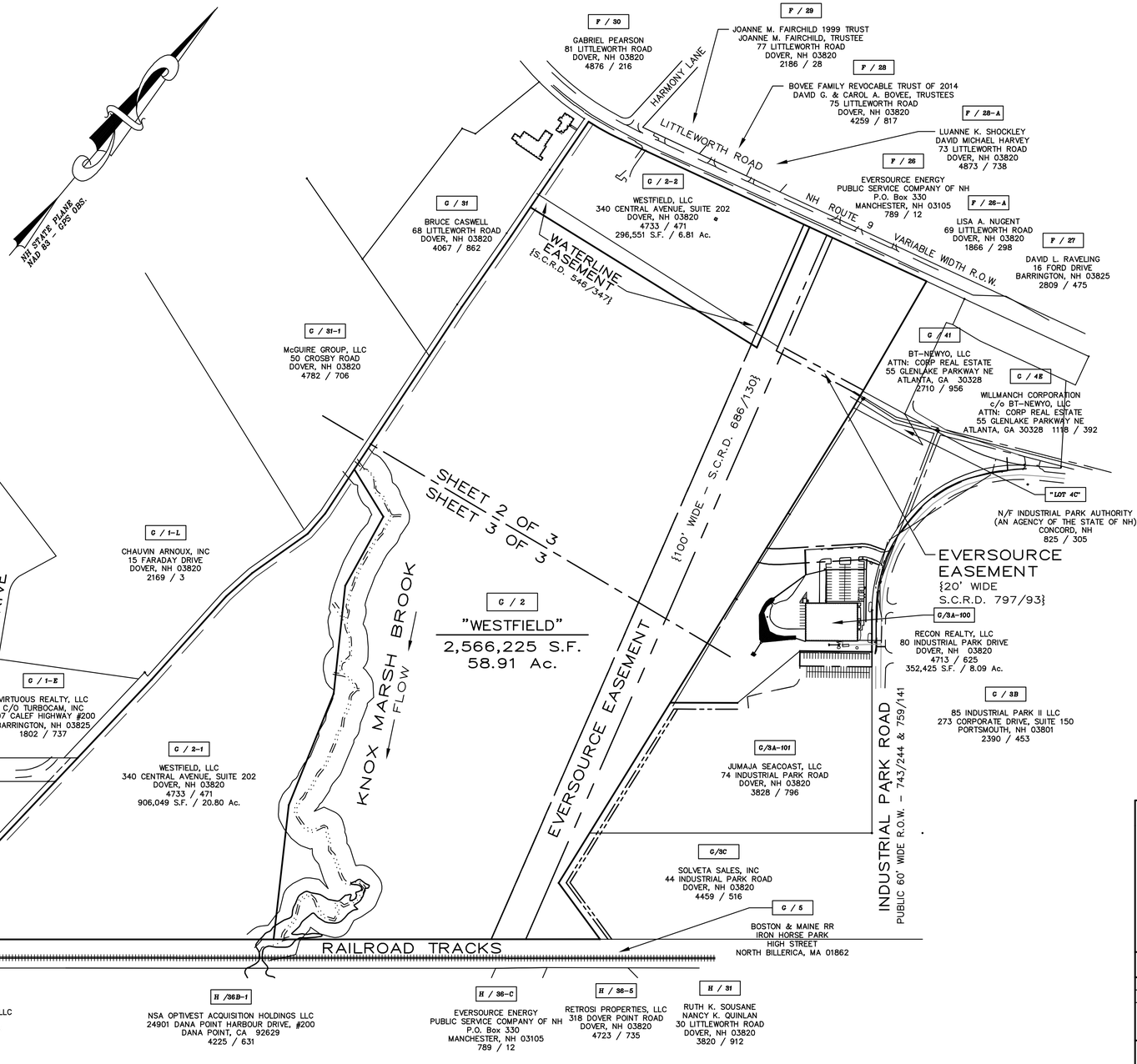
SURVEYING – PLANNING – CONSULTING

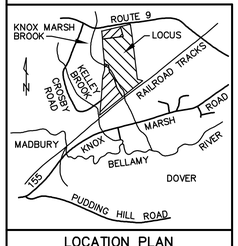
3/14/2022 08:58:13 File: \\CNEserver1\MSA Projects\2210\Dwgs\22-2210 EC.dwg Layout: 2210 SHEET 1 OF 3

REFERENCE PLANS:

1.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 LITTLEWORTH ROAD & CROSBY ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 400'; DATED: FEBRUARY 9, 2021, REVISED THROUGH 3/24/21; BY THIS OFFICE. DOVER PLANNING FILE 21-07. RECORDED S.C.R.D. PLANS 12388, 12389, 12390.

2.) SUBDIVISION PLAN OF LAND PREPARED FOR WESTFIELD, LLC TAX MAP G, LOT No. 2 NH ROUTE 9 – LITTLEWORTH ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 200' / 100'; DATED: JUNE 21, 2021, REVISED THROUGH 9/30/21; BY THIS OFFICE. DOVER PLANNING FILE 21-41. RECORDED S.C.R.D. PLANS 12514, 12515 & 12516.





LOCATION PLAN
(NO SCALE)

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	EXIST. COND.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

LEGEND

C.A.R.O.W. – CONTROLLED ACCESS RIGHT OF WAY
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
CB – CATCH BASIN
SMH – SEWER MANHOLE
G PP – GAS – PLASTIC PIPE
HDPE – HIGH DENSITY POLYETHYLINE
CMP – CORRUGATED METAL PIPE
RCP – REINFORCED CONCRETE PIPE
PVC – POLYVINYL CHLORIDE
– SOIL TEST PIT
128 – CONTOUR LINE (2 FOOT INTERVAL)

NOTES:

1.) OWNERS OF RECORD:

WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4733, PAGE 471 (200002182)

2.) [C / 2] – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PLAN INTENT: TO SHOW THE EXISTING SITE CONDITIONS. PARCEL IS SERVED BY MUNICIPAL SEWER AND WATER SERVICE.

4.) TOTAL PARCEL AREA: 2,566,225 S.F. / 58.91 Ac.

5.) ZONING DISTRICT: COMMERCIAL MANUFACTURING (CM) DISTRICT:

MINIMUM LOT SIZE	= 20,000 S.F.
LOT COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 100 FEET
FRONT SETBACK	= 35 FEET
SIDE SETBACK	= 10 FEET MIN.
REAR SETBACK	= 10 FEET MIN.
BUILDING HEIGHT	= 50 FEET MAX.

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED IN THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015, THAT AREA DIRECTLY ADJACENT TO THE RAILROAD TRACKS AT KNOX MARSH BROOK.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED JANUARY 22, 2021.

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

9.) THE PARCEL IS SUBJECT TO A TEN (10) FOOT WIDE DRAINAGE EASEMENT GRANTED TO THE CITY OF DOVER, AS DESCRIBED IN S.C.R.D. VOLUME 806, PAGE 244. (SEE REFERENCE PLAN No. 14).

10.) THE PARCEL IS SUBJECT TO RIGHTS OF DOVER TO MAINTAIN A WATER LINE AS DESCRIBED IN S.C.R.D. VOLUME 546, PAGE 347.

11.) THE PARCEL IS SUBJECT TO A 100' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MARCH 12, 1958 AND DESCRIBED IN S.C.R.D. VOLUME 686, PAGE 130.

12.) THE PARCEL IS SUBJECT TO A 20' WIDE EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE DATED MAY 27, 1965 AND DESCRIBED IN S.C.R.D. VOLUME 797, PAGE 93.

13.) HANSON ROAD (A/K/A HANSON WAY) IS AN UNIMPROVED 33' WIDE ROAD. THE CITY OF DOVER DISCONTINUED HANSON ROAD AS A PUBLIC WAY WITH THE 2008 RESOLUTION, R-2008.05.14-80. PER ACCEPTED PRACTICE, TITLE TO THE UNDERLYING LAND OF THE ROAD EXTENDS TO THE CENTERLINE FOR ABUTTING PARCELS. THE USE RIGHTS OF THE ENTIRE WIDTH OF HANSON ROAD MAY EXIST FOR ABUTTING OWNERS.

