CITY OF DOVER

DOVER CONSERVATION COMMISSION – AGENDA

REVISED

Meeting Type: Regular Meeting
Meeting Location: City Council Conference Room - 288 Central Avenue Dover NH
Meeting Date: Monday, July 14th, 2025
Meeting Time: **5:30 pm**

1. **CALL TO ORDER AND ROLL CALL**

2. **CITIZEN'S FORUM**

3. **APPROVAL OF THE PRIOR SPECIAL MEETING MINUTES** – June 16th, 2025

4. **OLD BUSINESS**

5. **NEW BUSINESS**
   - **A.** City of Dover Conditional Use Permit for Dover Development, LLC, Assessor's Map 40, Lot 25, zoned C, located at 52 Old Rochester Road. Proposal seeks to allow 44.15% impervious surface coverage within the Secondary Groundwater Protection District where 20% is allowed. Applicant is proposing the CUP as part of a mixed-use TDR Site Plan with 44 HUD-restricted housing units.
   - **B.** City of Dover Conditional Use Permit for McDonald's USA LLC (c/o Bohler), Assessor's Map H, Lot 4-3, located at 30 Grapevine Drive. Proposal seeks to allow construction of a new McDonald's restaurant and parking with impacts within the Wetland Protection District. The proposed activity results in approx. 7,630 s.f. of re-contouring and grading of land and the construction of parking lots within the 50' wetland buffer. There are no direct wetland impacts proposed.
   - **C.** City of Dover Conditional Use Permit for True North Development, LLC Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Rd. Proposal seeks to allow Conservation District impacts for the construction of two single-family homes. Proposal includes temporary impacts related to underground utility installation and permanent impacts due to grading and drainage improvements totaling approx. 6,000 s.f. *[NHDES approvals were received and provided as part of this application per previous conditions set by the Conservation Commission]*
   - **D.** City of Dover Conditional Use Permit for Eric Latour, Assessor's Map B, Lot 18-43, zoned R-40, located at 28 Cornerstone Drive. Proposal seeks to allow wetland buffer impacts for the construction of a garage and small mudroom that will result in approx. 2,435 s.f. of buffer impacts from two overlapping wetland buffers. There are no direct wetland impacts proposed.
   - **E.** City of Dover Conditional Use Permit for Tina M. Sawtelle Assessor's Map B, Lot 1-C, zoned R-40, located at 476 Sixth Street. Proposal seeks to allow wetland buffer impacts and conservation district impacts for the expansion of an existing single-family home with approx. 216 s.f. of permanent wetland buffer impacts and approx. 150 s.f. of temporary buffer disturbance. There are no direct wetland impacts proposed.
   - **F.** City of Dover Conditional Use Permit for Summit Land Development, LLC, Assessor's Map G, Lot 2, zoned CM, located at Littleworth Road. Proposal seeks to allow approx. 16, 678 s.f. of wetland buffer impacts for the construction of an accessway and grading for the installation of a bioretention pond with internal reservoir. Applicant is proposing the CUP as part of the construction of a light industrial building. There are no direct wetland impacts proposed.

6. **REPORT FROM THE CHAIR**
   - **A.** Review of Correspondence Received from NH Department of Environmental Services

7. **OTHER BUSINESS**
   - **A.** Update from Forest Management Subcommittee
     - i. Ash Tree Info Walk

8. **ADJOURNMENT**

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

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

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

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

2. **CITIZENS' FORUM**

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

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

4. **OLD BUSINESS:**
   None

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

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

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

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

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

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

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

DRAFT

Robbi Woodburn, landscape architect with Woodburn and Company presented the item. She described the CUP requests for adding a boardwalk and steps within the 100' setback and to do work within the steep slope of the conservation district.
She addressed the details of the proposal, vegetation plans, and wall construction options and processes.

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

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

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

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

C. Request for funds up to $16,000 for ongoing conservation parcel.
M. Edgecomb clarified the parcel is about 50 acres, is privately owned, and the City is looking to negotiate a conservation easement. The funds are for an open space assessment and survey of the property.

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

6. REPORT FROM THE CHAIR

a. Review of Correspondence Received from NH Department of Environmental Services
None

7. OTHER BUSINESS

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

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

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

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

DRAFT

The meeting was adjourned at 6:34PM

DRAFT

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

LETTER OF TRANSMITTAL

To: City of Dover
Attn: Mrs. Donna Benton, AICP, Director of Planning and Community Dev.
288 Central Ave
Dover, NH 03820

From: Christopher R. Berry, LLS, Kevin R. Poulin, PE & Kenneth A. Berry, PE, LLS

Date: May 30, 2025

Subject: Proposed Residential TDR Site Plan
Environmental CUP Conservation Commission Submission
Dover Development, LLC
52 Old Rochester Road
Tax Map 40, Lot 25
Blazer Drive (SITE-2024-0009) (COND-2024-0019)

Mrs. Benton,

We are forwarding to you the following material in support of the Environmental CUP application package for 52 Old Rochester Road:

- 2 Copies of the Secondary Ground Water Recharge Overlay CUP Request
- 2 Copies of the Existing Conditions Plan, Site Plan, & Overview Grading Plan
- Electronic submission of all to online portal

Respectfully submitted,
BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

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: Dover Development LLC Telephone # 603-986-2373

Address of Applicant: 242 Central Ave Dover, NH 03820

E-Mail Address: robert@centralfallsrealty.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 40 Lot(s) # 25

Address of Property: 52 Old Rochester Rd Dover, NH

Zoning District(s) C Overlay District(s) Secondary Groundwater Recharge

Existing Use of Property: Office w/ 3 BR apartment

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:

Please find attached narrative. Proposing 44.15% impervious where 20% is the max within the Secondary Ground Water Recharge Overlay. 23.88% in the existing condition.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Sewer Discharge, not submitted,/EPA NOI & SWPPP, Not yet submitted

Name of Professional That Prepared Plans: Kenneth A. Berry, PE, LLS

Address 335 Second Crown Point Road Telephone #: 603-332-2863

Professional License #: PE 14243, LLS 805 E-mail address: K.berry@berrysurveying.com
Crberry@metrocast.net (PM)