14.) SEE SHEETS 2 AND 3 OF 3 FOR PARCEL METES AND BOUNDS.

15.) THE PARCEL IS SUBJECT TO A DOVER CONSERVATION OVERRIDING DISTRICT, 170-27B.(2), AREAS WITHIN FIFTY (50) FEET OF A FRESHWATER BROOK. KNOX MARSH BROOK.

NOTES CONTINUED ON SHEET 2 OF 3.

"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."

9 SHEET 1 OF 3

EXISTING CONDITIONS PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

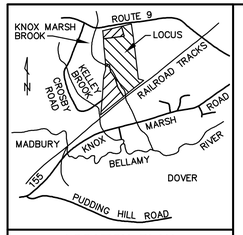
DOVER PLANNING FILE No. P 22-___

DRAWN BY: RJM	FILE: \2210\Dwgs\22-2210 EC
SCALE: 1" = 200'	DATE: FEBRUARY 2, 2022

200 100 0 100 200 400 600 800

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)

NH STATE PLANE NAD 83 GPS OBS.

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	07°28'41"	901.74	117.69	117.61	N78°39'33"E

No.	Bearing	Distance
L4	N05°49'11"W	109.82'

NOTES CONTINUED FROM SHEET 1 OF 3

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

17.) WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED ON OCTOBER 5, 2021 BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS); 43 ROCKINGHAM STREET, CONCORD, NH 03301.

F / 30
GABRIEL PEARSON
81 LITTLEWORTH ROAD
DOVER, NH 03820
4876 / 216

F / 29
JOANNE M. FAIRCHILD 1999 TRUST
JOANNE M. FAIRCHILD, TRUSTEE
77 LITTLEWORTH ROAD
DOVER, NH 03820
2186 / 28

F / 28
BOVEE FAMILY REVOCABLE TRUST OF 2014
DAVID G. & CAROL A. BOVEE, TRUSTEES
75 LITTLEWORTH ROAD
DOVER, NH 03820
4259 / 817

F / 28-A
LUANNE K. SHOCKLEY
DAVID MICHAEL HARVEY
73 LITTLEWORTH ROAD
DOVER, NH 03820
4873 / 738

F / 26
EVERSOURCE ENERGY
PUBLIC SERVICE COMPANY OF NH
P.O. Box 330
MANCHESTER, NH 03105
789 / 12

F / 26-A
LISA A. NUGENT
69 LITTLEWORTH ROAD
DOVER, NH 03820
1866 / 298

F / 27
DAVID L. RAVELING
16 FORD DRIVE
BARRINGTON, NH 03825
2809 / 475

C / 31
BRUCE CASWELL
68 LITTLEWORTH ROAD
DOVER, NH 03820
4067 / 862

C / 2-2
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471
296,551 S.F. / 6.81 Ac.

C / 41
BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328
2710 / 956

C / 41E
WILLMANCH CORPORATION
c/o BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328 1118 / 392

C / 31-1
McGUIRE GROUP, LLC
50 CROSBY ROAD
DOVER, NH 03820
4782 / 706

"LOT 4C"
N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

C/3A-100
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820
4713 / 625
352,425 S.F. / 8.09 Ac.

C / 3B
85 INDUSTRIAL PARK II LLC
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
2390 / 453

C / 2-1
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471
906,049 S.F. / 20.80 Ac.

C / 2
"WESTFIELD"
2,566,225 S.F.
58.91 Ac.

HARMONY LANE
LITTLEWORTH ROAD / NH ROUTE 9
VARIABLE WIDTH R.O.W.
N74°55'12"E 656.99'
N74°55'12"E 408.04'
327.68'
N05°49'11"W
L4
WATERLINE EASEMENT (SEE NOTE 10)
LIMITS OF FORMER HANSON ROAD RIGHT OF WAY
N05°12'28"W 274.32'
N06°32'55"W 185.10'
FORMER HANSON ROAD (SEE NOTE 13)
N06°32'55"W 429.88'
N06°32'55"W 167.45'
L3
S11°33'50"E 175.63'
N14°44'36"E 215.65'
CONSERVATION DISTRICT (50' FROM REFERENCE LINE (TYP.)
S11°02'19"E 249.86'
KNOX MARSH BROOK FLOW (SEE NOTE 15)
S81°47'48"W 842.67'
416.75'
S16°23'24"E
S09°56'54"E 461.57'
S08°12'12"E 1099.34'
-18" HDPE CULVERT INV. IN = 102.7' INV. OUT = 102.5'
EDGE OF WETLAND (TYP.) 50' WETLAND BUFFER (TYP.)
15" PVC CULVERT INV. IN = 97.1' INV. OUT = 96.8'
15" PVC CULVERT INV. IN = 100.5' INV. OUT = 100.1'
15" PVC CULVERT INV. IN = 93.6' INV. OUT = 93.6'
15" PVC TWIN CULVERTS INV. IN = 93.1' N INV. IN = 93.0' S INV. OUT = 92.9' N INV. OUT = 93.0' S
24" HDPE CULVERT INV. IN = 102.7' INV. OUT = 102.6'
APPROXIMATE WATER MAIN LOCATION
APPROXIMATE WATER MAIN LOCATION
EVERSOURCE EASEMENT (100' WIDE) (SEE NOTE 11)
EVERSOURCE EASEMENT (20' WIDE) (SEE NOTE 12)
CITY WATER MAIN EASEMENT 510 / 315 & 288 / 203
20' WIDE WATER MAIN EASEMENT 743/244 & 759/141
INDUSTRIAL PARK ROAD PUBLIC 60' WIDE R.O.W. 743/244 & 759/141
18" CMP CULVERT INV. = 107.9'
8" PVC CULVERT INV. = 112.1'
SMH RIM = 115.0'
15" RCP CULVERT INV. = 112.1'
15" RCP CULVERT INV. = 112.6'
CB RIM = 115.9'
18" RCP CULVERT INV. = 110.0'
SMH RIM = 115.1'
MATCH LINE SHEET 3 OF 3

* SEE SHEET 1 OF 3 FOR NOTES 1–15, REFERENCE PLANS AND LEGEND.

10

SHEET 2 OF 3

EXISTING CONDITIONS PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-___

DRAWN BY: RJM | FILE: \2210\Dwgs\22-2210 EC
SCALE: 1" = 100' | DATE: FEBRUARY 2, 2022

100 50 0 50 100 200 300 400

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	EXIST. COND.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

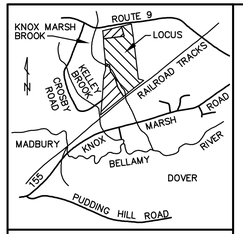
"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH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

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

McENEANEY SURVEY ASSOCIATES of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING – PLANNING – CONSULTING

3/14/2022 08:58:59 File: \\CNEserver1\MSA Projects\22\2210\Dwgs\22-2210 EC.dwg Layout: 2210 SHEET 2 OF 3



LOCATION PLAN
(NO SCALE)

No.	Bearing	Distance
L1	N03°21'27"E	103.15'
L2	N08°02'33"E	109.95'
L3	N00°50'14"E	84.52'

NH STATE PLANE NAD 83 GPS OBS.

C / 51-1
McGUIRE GROUP, LLC
50 CROSBY ROAD
DOVER, NH 03820
4782 / 706

C / 1-L
CHAUVIN ARNOUX, INC
15 FARADAY DRIVE
DOVER, NH 03820
2169 / 3

CONSERVATION DISTRICT (50' FROM REFERENCE LINE (TYP.)

FORMER HANSON ROAD (SEE NOTE 13)

N06°32'55"W 175.63'
N14°44'36"E 167.45'
N01°51'47"E 215.65'
S71°33'50"E
S11°02'19"E 249.86'
S33°53'16"E 343.87'
S18°02'44"E 379.68'
S08°12'12"E 1039.34'
671.15' S08°12'12"E
S76°21'00"E 220.84'
1032.77' S49°58'51"W
S33°34'05"E 427.72'
N03°21'27"E 339.72'
N03°21'27"E 687.64'
1162.72' S49°58'51"W

2 SHEET OF 3 MATCH LINE

15" PVC CULVERT
INV. IN = 97.1'
INV. OUT = 96.8'

15" PVC CULVERT
INV. IN = 100.5'
INV. OUT = 100.1'

15" PVC CULVERT
INV. IN = 93.6'
INV. OUT = 93.6'

15" PVC TWIN CULVERTS
INV. IN = 93.1' N
INV. IN = 93.0' S
INV. OUT = 92.9' N
INV. OUT = 93.0' S

24" HDPE CULVERT
INV. IN = 102.7'
INV. OUT = 102.6'

APPROXIMATE WATER MAIN LOCATION

APPROXIMATE WATER MAIN LOCATION

C / 2
"WESTFIELD"
2,862,775 S.F.
65.72 Ac.

C/3A-100
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820
4713 / 625
352,425 S.F. / 8.09 Ac.

SMH
RIM = 104.3'

36" CULVERT
INV. = 94.1'

SMH
RIM = 102.4'
GROUND = 97.4'
SHELF ⊕ IN = 93.7' (CONCRETE)
SHELF ⊕ OUT = 93.3' (CONCRETE)
INV. IN = 93.2' 12" SDR
INV. OUT = 92.7' 12" SDR

C/3A-101
JUMAJA SEACOAST, LLC
74 INDUSTRIAL PARK ROAD
DOVER, NH 03820
3828 / 796

12" CMP CULVERT
INV. IN = 94.8'
INV. OUT = 94.3'

20' WIDE SEWER EASEMENT SCRD 849 / 488
10' WIDE WATER EASEMENT SCRD POCKET 6 FOLDER 2 PLAN 38D

FARADAY DRIVE

SMH 2874
RIM = 95.1'
INV. IN = 86.62' 8" PVC SMH 2875
INV. OUT = 86.42' 8" PVC
NEXT = [NORTH]

SMH 2875
RIM = 96.0'
INV. IN = 88.0' 8" SMH 2876
INV. IN = 87.9' 8" (SITE)
INV. OUT = 87.6' 8"
NEXT SMH 2874

SMH 2876
RIM = 96.5'
INV. IN = 88.8' 8" PVC [NORTH]
INV. OUT = 88.6' 8" PVC
NEXT SMH 2875

C / 1-E
VIRTUOUS REALTY, LLC
C/O TURBOCAM, INC
607 CALEF HIGHWAY #200
BARRINGTON, NH 03825
1802 / 737

CROSBY ROAD
{75' WIDE R.O.W.}

SEWER 8"ø
GAS 4"ø PP
WATER

C / 2-1
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471
906,049 S.F. / 20.80 Ac.

C / 1-C3
WILLIAM C. COLBATH
211 CROSBY ROAD
DOVER, NH 03820
2171 / 590

C / 1C-1
C / 1C-2

LIMITS OF FORMER HANSON ROAD RIGHT OF WAY

CONSERVATION DISTRICT (50' FROM REFERENCE LINE (TYP.)

KNOX MARSH BROOK FLOW (SEE NOTE 15)

EDGE OF WETLAND (TYP.)
50' WETLAND BUFFER (TYP.)

C/3C
SOLVETA SALES, INC
44 INDUSTRIAL PARK ROAD
DOVER, NH 03820
4459 / 516

24" HDPE CULVERT
INV. IN = 90.8'
INV. OUT = 90.6'

EVERSOURCE EASEMENT (100' WIDE) (SEE NOTE 11)

12" HDPE CULVERT
INV. IN = 89.9'
INV. OUT = 89.3'

12" HDPE CULVERT
INV. IN = 92.0'
INV. OUT = 91.9'

RAILROAD TRACKS

10' WIDE CITY DRAINAGE EASEMENT
806 / 244 – SEE NOTE 9

H / 37A
EQUINE PROPERTIES, LLC
P.O. Box 190
EXETER, NH 03833
4783 / 326

H /36B-1
NSA OPTIVEST ACQUISITION HOLDINGS LLC
24901 DANA POINT HARBOUR DRIVE, #200
DANA POINT, CA 92629
4225 / 631

C / 5
BOSTON & MAINE RR
IRON HORSE PARK
HIGH STREET
NORTH BILLERICA, MA 01862

H / 36-C
EVERSOURCE ENERGY
PUBLIC SERVICE COMPANY OF NH
P.O. Box 330
MANCHESTER, NH 03105
789 / 12

H / 36-5
RETROSI PROPERTIES, LLC
318 DOVER POINT ROAD
DOVER, NH 03820
4723 / 735

H / 31
RUTH K. SOUSANE
NANCY K. QUINLAN
30 LITTLEWORTH ROAD
DOVER, NH 03820
3820 / 912

* SEE SHEET 1 OF 3 FOR REFERENCE PLANS AND LEGEND.

** SEE SHEET 2 OF 3 FOR NOTES CONTINUED.

SHEET 3 OF 3

EXISTING CONDITIONS PLAN OF LAND
PREPARED FOR
WESTFIELD, LLC
TAX MAP G, LOT No. 2
NH ROUTE 9 – LITTLEWORTH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-___

DRAWN BY: RJM | FILE: \2210\Dwgs\22-2210 EC
SCALE: 1" = 100' | DATE: FEBRUARY 2, 2022

100 50 0 50 100 200 300 400

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2210	EXIST. COND.	20-13	65-75
PROJECT NO	TYPE	FIELDBOOK & PAGES	

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

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

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

3/14/2022 08:59:17 File: \CNEServer1\MSA Projects\2210\Drawings\22-2210 EC.dwg Layout: 2210 SHEET 3 OF 3

GENERAL NOTES:

1. OWNERS OF RECORD:

   WESTFIELD LLC.
   340 CENTRAL AVENUE
   SUITE 202
   DOVER, NEW HAMPSHIRE 03820
   S.C.R.D. VOL. 4733, PAGE 471

2. C/2 – DENOTES TAX MAP AND PARCEL NUMBER.
3. ZONING DISTRICT IS COMMERCIAL MANUFACTURING (CM) DISTRICT
4. SEE SUBDIVISION PLAN OF LAND.

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:
   N/A
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: PENDING
   CONDITIONAL USE PERMIT: 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 ROADWAY IMPROVEMENTS ASSOCIATED WITH A 3 LOT SUBDIVISION.
3. 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 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.
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. THE CITY OF DOVER PLANNING BOARD FOUND THAT THE CRITERIA OF CHAPTER 153-21.A HAS BEEN MET.

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. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE CITY AND STATE CODES.
25. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.

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.

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
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
5'R	– 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

NATURAL GAS: – UNITIL CORPORATION
CONTACT: DAVID BEAULIEU
325 WEST ROAD
PORTSMOUTH, NH 03801
TEL: (603)-294-5144

WATER & SEWER: – CITY OF DOVER COMMUNITY SERVICES DEPARTMENT – PUBLIC WORKS & UTILITIES
CONTACT: BILL BOULANGER
271 MAST ROAD
DOVER, NH 03820
TEL: (603)-516-6450

ELECTRIC: – EVERSOURCE
CONTACT: PIERRE BOUGIE
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-4227

TELEPHONE: – FAIRPOINT COMMUNICATIONS, INC.
CONTACT: ED LANAGAN
HIGHWAY 33, BOX 307
1575 GREENLAND ROAD
GREENLAND, NH 03804
TEL (603)-528-7335

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

DATE: 3/22/22
SCALE: NA
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY: SJH
PROJECT NO: 18034
FILE: 18034-SITE

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

NOTE SHEET

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
Civil Engineering & Land Surveying
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 3-22-22
SCALE: 1"=50'
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO: 18043
FILE: PRO 3 LOTS AND ROW