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: 3-19-25

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

Signature of Agent: _____ Date: 3-19-25

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 3-19-25

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

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

SUBTOTAL PLAN REVIEW FEE = $_____

AND

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

BERRY SURVEYING & ENGINEERING
335 Second Crown Point Road
Barrington, NH 03825
Phone: (603) 332-2863
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July 1, 2024/Rev: May 29, 2025

City of Dover Planning Board
Attention: Donna Benton, Director of Planning and Community Development
288 Central Ave
Dover, NH 03820

Re: Environmental Conditional Use Permit Request
Secondary Groundwater Protection Zone (SGPZ)
Mixed-Use TDR Site Plan (Blazer Drive)
Dover Development, LLC
52 Old Rochester Road
Tax Map 40, Lot 25

Chairperson & Members of the Dover Planning Board:

Mrs. Benton and the Dover Planning Board,

Berry Surveying & Engineering (BS&E,) on behalf of Dover Development Group LLC respectfully requests the City of Dover Planning Board to accept the following Conditional Use Permit:

- More than 20% impervious within the secondary groundwater protection zone.

1. Identification of Conditional Use Permits

The project is proposed to be a Mixed-Use TDR Site Plan which provides for 44 HUD restricted housing units in a site plan format and is in the Commercial (C) Zone. The project is proposing the use of porous parking spaces throughout the project to treat and infiltrate stormwater into the highly transmissive soils on site. The zone allows for a 50% building coverage maximum and no maximum on impervious surface, however the Secondary Groundwater Recharge zone requires a 20% maximum impervious surface coverage. The project is proposing 44.15% impervious surface coverage which is a function of the sites use and the total lot size. The porous pavement is not included in the percentage provided.

The site is designed to capture all the stormwater generated onsite as well as stormwater generated off the site and infiltrate it into the soil either through the porous pavement or small depressed contoured areas in the open areas of the project. Snow storage sumps are proposed with 18" of bio-media for additional filtration treatment of melting snow runoff. Please find corresponding Drainage Analysis & Erosion and

Sediment Control Plan, prepared for Dover Development LLC, as well as an Infiltration Feasibility Analysis also prepared for Dover Development LLC. Given that the site is 23.88% impervious in the existing condition and provides no stormwater considerations, the re-developed site provides an improvement when considering the full treatment and infiltration provided.

It is of note the subject parcel had previous received Site Plan Approval under P17-74 (Perro Place). While BS&E is unable to find evidence of a Conditional Use Permit being previously approved with this design from the publicly available parcel data, BS&E has determined the previous approval contained approximately +/- 40,500 Sq. Ft. of impervious surface (+/- 54.0% impervious cover). The new project proposal under a SITE-2024-0009 proposes 33,114 Sq. Ft. of impervious surface, or 44.15% impervious cover.

Regulations in the zoning ordinance do not allow for more than 20% impervious cover in the secondary groundwater recharge zone. However, Section 170-28.E states that a conditional use permit may be granted by the planning board, given the following standards, as shown below, are met.

Below we show the project's compliance with the standards required to grant a Conditional Use Permit, and we provide justification for its approval.

2. Compliance with the following standards

a) The proposed development plan incorporates a stormwater drainage plan, approved by the Planning Board and prepared by a professional engineer certified to practice in the State of New Hampshire

- **A full drainage analysis was conducted as part of the application. The drainage analysis was designed to be compliant with the City of Dover Chapter 153 regulations. A Site-Specific Soils Survey has been completed along with the application.**

b) The plan shall provide for the retention and percolation within the secondary groundwater protection zone of all development-generated stormwater runoff from a ten-year storm. Furthermore, the stormwater drainage plan shall provide for the removal of oil and gasoline from parking LOT runoff by use of treatment swales, oil/gas separators or other device, prior to retention and percolation of the runoff.

- **While the project does not directly provide mechanical separation or swale type system for stormwater pre-**

treatment, porous pavement is well documented as being highly effective from hydrocarbon biodegradation (UNH Stormwater Center & University of Washington). In the event of porous pavement failure, several deep sump catch basins are provided in low points of the porous pavement. In the event of failure, the deep sumps and hoods proposed would provide separation of hydrocarbons before infiltration. The porous pavement systems are proposed with 18" of sand filter (as opposed to 12" typically required) as a consideration of the SGPZ. These porous pavement systems are designed to infiltrate/treat the 100-year storm event. In the snow storage areas that contain infiltration sumps, 18" of biomedia is proposed for additional filtration treatment of melting snow before infiltration.

3.) Section F Dover Performance Standards

a) Post-development Infiltrations Volumes shall be no greater than predevelopment volumes as determined by use of the Development Review Model as described in Subsection G below.

In the sandy, somewhat excessively drained soils on site, not allowing for an increase in the post development infiltration volume would lead to non-compliance with other sections of the Dover Chapter 153-14 requirements. This section requires all development area to be mitigated by stormwater management systems that result in no increase in the peak rate or volume of stormwater runoff. The proposed development does not rely strictly on infiltration for stormwater treatment, as runoff is filtered through 18" of sand filter in the porous pavement systems prior to infiltrating into the underlying soils. It is the opinion of BS&E that the treatment level provided in the stormwater BMP for the project would meet the intent of this performance standard.

b) Stormwater shall be treated by the use of a stormwater treatment system designed to remove no less than 80% of the annual load of total suspended solids. The removal rate shall be accomplished using best management practices installed in advance of the final infiltration system.

Utilizing the NH Stormwater Manual Pollutant removals information, the following performance can be expected from the permeable pavement that infiltrates the WQV (>75' from surface water):

- *Total Suspended Solids (TSS) reduction of 90%*
- *Total Nitrogen (TN) reduction of 65%*
- *Total Phosphorous (TP) reduction of 65%*

These removal efficiencies meet the performance standard.

c) No stormwater infiltration system shall be located within the 200-day travel time of an existing or proposed municipal well as depicted on the map referenced in Subsection B above. In absence of a defined 200-day-travel-time radius, the applicant shall submit a technical evaluation from a professional engineer, hydrologist or geologist that documents that the proposed discharge is consistent with the stated purposed and intent of this requirement.