SMH
RIM = 115.0'
INV PVC 8D
112.10
INV RCP 18D
110.00
INDUSTRIAL PARK DRIVE
UP 305/15
UP 305/14
UP 305/13
PROPOSED
GAS
CONN.
0+00
1+00
2+00
3+00
UD
UGE
UGU
RD 12"PVC
D 12"HDPE
D 15"HDPE
D 4"PVC
PROPOSED
UNDERGROUND
UTILITIES
VERIFY W/ UTILITY
PUE
INV CMP 18D
107.85
UP
BEGIN WORK
RD#1 2+75
ROAD#1
24" HDPE
L=60'
S=0.01
STA 24+12
INV. IN=102.6
INV OUT=102.0
W/FLARED END
PROP. (2) 30" HDPE
L=40' S=0.01
STA 4+22.57
INV. IN=104.4
INV OUT=103.6
W/FLARED END
50' WETLAND
BUFFER
AREA OF BUFFER
IMPACT: 6,203 S.F.
TAP EXISTING
12" WATER
PROPOSED 8"
GATE VALVE
PSMH-1
SEWER STA: 2+30.50
RIM: 103.0
INV. IN: 94.65
SMH
RIM = 104.3'
INV CULVERT 36"
97.05
SMH
RIM = 102.4'
GROUND = 97.4'
SHELF @ IN = 93.7' (CONCRETE)
SHELF @ OUT = 93.3'
(CONCRETE)
INV. IN = 93.2' 12" SDR
INV. OUT = 92.7' 12" SDR
CORE AND BOOT
EXISTING SMH
AREA OF BUFFER
IMPACT: 12,192 S.F.
PSMH-4
ROAD STA: 23+84.89
SEWER STA: 9+45.89
RIM: 106.82
INV. IN: 98.23
INV HDPE 24
102.74
INV HDPE 24 TS2
102.61
AREA WETLAND
IMPACT: 563 S.F.
AREA WETLAND
IMPACT: 160 S.F.
AREA WETLAND
IMPACT: 508 S.F.
PT4+80.69
R=40'
PROPOSED
THRUST
BLOCK (TYP)
ROAD#3
ROAD#2
AREA OF BUFFER
IMPACT: 6,631 S.F.
PSMH-3
ROAD STA: 22+00
SEWER STA: 7+61
RIM: 105.15
INV. IN: 97.31
50' ROW
30' WIDE ROAD
EQUATION STATION
RD1=5+08.39
RD2=0+00
RD3=20+00
PSMH-2
ROAD STA: 11+00
SEWER STA: 4+61
RIM: 106.15
INV. IN: 95.81
AREA OF BUFFER
IMPACT: 3,818 S.F.
30' STUB TO
PL LINE
INV 199.53
MARK W/ 4"
PVC
WITNESS
34' STUB TO
PL LINE
INV 100.10
MARK W/ 4"
PVC
WITNESS
PSMH-5
ROAD STA: 25+00
SEWER STA: 10+60.91
RIM: 108.15
INV. IN: 98.80
PT26+20.51
INV 15"PVC
100.49
PSMH-6
ROAD STA: 26+20.51
SEWER STA: 11+75.44
RIM: 107.45
INV. IN: 99.38
UP 3425/54
UP 3425/53
UP 3425/52
PT13+50.20
PSMH-8
ROAD STA 13+50.20 =
SEWER STA: 22+08.44
RIM: 106.76
INV.: 95.19
WETLAND
(TYP.)
50' WETLAND
BUFFER
AREA OF BUFFER
IMPACT: 1,229 S.F.
AREA OF BUFFER
IMPACT: 173 S.F.
PROPOSED
WATER
CONNECTION
PSMH-7
ROAD STA: 27+18.19
SEWER STA: 12+73.13
RIM: 106.76
INV. IN: 99.87
INV 15"PVC
100.10
100' PSNH EASMENT
PROPOSED
HYDRANT
W/ 8" GATE
VALVE
TRANSFORMER
PAD (TYP)
CAP 8" SEWER
MARK W/8" PVC
PROP.
GAS
CAP 8" CLDI
40' OFF
PIPE
PROPOSED
HYDRANT
W/ 8" GATE
VALVE
CAP 8" CLDI
40' OFF PL
CAP 8" SEWER
MARK W/8" PVC
INV. 96.06

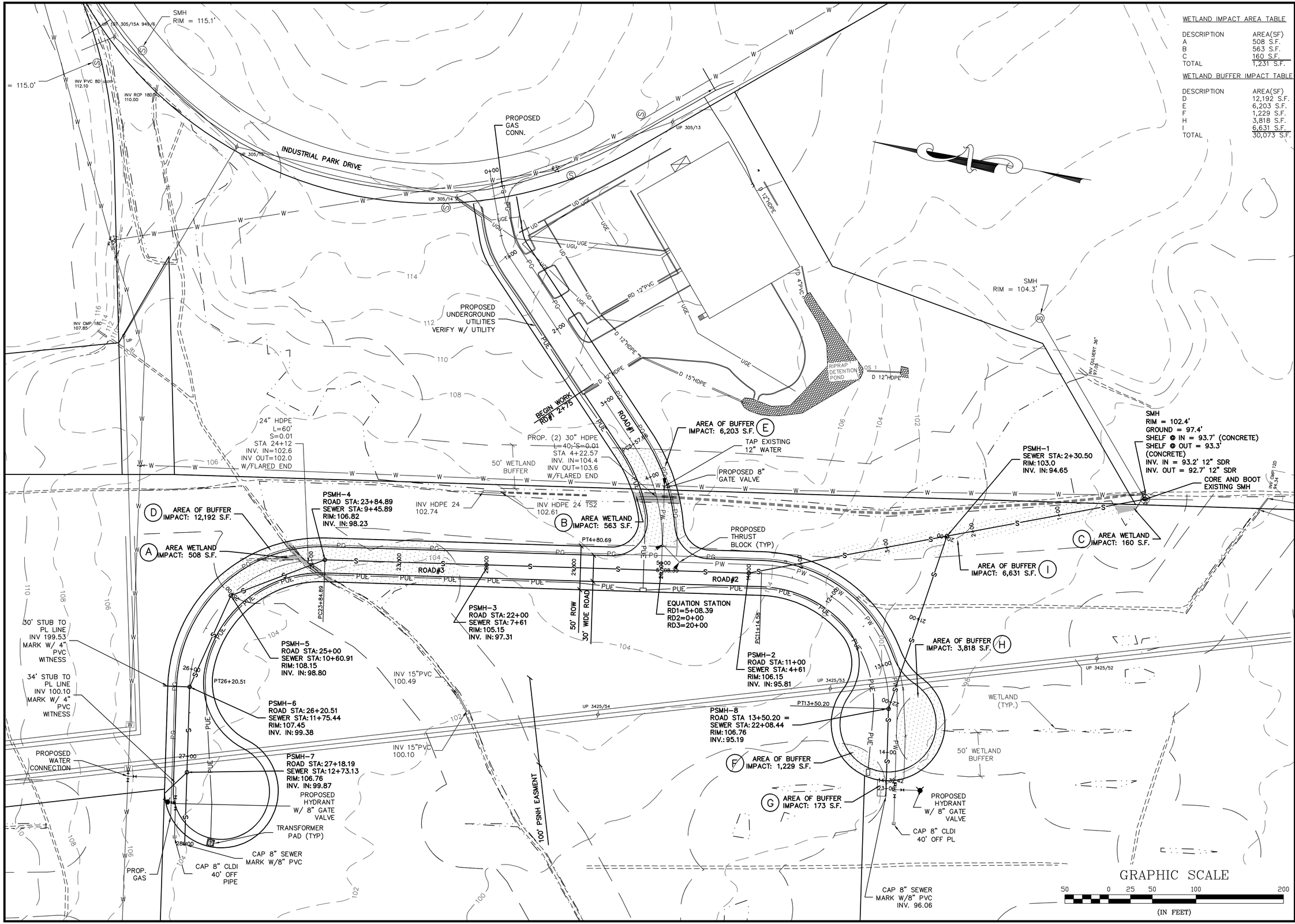
GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

ROAD & UTILITY PLAN

WESTFIELD, LLC,
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

13



WETLAND IMPACT AREA TABLE

DESCRIPTION	AREA(SF)
A	508 S.F.
B	563 S.F.
C	160 S.F.
TOTAL	1,231 S.F.

WETLAND BUFFER IMPACT TABLE

DESCRIPTION	AREA(SF)
D	12,192 S.F.
E	6,203 S.F.
F	1,229 S.F.
H	3,818 S.F.
I	6,631 S.F.
TOTAL	30,073 S.F.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

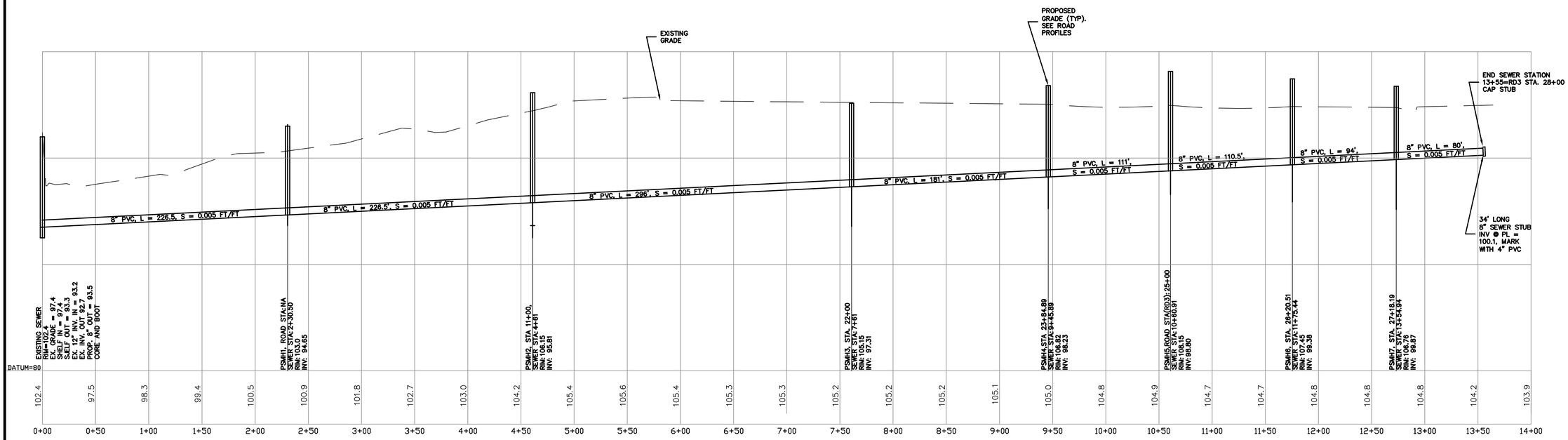
NO.	REVISION	APP'D	DATE

DATE: 3-22-22
SCALE: 1"=50'
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:JH
PROJECT NO: 18043
FILE: 18043-SITE

3 LOT SUBDIVISION – CONDITIONAL USE PLAN

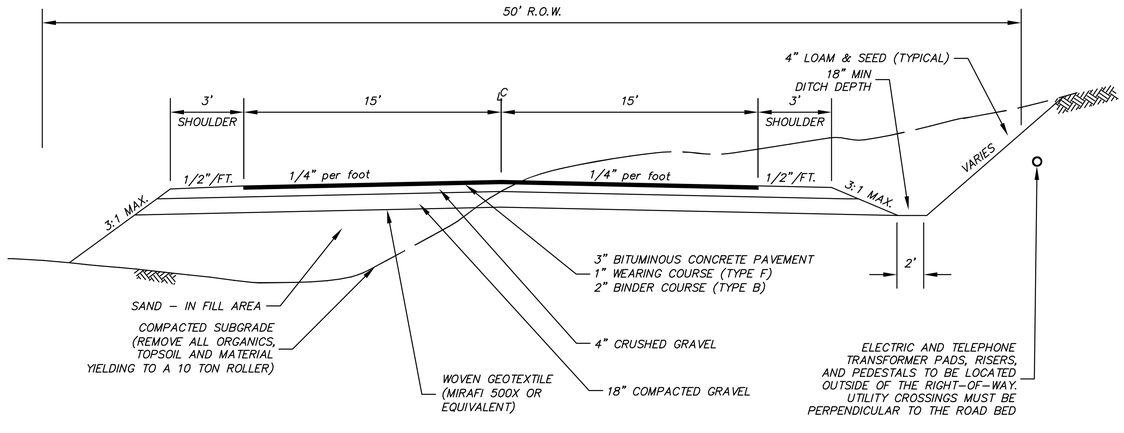
WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE



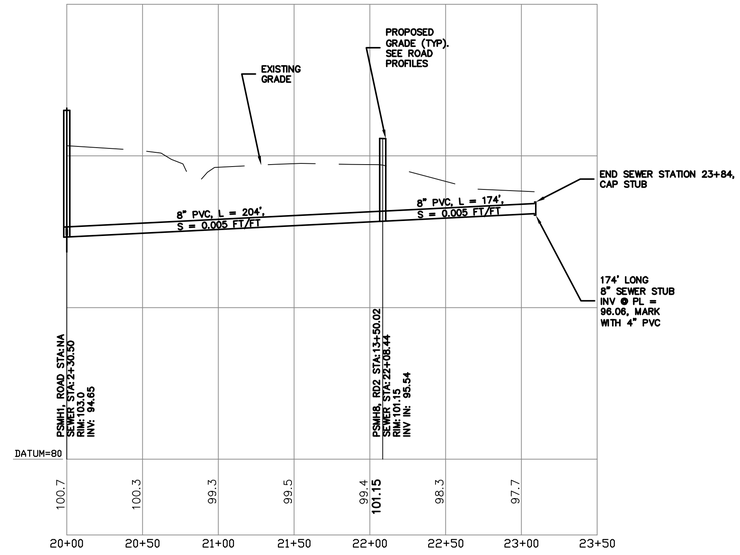
SEWER PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



TYPICAL ROADWAY SECTION

NOT TO SCALE



SEWER PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

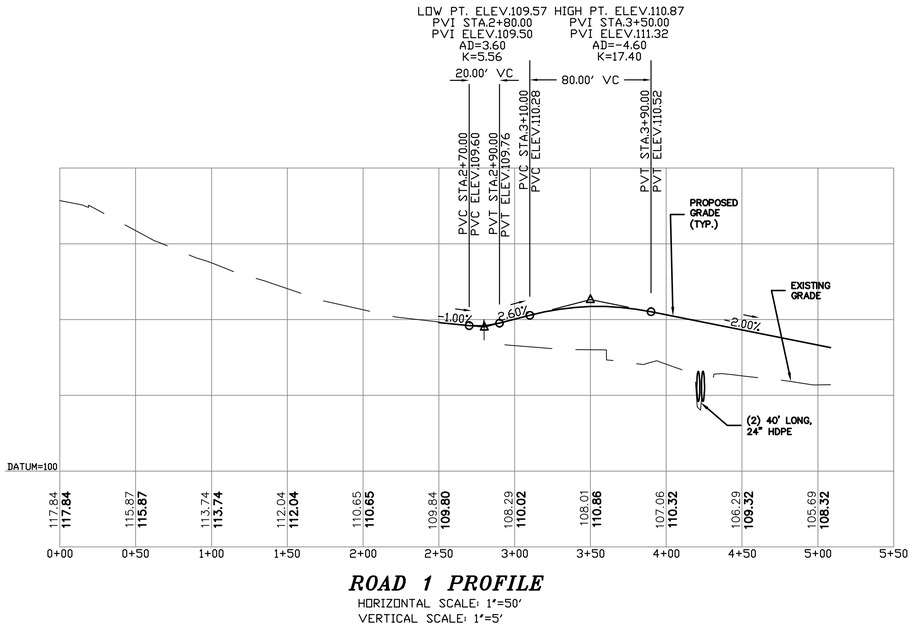
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DATE: 3/22/22
SCALE: PROFILE
DRAWN BY: DJL
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO:18034
FILE: 18034-SITE