As shown on the 1987 Dover Groundwater Protection Zone Map, the secondary zone was considered as a 180-day radius. It is important to consider the differences in stormwater treatment technology today versus when this zone was created. Stormwater treatment was not required in the 1980's for developed impervious areas. Since this time, with the implementation of stormwater treatment devices and the requirements of Dover Chapter 153-14, untreated stormwater discharges are no longer allowed in a development of this scale. The proposal does not strictly rely on infiltration as the method of treatment. As previously mentioned, 18" of sand filter is proposed for treatment (as opposed to 12" typically in porous pavement), before infiltration to the underlying soils. It is the opinion of BS&E that the stormwater treatment device provided is consistent the purpose and intent of this requirement.

BERRY SURVEYING & ENGINEERING

Kevin R. Poulin, PE
Project Engineer

Christopher R. Berry, LLS
Principal, President

BERRY SURVEYING & ENGINEERING
335 Second Crown Pt. Rd., Barrington, NH 03825
(603) 332-2863 / (603) 335-4623 FAX
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PERMIT SNAPSHOT REPORT COND-2024-0019
FOR CITY OF DOVER, N.H.

Permit Type Conditional Use
Work Class: Environmental
Status: In Review
Valuation: $0.00
Project:
District: None
Square Feet: 0.00
Assigned To: Edgecomb, Makayla
App Date: 07/15/2024
Exp Date: NOT AVAILABLE
Completed: NOT COMPLETED
Approval Expire Date:

Description: Proposing to have impervious coverage of 44.15% where 20% max is allowed in the secondary groundwater recharge overlay."

Parcel:	**Address:**	**Zone:**
40025-000000 Main	52 Old Rochester Rd Main Dover, NH	R-12(Residential - Medium Density) C(Non-Residential - Commercial)

Plan Preparer
Kenneth Berry
Home: (603) 332-2863
Business: (603) 332-2863
Mobile: (603) 332-2863

Owner
Robert Baldwin
Mobile: (603) 983-2373

Applicant
Robert Baldwin
Mobile: (603) 983-2373

Project Manager
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Applicant
Berry Surveying & Engineering
335 Second Crown Point Road
Barrington, NH 03825
Business: (603) 332-2863
Mobile: (603) 781-3403

Permit Custom Fields

Select Permit Type	Groundwater Protection	General Purpose	New Construction	Project Zone	Mixed Use
What is the parcel zoned?	C	New Change in Impervious/Paved Area (sq ft)	19553	Work	Proposing to have impervious coverage of 49.95% where 20% max is allowed in the secondary groundwater recharge overlay.
permitstatefed	NHDES Sewer Discharge (Not yes Applied for), EPA NOI & SWPPP at the start of construction				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Chris_Berry_7/15/2024.jpg	07/15/2024 12:33	Berry, Chris		Uploaded via CSS
Permit Snapshot Report.pdf	07/15/2024 12:33	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
2025.05.22_PlanningTechnicalReviewCommittee.52OldRochester_SITE-2024-0009.pdf	05/30/2025 14:25	Blonigen, Rachel		

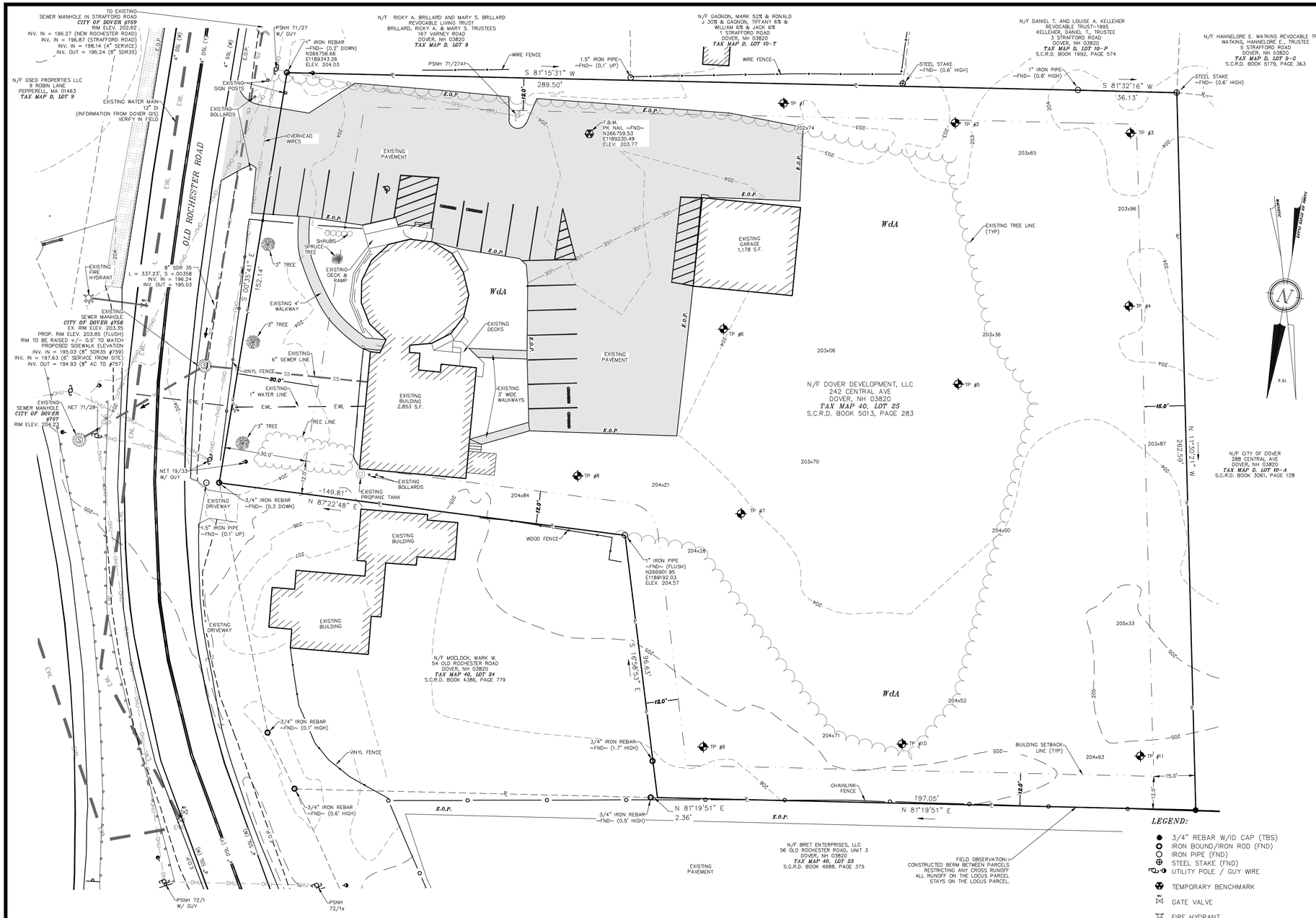
Invoice No.	Fee	Fee Amount	Amount Paid
INV-00008656	Planning Impervious Paved Area Fee	$1,368.71	$1,368.71
	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-00008656	$1,568.71	$1,568.71
	Grand Total for Permit	**$1,568.71**	**$1,568.71**