SEWER PROFILES

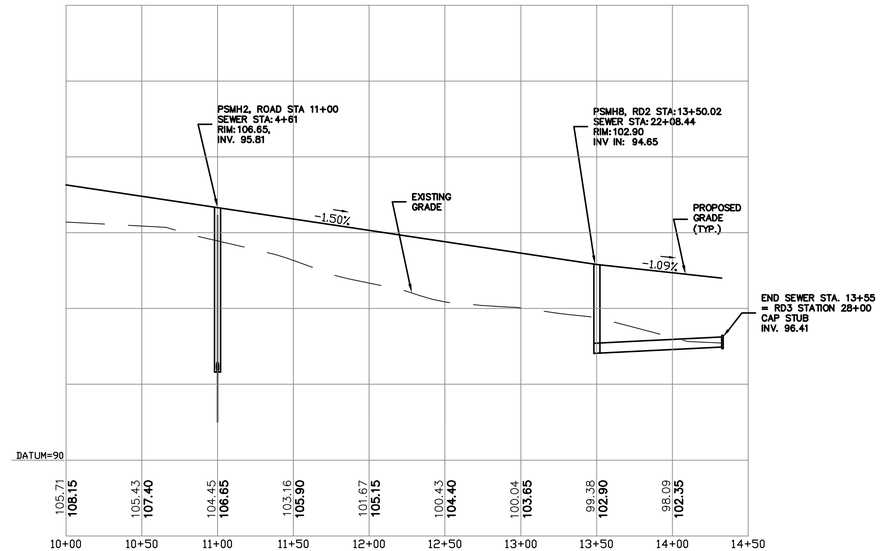
WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVSION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE



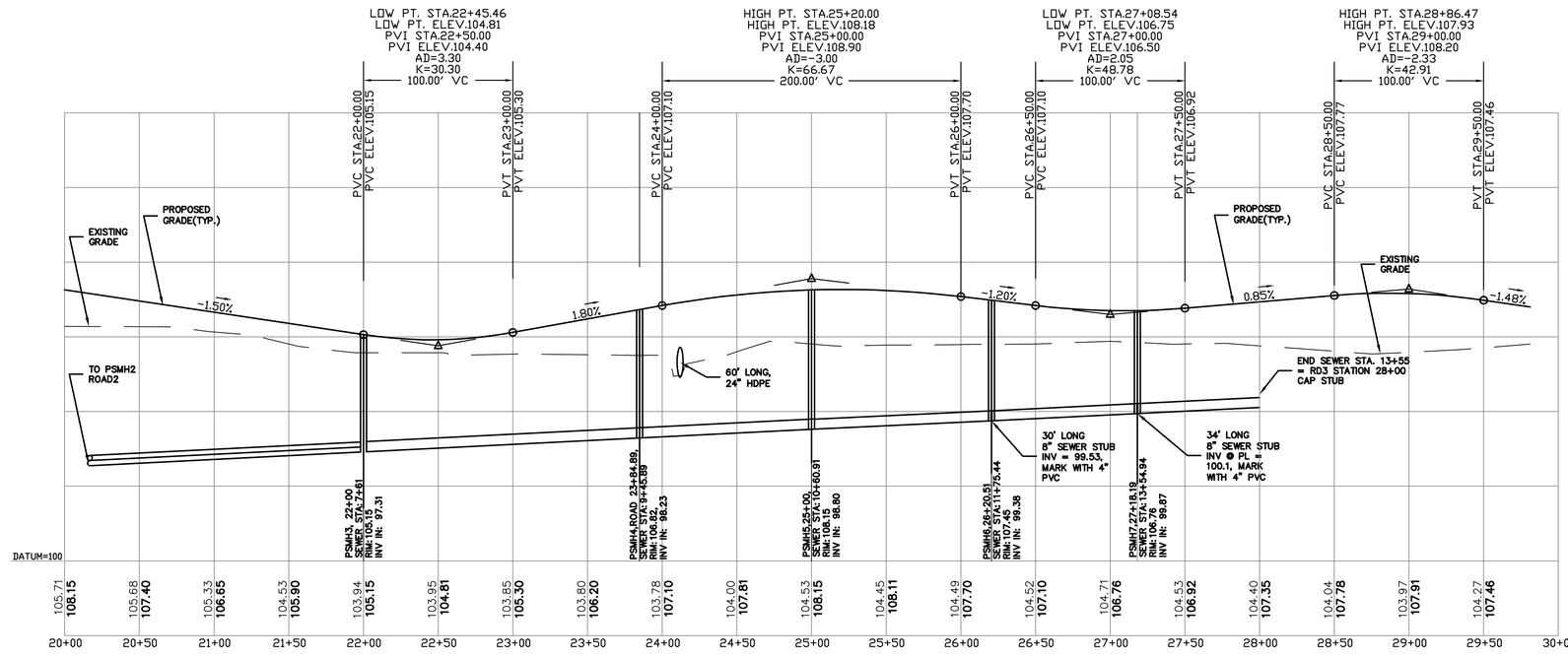
ROAD 1 PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



ROAD 2 PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



ROAD 3 PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

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

DATE: 3/22/22
SCALE: PROFILE
DRAWN BY: DJL
DESIGN BY: DJL
APPROVED BY:JH
PROJECT NO:18034
FILE: 18034-SITE

ROAD PROFILES

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF A 1,465 L.F. ROADWAY.

PROJECT NAME AND LOCATION

WESTFIELD LLC. LATITUDE 43.18616
DOVER, NH LONGITUDE −70.90939

DISTURBED AREA

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 ROAD TO SUBGRADE.
6. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECESSARY 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 UTILITIES.
10. PLACE GRAVELS AND FINE GRADE.
11. STABILIZE ROADWAYS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
14. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
15. 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 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 MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING

1. SEEDBED PREPARATION
   a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
   b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
      i) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
      ii) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
   a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
   c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
   d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
   a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING

1. BEDDING – STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERRING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
   a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
   b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITORGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
   c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
      LOW PHOSPHATE (N–P205–K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
   RATE:

TYPE	LBS. PER ACRE	LBS. PER 1,000 S.F.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (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.

MAINTENANCE 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 TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER 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 FOLLOWING REQUIREMENTS 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

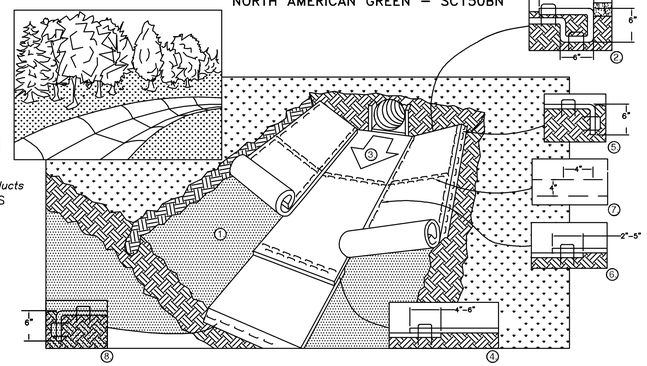
1. ALL PROPOSED POST–DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWEHERE. 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.

ENV–WQ 1510: BEST MANAGEMENT PRACTICES FOR BLASTING

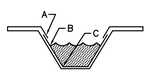
1) ALL ACTIVITIES ASSOCIATED WITH BLASTING NEED TO BE OPTIMIZED TO PREVENT THE RELEASE OF CHEMICALS ASSOCIATED WITH BLASTING ACTIVITIES TO THE ENVIRONMENT.
2) IF MORE THAN 5,000 CY OF ROCK REMOVAL IS REQUIRED DRINKING WATER WELLS MUST BE IDENTIFIED AND LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING 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 VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
      (B) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON–SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE,

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.



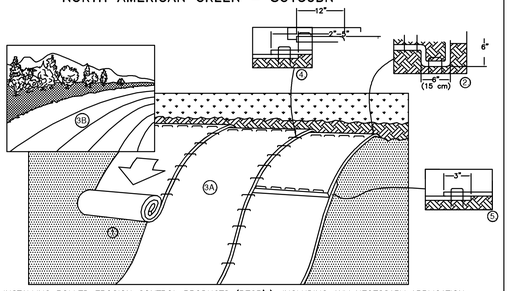
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

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.

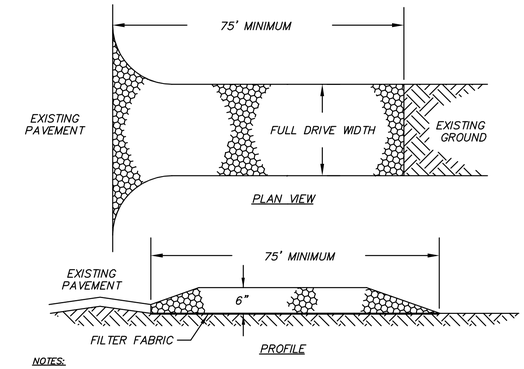
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

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.