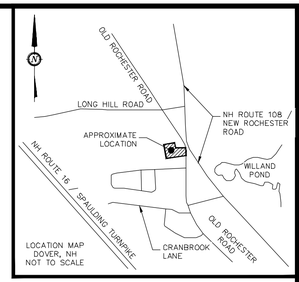
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	In Review	05/30/2025	06/06/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	In Review	05/30/2025	06/27/2025	

PERMIT SNAPSHOT REPORT (COND-2024-0019)

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		05/30/2025 14:26	
Confirm application complete v.1	Generic Action		05/30/2025 14:27
Conditional Use Review v.1	Receive Submittal	05/30/2025 0:00	
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		





NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) SITE ADDRESS: 52 OLD ROCHESTER ROAD

3.) TAX MAP 40, LOT 25

4.) S.C.R.D. BOOK 5013, PAGE 283

5.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

6.) ZONING: C – COMMERCIAL
SECONDARY GROUNDWATER RECHARGE OVERLAY
SETBACKS
FRONT ~ 30'
SIDE ~ 12'
REAR ~ 15'
MIN. LOT SIZE: 20,000'
MIN. FRONTAGE: 125'
MAX. LOT COVERAGE: 50%
MAX. BUILDING HEIGHT: 40'
MAX. IMPERVIOUS COVERAGE: 20%

7.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING BOUNDARIES AND CONDITIONS OF TAX MAP 40, LOT 25 LOCATED IN DOVER, N.H., AS OF THE FIELD SURVEY IN AUGUST OF 2022.

87.) I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PROPERTY DOES NOT FALL WITHIN THE FLOOD PLAIN. FLOOD HAZARD REF: FEMA, COMMUNITY #330145, MAP 33017C0310E, DATED: SEPTEMBER 30, 2015.

9.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL DATUM BASED ON NAD83 STATE PLANE. COORDINATES GATHERED USING CARLSON BRX7 SURVEY GRADE GPS RECEIVERS.

10.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN AUGUST 2022 WITH AN ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000.

11.) TOPOGRAPHY PROVIDED IS DEMARCATED AT 1' INTERVALS, AND IS THE RESULT OF A FIELD SURVEY PERFORMED IN AUGUST 2022.

12.) THIS SITE IS SERVICED BY MUNICIPAL SEWER AND WATER.

13.) WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN, CWS, CERTIFIED WETLANDS SCIENTIST, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, IN JUNE OF 2022. NO WETLANDS WERE FOUND ON SITE.

14.) EXISTING LOT COVERAGE, BUILDING, DECKS & GARAGE: 4,552 Sq.Ft., 6.07%

15.) EXISTING IMPERVIOUS COVERAGE: 17,909 Sq.Ft., 23.88%

16.) NO OBSERVED CEMETERIES

PLAN REFERENCES:

1.) "RAYMOND G. SWEATT & PERLEY J. COLE, FINAL PAL, STORAFFORD WOODS, DOVER, NEW HAMPSHIRE" BY: G.L. DAVIS & ASSOCIATES. DATED: MAY 1960 DOVER PLAN# 7 POCKET # 7 FOLDER#2

2.) "RE-SUBDIVISION OF LAND, PREPARED FOR, DORIS GRADY, LONG HILL ROAD, DOVER, NEW HAMPSHIRE" BY: MCENEANEY SURVEY ASSOCIATES, INC. DATED: SEPTEMBER 3, 1997 S.C.R.D.: PLAN # 50-79

3.) "LOT LINE ADJUSTMENT PLAN, PREPARED FOR, COLONIAL DOVER PROPERTIES LLC, AND, CITY OF DOVER, NH, LONG HILL ROAD & NH ROUTE 16B, DOVER, NEW HAMPSHIRE"" BY: MCENEANEY SURVEY ASSOCIATES, INC. DATED: JANUARY 4, 1999 S.C.R.D.: PLAN # 55-79

4.) "CONDOMINIUM SITE PLAN, PERRO PLACE CONDOMINIUM, 52 OLD ROCHESTER ROAD, DOVER, NEW HAMPSHIRE" BY: TRITECH ENGINEERING CORP DATED: JANUARY 24, 2019 FILE NUMBER 11897

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

KENNETH A. BERRY L.L.S. 805 DATE

SOILS:

WdA – WINDSOR, LOAMY SAND, 3-8% SLOPES

SEE: USDA/NRCS WEBSOIL

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR NOR THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.

WETLAND NOTES:

WETLANDS WERE DELINEATED BY DEIDRA BENJAMIN. IN JUNE 2022 UTILIZING THE FOLLOWING STANDARDS:

1. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
2. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2016).
3. NATIONAL WETLAND PLANT LIST (CURRENT VERSION).
4. NO WETLANDS WERE FOUND ON SITE.

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

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

LEGEND:

- 3/4" REBAR W/ID CAP (TBS)
- IRON BOUND/IRON ROD (FND)
- IRON PIPE (FND)
- STEEL STAKE (FND)
- UTILITY POLE / GUY WIRE
- TEMPORARY BENCHMARK
- GATE VALVE
- FIRE HYDRANT
- SEWER MANHOLE
- CURB STOP
- TEST PIT
- SINGLE POST SIGN
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING WATER LINE (FROM GIS)
- EXISTING SEWER LINE
- EXISTING SEWER SERVICE
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- FENCE

FND FOUND
TYP TYPICAL
TBS TO BE SET
S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#02	05-29-25	REVISED PER TRC #2 COMMENT
#01	03-18-25	REVISED PER TRC COMMENT

EXISTING CONDITIONS PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

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

NOT FOR CONSTRUCTION

PARKING REQUIREMENTS:

- CHAPTER 153-14D RESIDENTIAL USE IN A NON-CBD ZONE 1.90 SPACES PER UNIT x 44 UNITS = 84 MAX. SPACES
- CO-LOCATED RESIDENTIAL AND COMMERCIAL USES:
- 5% EV SPACES ARE REQUIRED = 4 (5 PROVIDED, 1 ACCESSIBLE)
- 5% BIKE SPACES REQUIRED = 4 (21 PROVIDED)

TOTAL PROVIDED = 79 SPACES
RATION OF 1.8 SPACES PER UNIT

- 4 ADA SPACES REQUIRED. 1 VAN ACCESSIBLE REQUIRED (4 VAN ACCESSIBLE ADA SPACES PROVIDED)

SNOW STORAGE CALCULATION:

- STORAGE CALCULATION (6:1 RATIO USED)
  - PLOWABLE AREA = 35,941 Sq.Ft. / 6 = 5,991 Sq.Ft.
  - 6,021 Sq.Ft. PROVIDED FOR TEMPORARY SNOW STORAGE

SNOW TO BE REMOVED TO AN APPROVED OFF-SITE LOCATION

BUILDING COMPOSITION AND SQUARE FOOTAGE ALLOCATION (81.3% RESIDENTIAL, 18.7% COMMERCIAL PROVIDED):

PROPOSED MIXED-USE BUILDING (FRONT)
3 COMMERCIAL UNITS LEVEL 1
4, 1 BR UNITS LEVEL 2
2,984 Sq.Ft. (FOOT PRINT)
2,779 Sq.Ft. (COMMERCIAL)
3,189 Sq.Ft. (RESIDENTIAL)
2 STORY BUILDING
(TOTAL AREA 5,968 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 3,246 Sq. Ft.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 3,342 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

PROPOSED MIXED-USE BUILDING (SOUTH)
2 COMMERCIAL UNITS LEVEL 1
20, 1 BR UNITS LEVELS 1-3
5,967 Sq.Ft. (FOOT PRINT)
2,515 Sq.Ft. (COMMERCIAL)
15,386 Sq.Ft. (RESIDENTIAL)
3 STORY BUILDING
(TOTAL AREA 17,901 Sq.Ft.)
UPPER LEVEL ROOF OVERHANG (ROOF GUTTER AREA): 6,343 Sq. FT.
TOTAL OVERHANG AREA (INCLUDES LOWER LEVELS, NON-GUTTERED): 6,734 Sq. Ft.

NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN, MANAGING MEMBER

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820
ROBERT BALDWIN, MANAGING MEMBER

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,997 Sq. Ft., 1.72 Ac.

5.) ZONING: C - COMMERCIAL
SECONDARY GROUNDWATER RECHARGE OVERLAY
SETBACKS
FRONT ~ 30'
SIDE ~ 12'
REAR ~ 15'
MIN. LOT SIZE: 20,000'
MIN. FRONTAGE: 125'
MAX. LOT COVERAGE: 50%
MAX. BUILDING HEIGHT: 40'
MAX. IMPERVIOUS COVERAGE: 20% (SRGO REQ.)

6.) SEE PROJECT NOTES SHEET FOR SITE PLAN NOTES AND OTHER REQUIRED CALCULATIONS.

7.) SEE LANDSCAPING AND LIGHTING PLANS FOR DETAILS.

8.) POROUS PAVEMENT SHALL BE MAINTAINED IN ACCORDANCE WITH THE SITE'S APPROVED O&M MANUAL IN PERPETUITY. FAILURE TO DO SO COULD RESULT IN A FAILURE TO COMPLY WITH THE PLANNING BOARD APPROVALS.

9.) EXISTING BUILDING COVERAGE AREA: 4,552 Sq.Ft., (6.07%)
EXISTING PAVED IMPERVIOUS AREA: 13,357 Sq. Ft. (17.81%)
EXISTING IMPERVIOUS AREA/LOT COVERAGE 17,909 Sq.Ft., (23.88%)