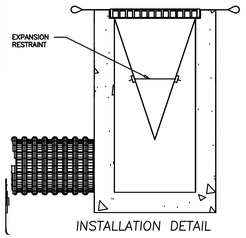


NOTES:
1. *SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.*
2. *TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.*

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)

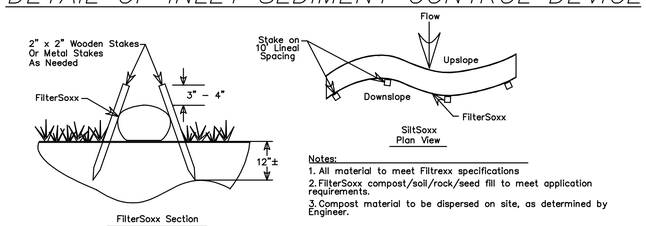
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM 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	125 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

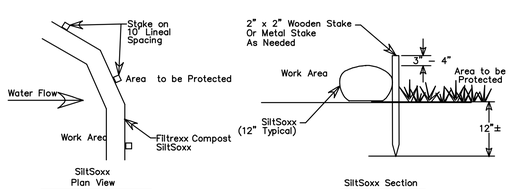
OIL-ABSORBANT SILTSACK®
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW 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

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

NO.	REVISION	APP'D	DATE

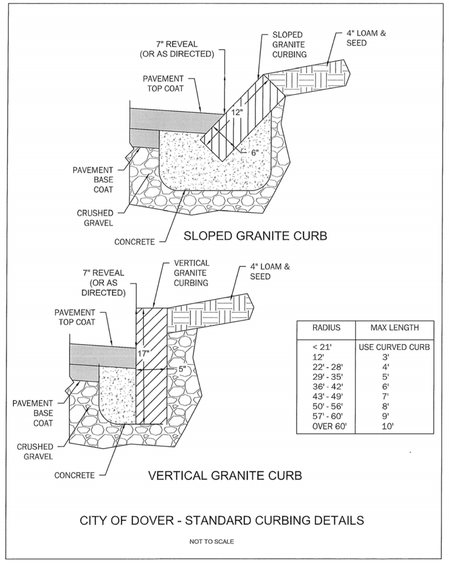
DATE: 3/22/22
SCALE: DETAIL
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY: SJH
PROJECT NO: 18043
FILE: 18043-SITE

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

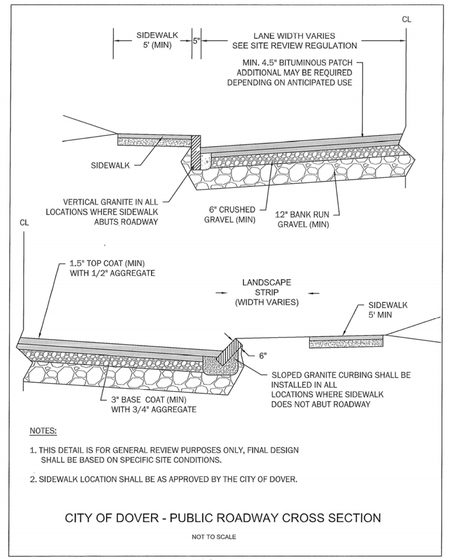
EROSION CONTROL DETAIL SHEET

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

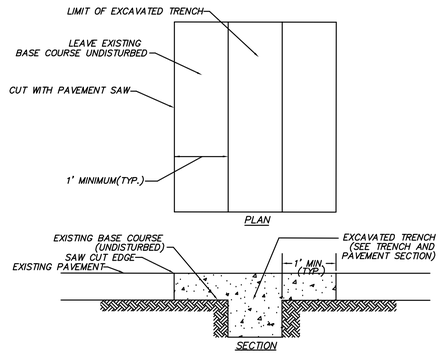
WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

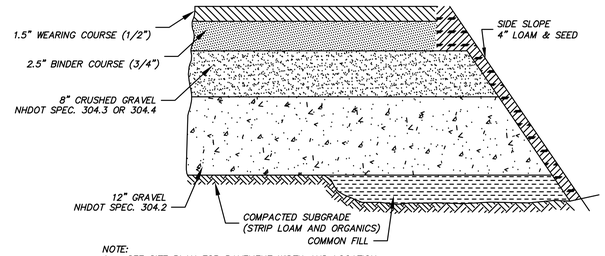


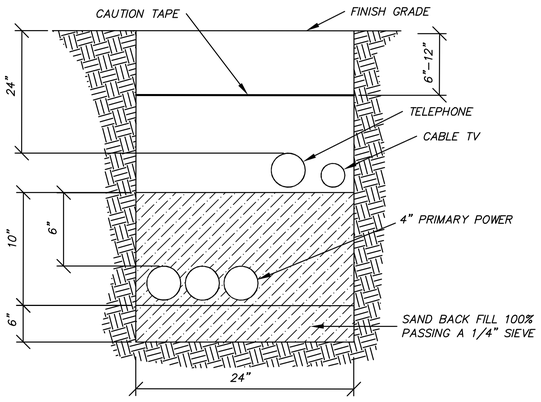
Appendix B Page 6



Appendix B Page 4

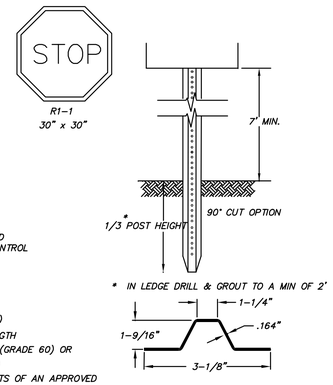






1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

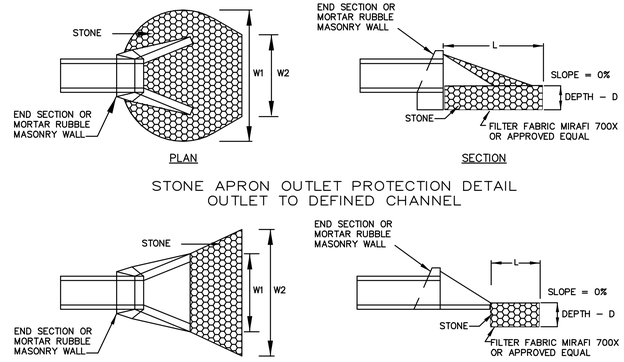
UTILITY TRENCH
NOT TO SCALE



NOTE:
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



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	2	5	5	1	6	UNDEFINED
FES2	4	18	14	1	6	UNDEFINED
FES3	12	5	12	1	6	DEFINED

RIP RAP OUTLET PROTECTION
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

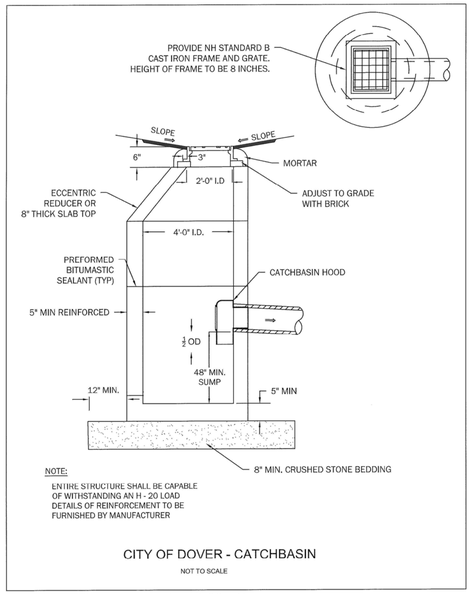
NO.	REVISION	APP'D	DATE

DATE: 3/22/22
SCALE: DETAIL
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO:18034
FILE: 18034-SITE

DETAIL SHEET 1

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVSION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

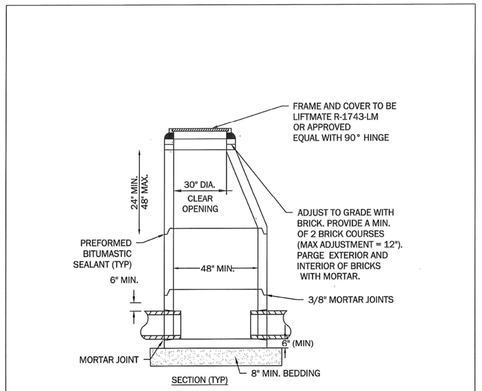


NOTE:

ENTIRE STRUCTURE SHALL BE CAPABLE OF WITHSTANDING AN H - 20 LOAD
DETAILS OF REINFORCEMENT TO BE FURNISHED BY MANUFACTURER

CITY OF DOVER - CATCHBASIN

NOT TO SCALE

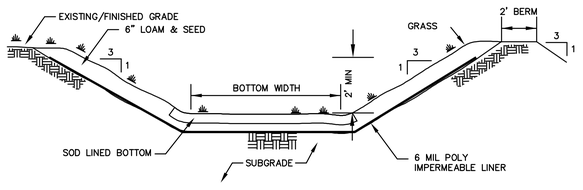


CITY OF DOVER - DRAIN MANHOLE

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.