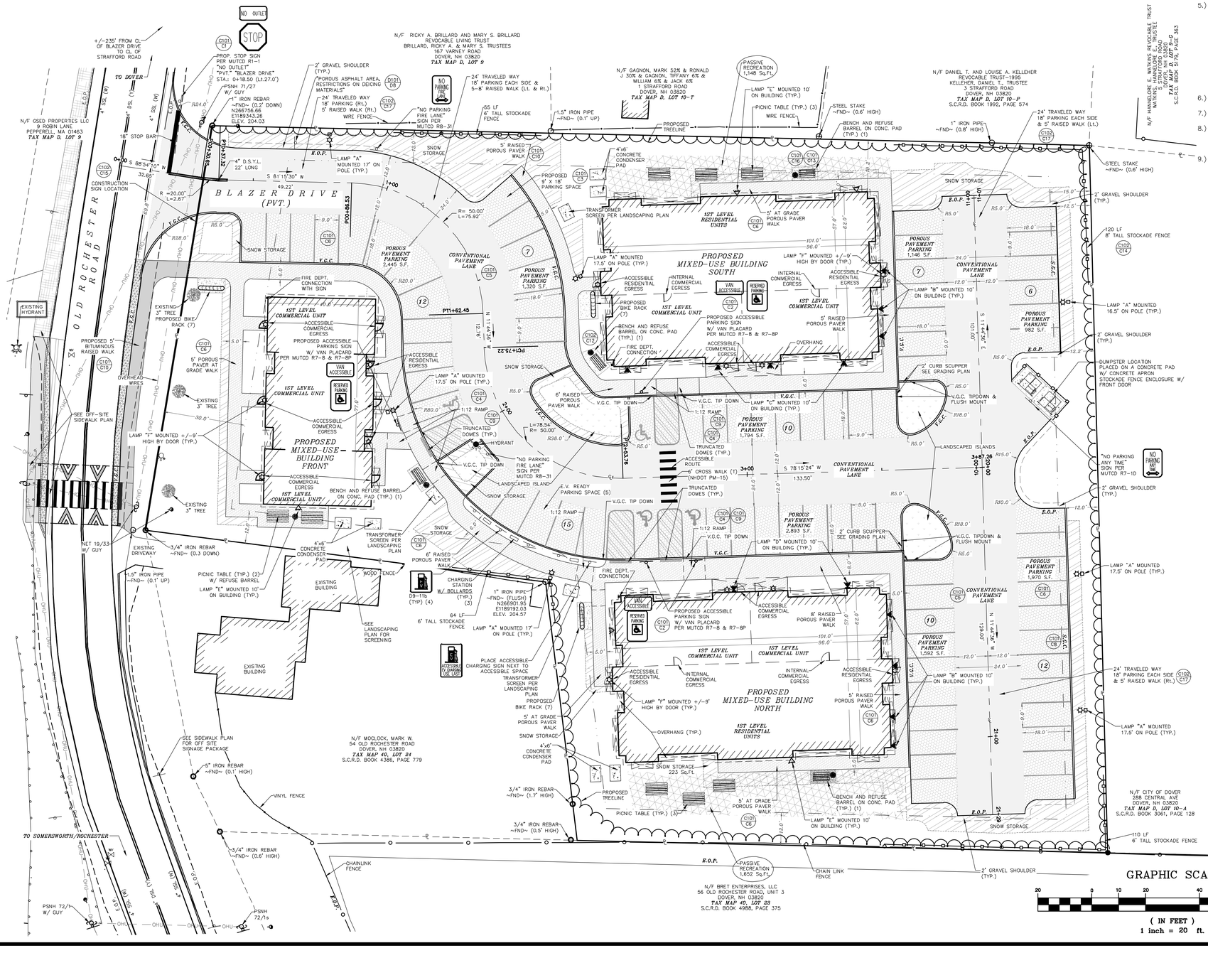
POROUS PAVEMENT & PAVERS NOT INCLUDED IN CALCULATION OF IMPERVIOUS AREA
PROP. BUILDING & OVERHANG IMPERVIOUS AREA: 16,810 Sq. Ft. (22.41%)
PROPOSED ROAD: 14,182 Sq. Ft. (18.91%)
PROPOSED IMPERVIOUS AREA (CURB, SHOULDER & CONCRETE PADS): 2,122 Sq. Ft. (2.83%)
TOTAL PROPOSED IMPERVIOUS COVER IS 33,114 Sq. Ft. (44.15%)

UNIT DENSITY CALCULATION:

- TOTAL AREA COMMERCIAL ZONE: 74,997 Sq. Ft.
  - DENSITY OF 5,000 Sq. Ft. / UNIT
  - 74,997 Sq. Ft. / 5,000 Sq. Ft. / UNIT = 14.99 UNITS
  - 14 UNITS ALLOWED BY RIGHT, 44 UNITS ON THE PROJECT
  - THE APPLICANT IS PROPOSING TO PURCHASE 30 UNITS THROUGH THE TDR PROGRAM. EACH UNIT IS PROPOSED TO BE RESTRICTED TO THE YEARLY PUBLISHED HUD RATES AND THEREFORE NO FEE IS REQUIRED FOR THE REQUESTED UNITS.

TRANSFER OF DEVELOPMENT RIGHTS (TDR):
PURCHASE OF 30 UNITS. ALL UNITS ARE RESTRICTED TO HUD RATES ~ NO FEE REQ.

RECREATION SPACE REQUIREMENTS (DOVER CODE ARTICLE V , 170-15.)
PROPOSED NUMBER OF BEDROOMS: 44 (44 1BR)
RECREATION SPACE REQUIREMENT (100 SF PER BEDROOM): 4,400 SF
½ RECREATION SPACE FOR PASSIVE USE: 2,200 SF
2,800 SF PROVIDED (SATISFIED ON SITE)
½ RECREATION SPACE FOR ACTIVE USE: 2,200 SF
(SATISFIED OFF SITE) (RECREATION FEE REQUIRED)



PROPOSED LEGEND:

- E101/E6 DETAIL SHEET / DETAIL
- TRANSFORMER & PAD
- FIRE HYDRANT
- SIGNAGE
- SHOULDER
- CENTER LINE
- BUILDING SETBACK LINE
- STOCKADE FENCE
- SNOW STORAGE
- RECREATION SPACE
- LIGHT TYPE "A" MOUNTED ON POLE
- LIGHT TYPE "B" MOUNTED ON BUILDING
- LIGHT TYPE "C" MOUNTED ON BUILDING
- LIGHT TYPE "D" MOUNTED ON BUILDING
- LIGHT TYPE "E" MOUNTED ON BUILDING
- LIGHT TYPE "F" MOUNTED BESIDE DOORS

PROPOSED SURFACE LEGEND:

- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

APPROVED DOVER

PLANNING FILE # SITE 2024-0009

#	DATE	REVISION
#02	05-29-25	REVISED PER TRC #2 COMMENT
#01	03-18-25	REVISED PER TRC COMMENT

SITE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 - 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY
No. 14293
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

PROJECT NOTES:

1.) OWNER: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

APPLICANT: DOVER DEVELOPMENT, LLC
242 CENTRAL AVE
DOVER, NH 03820

2.) TAX MAP 40, LOT 25

3.) S.C.R.D. BOOK 5013, PAGE 283

4.) LOT AREA: 74,847 Sq. Ft., 1.71 Ac

5.) THE INTENT OF THIS PLAN IS TO PROVIDE AN OVERVIEW OF GRADING & ENGINEERING DETAILS FOR BLAZER DRIVE AND TAX MAP 40, LOT 25.