GRASSED TREATMENT SWALE

NOTES:

1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.

2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.

3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.

4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.

5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.

6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.

7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.

GRASSED TREATMENT SWALE

NOT TO SCALE

STRUCTURE	WIDTH (ft)	LENGTH (ft)	SLOPE (ft/ft)
TS 1	.	.	.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

DATE: 3/22/22
SCALE: DETAIL
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY: SJH
PROJECT NO: 18034
FILE: 18034-SITE

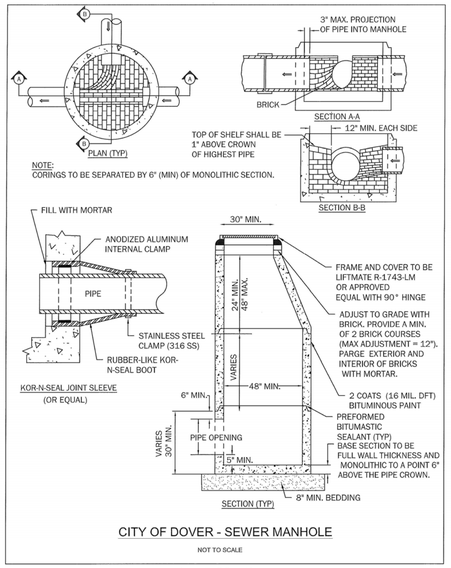
CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DETAIL SHEET 2

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

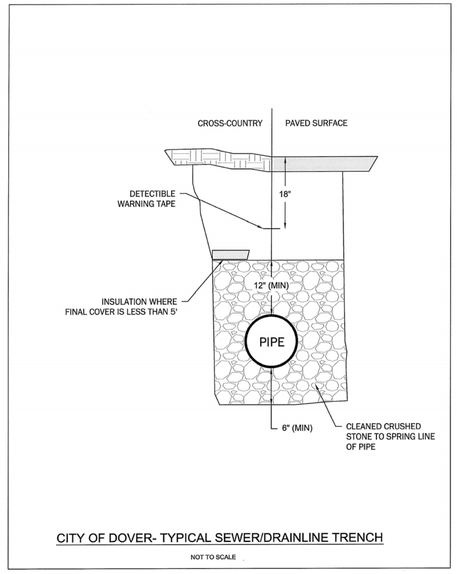
20



CITY OF DOVER - SEWER MANHOLE

NOT TO SCALE

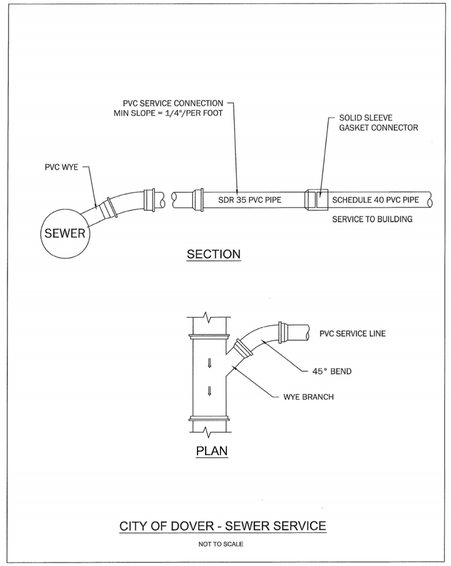
Appendix B Page 12



CITY OF DOVER- TYPICAL SEWER/DRAINLINE TRENCH

NOT TO SCALE

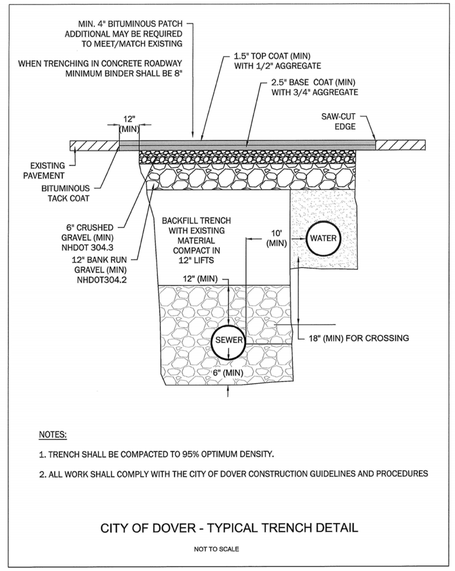
Appendix B Page 13



CITY OF DOVER - SEWER SERVICE

NOT TO SCALE

Appendix B Page 15



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES

CITY OF DOVER - TYPICAL TRENCH DETAIL

NOT TO SCALE

Appendix B Page 3

NOTE:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP. CONTRACTOR MAY FORGO WRAPPING PIPE IF THE DUCTILE IRON PIPE IS ZINC-COATED, TEES AND OTHER CONNECTIONS WILL STILL NEED TO BE WRAPPED.

CITY OF DOVER - WATERLINE TRENCH

NOT TO SCALE

NOTE:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP. CONTRACTOR MAY FORGO WRAPPING PIPE IF THE DUCTILE IRON PIPE IS ZINC-COATED, TEES AND OTHER CONNECTIONS WILL STILL NEED TO BE WRAPPED.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE SDR 9 CTS (BLUE) PLASTIC POLYETHYLENE RATED FOR 250 psi.

CITY OF DOVER - WATER SERVICE CONNECTION

NOT TO SCALE

THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Tees, Caps, Plugs, & Tapping Sleeves	1.05	2.32	4.15	6.37	9.15	16.23
90 Degree Bends	1.48	3.29	5.86	9.01	12.93	22.96
45 Degree Bends	0.80	1.78	3.17	4.88	7.00	12.42
22-1/2 Degree Bends	0.41	0.91	1.62	2.49	3.57	6.33
11-1/4 Degree Bends	0.21	0.46	0.81	1.25	1.79	3.18
	System Pressure: 100 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 100 PSI. IF THE SYSTEM PRESSURE IS ABOVE 100 PSI, INCREASE THE NOTED AREAS PROPORTIONAL TO THE ACTUAL SYSTEM PRESSURE. FOR EXAMPLE, IF THE ACTUAL SYSTEM PRESSURE IS 160 PSI, MULTIPLY THE ABOVE VALUES BY 160%.

CITY OF DOVER - PRECAST CONCRETE THRUST BLOCK & ANCHOR

NOT TO SCALE

Appendix B Page 11

NOTES:

1. FIRE HYDRANT TO BE EDDY 2641.
2. HYDRANT TO BE PAINTED RED.
3. HYDRANT SHALL OPEN LEFT.

CITY OF DOVER - HYDRANT

NOT TO SCALE

Appendix B Page 10

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE

DATE: 3/22/22
SCALE: DETAIL
DRAWN BY: MJM
DESIGN BY: DJL
APPROVED BY:SJH
PROJECT NO:18034
FILE: 18034-SITE

DETAIL SHEET 3

WESTFIELD, LLC.
340 CENTRAL AVENUE
SUITE 202
DOVER, NH, 03820

WESTFIELD, LLC
3 LOT SUBDIVISION
64 LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

21