6.) SEE EROSION & SEDIMENT CONTROL PLANS FOR DETAILS ON PERIMETER CONTROL (MULCH BERM / FENCE / SILT SOXX).

7.) BS&E IS TO PROVIDE ADDITIONAL BENCHMARKS PRIOR TO CONSTRUCTION.

8.) EXISTING AND PROPOSED CONTOURS ARE PROVIDED AT 1' INTERVALS WITH DRAINAGE FEATURES AT MORE PRECISE INTERVALS.

9.) SEE PROJECT NOTES SHEET FOR REMAINING GRADING NOTES.

10.) CATCH BASINS WITHIN ANY GRASS LINED AREAS OUTSIDE THE ROADWAY WILL HAVE "BEE HIVE" GRATES TO NOT ALLOW FOR ENTRAPMENT OF ANIMALS IN THE STRUCTURE. BASINS ARE TO HAVE NH STANDARD FRAMES AND GRATES MADE IN NORTH AMERICA. GRATES ARE TO BE INSTALLED BINDER FLUSH PRIOR TO BASE PAVE. UPON PROJECT COMPLETION FRAMES AND GRATES ARE TO BE CUT AND RIM RAISED TO FINAL PAVEMENT SURFACE. THIS IS TO ENSURE STORMWATER ENTERS THE SYSTEM AS DESIGN DURING THE INTERIM CONSTRUCTION PERIOD.

LEGEND:

- PROPOSED SEWER MANHOLE W/ STRUCTURE
- PROPOSED CATCH BASIN W/ STRUCTURE
- TEMPORARY BENCHMARK (T.B.M.)
- E101 / E6 — DETAIL SHEET / DETAIL
- CONTOUR MINOR, EXISTING
- CONTOUR MAJOR, EXISTING
- CONTOUR MINOR, PROPOSED
- CONTOUR MAJOR, PROPOSED
- CENTER LINE
- EXISTING WATER MAIN
- EXISTING SEWER LINE
- EXISTING DRAINAGE LINE
- EXISTING OVERHEAD UTILITY
- PROPOSED WATER MAIN
- PROPOSED FIRE PROTECTION
- PROPOSED WATER SERVICE
- PROPOSED SEWER LINE
- PROPOSED DRAINAGE LINE
- PROPOSED UNDERDRAIN
- UNDERGROUND UTILITY
- E175.31 / F175.31 — EXISTING SPOT GRADE, PROPOSED SPOT GRADE, FLOW ARROW
- INFILTRATION SUMP
- TEST PIT
- PROPOSED POROUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE
- PROPOSED POROUS BRICK PAVERS

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PLANNING FILE # SITE 2024-0009

REVISION	DATE	DESCRIPTION
#02	05-29-25	REVISED PER TRC #2 COMMENT
#01	03-18-25	REVISED PER TRC COMMENT

OVERVIEW GRADING & DRAINAGE PLAN
LAND OF
DOVER DEVELOPMENT, LLC
52 OLD ROCHESTER ROAD
DOVER, N.H.
TAX MAP 40, LOT 25

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

SCALE : 1 IN. EQUALS 20 FT.
DATE : JULY 1, 2024
FILE NO. : DB 2022 – 075

STATE OF NEW HAMPSHIRE
KENNETH A. BERRY No. 14249 LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

PERMIT SNAPSHOT REPORT COND-2025-0004
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/20/2025
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: The Applicant proposed to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 37 parking spaces, which is greater than the maximum 14 parking spaces permitted as calculated per zoning requirements. Therefore, the applicant is seeking a Conditional Use Permit to increase the number of proposed parking spaces permitted for the proposed use [153-14.D.(5)(a)]. Refer to Site Review Application #SITE-2024-0020 for additional information.

Parcel:	H0004-003000	Main	**Address:** 30 Grapevine Dr Dover, NH	Main

Zone: IT(Non-Residential - Innovative Technolo
C(Non-Residential - Commercial)

Owner	Architect	Applicant	Landscape Architect
Alex Vailas Home: (603) 472-4488	Core States Group 135 Water Street Suite 201 Naperville, IL 60540 Business: (312) 718-5415	Connor Ennis 352 Turnpike Road 3rd Floor 3rd Floor Southborough, MA 01772 Business: (508) 480-9900 Mobile: (856) 357-3485	Bohler Engineering 352 Turnpike Road Southborough, MA 01772 Business: (508) 480-9900

Plan Preparer	Engineer	Surveyor
Bohler Engineering 352 Turnpike Road Southborough, 01772 Business: (508) 480-9900	Bohler Engineering 352 Turnpike Road Southborough, 01772 Business: (508) 480-9900	Control Point Associates, Inc. 352 Turnpike Road Southborough, MA 01772 Business: (508) 948-3000

Permit Custom Fields

Select Permit Type	Off-Street Parking and Loading	General Purpose	New Construction	Project Zone	Non-Residential
What is the parcel zoned?	C	New Change in Impervious/Paved Area (sq ft)	36095	Work	The Applicant proposes to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 37 parking spaces, which is greater than the maximum 14 parking spaces permitted as calculated per zoning requirements. Therefore, the applicant is seeking a Conditional Use Permit to increase the number of proposed parking spaces permitted for the proposed use [153-14.D.(5)(a)]. Terrain Amendment - In progress
permitstatefed	NHDOT Driveway Permit #IA-0000000841 - In		progress; NHDES Alteration of		

PERMIT SNAPSHOT REPORT (COND-2025-0004)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Connor_Ennis_2/20/2025.jpg	02/20/2025 11:56	Ennis, Connor		Uploaded via CSS
Permit Snapshot Report.pdf	02/22/2025 12:52	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee		Fee Amount	Amount Paid
INV-00011354	Planning General Application Fee		$200.00	$0.00
		Total for Invoice INV-00011354	**$200.00**	**$0.00**
INV-00011355	Planning Public Notice in Newspaper		$120.00	$0.00
		Total for Invoice INV-00011355	**$120.00**	**$0.00**
		Grand Total for Permit	**$320.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		02/20/2025 14:33	
Confirm application complete v.1	Generic Action		02/20/2025 14:33
Conditional Use Review v.1	Receive Submittal		
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

July 7, 2025

City of Dover
Planning and Community Development
288 Central Avenue
Dover, NH 03820

Attn: Donna Benton, AICP – Director of Planning and Community Development

Re: Wetland Protection District Conditional Use Permit Approval Criteria
Proposed McDonald's Restaurant with Drive-Thru
30 Grapevine Drive
Dover, NH 03820

Dear Ms. Benton,

On behalf of the Applicant, McDonald's USA, LLC, and pursuant to §170-28F.(1) of the City of Dover Zoning Ordinance, Bohler provides the following narrative to address the Conditional Use Permit criteria:

§170-28F.(1)(a) – Practicable alternative. There is no practicable alternative that would have a less adverse impact on the area.

The proposed disturbance within the 50' wetland buffer is limited to the construction of paved parking areas and the re-contouring and grading of land. A retaining wall less than 4' in height is proposed within the 50' wetland buffer to limit the extent of re-contouring to within the 50' wetland buffer without direct impacts to the wetlands. Additionally, the proposed swale within the 50' wetland buffer is necessary to direct a small portion of runoff generated from the right-out only driveway away from the NHDOT right-of-way as directed by NHDOT. The parking area and drive-aisles within this portion of the site are necessary to allow for adequate delivery and fire truck turning movements. Therefore, there is no practicable alternative that would have a less adverse impact on the 50' wetland buffer.

§170-28F.(1)(b) – Avoidance. The potential impacts have been avoided to the maximum extent practicable. The applicant will demonstrate by plan and example that the proposed construction represents the least impacting alternative.

The proposed layout results in 7,630 SF of disturbance within the 50' wetland buffer and is limited to the construction of the paved parking areas and retaining wall and the re-contouring and grading of land. 690 SF of the proposed disturbance is for the construction of permanent parking areas and a retaining wall, and 6,940 SF of the disturbance is for the proposed re-contouring and grading of land. The proposed retaining wall prevents the re-contouring and grading of land to extent to within the wetlands to tie to existing elevations. Therefore, the impacts to the 50' wetland buffer have been avoided to the maximum extent practicable.

§170-28F.(1)(c) – Minimization. Any unavoidable impacts have been minimized. No reasonable alternative to the proposed construction exists which does not impact a wetland or which has less detrimental impact on a wetland. Design, construction and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and will include restoration of the site as nearly as possible to its original grade.

There are no proposed direct impacts to the existing wetlands on-site and all disturbance is limited to within the 50' wetland buffer. The proposed retaining wall partially within the

50’ wetland buffer limits the proposed disturbance to remain within the 50’ wetland buffer and therefore minimizes impacts to wetlands.

§170-28F.(1)(d) – Mitigation. If the applicant is required by state rules to prepare a compensatory mitigation plan, the applicant shall provide the Conservation Commission and Planning Board with one copy each of said plan for their review.

No impacts to the existing wetlands are proposed as part of this project and a compensatory mitigation plan is not required by state rules. Therefore, this section is not applicable for the proposed project.

§170-28F.(1)(e) – Approval for the wetlands impact has been received from the New Hampshire Department of Environmental Services Wetlands Bureau pursuant to Section G(3) below.

No proposed impacts to the existing wetlands are proposed and a state dredge and fill application is not required. Therefore, this section is not applicable for the proposed project.

§170-28F.(1)(f) – To assess and summarize the wetlands' functions and values as denoted in the NH Method and §170-28B(2)

The proposed development does not result in direct impacts to the existing wetland area and is limited to disturbance within the 50’ wetland buffer. It should also be noted that the majority of the disturbance within the 50’ wetland buffer is limited to re-contouring and grading of land. Additionally, runoff generated from impervious areas are proposed to be captured via on-site catch basins and conveyed to either the proposed underground basin or swale prior to discharge. Therefore, the proposed development is not anticipated to result in the destruction of wetlands or their critical functions and values, including flood protection, habitats, enhance water quality, protect ecological integrity, groundwater supply recharge, and steam flow.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

July 2, 2025

City of Dover
Planning and Community Development
288 Central Avenue
Dover, NH 03820

Attn: Donna Benton, AICP – Director of Planning and Community Development

Re: Environmental Conditional Use Permit Application – Conservation Commission
Proposed McDonald's Restaurant with Drive-Thru
30 Grapevine Drive
Dover, NH 03820

Dear Ms. Benton,

On behalf of the Applicant, McDonald's USA, LLC, Bohler is pleased to resubmit the attached Environmental Conditional Use Permit Application Package and supporting documentation as part of the proposed development and construction of a new 3,694 McDonald's restaurant with drive-thru located at NH-108 & Grapevine Drive, Dover, NH 03820 (Map #H, Lot #4-3) for the next Conservation Commission meeting.

Enclosed, please find the following in support of the above-mentioned project:

- One (1) copy of the cover letter;
- One (1) copy of the signed Conditional Use Permit Application;
- One (1) copy of the Owner Authorization form;
- One (1) copy of the Site Development Design Criteria;
- Two (2) 24"x36" copies of the "Proposed Site Plan Documents" prepared by Bohler;
- One (1) 24"x36" of the "Sound Exhibit" prepared by Bohler;
- One (1) copy of "Stormwater Management Drainage Report" prepared by TFMoran, Inc.;
- One (1) copy of the Operation & Maintenance Plan;
- One (1) copy of the Rip Rap Sizing Calculations;
- One (1) copy of Report of Geotechnical Investigation prepared by Whitestone Associates, Inc.
- One (1) 11"x17" copy of the architectural elevations;
- One (1) 11"x17" copy of the 3D Streetscape Rendering;
- One (1) copy of the Water Main Extension Memorandum;

Bohler has been collaboratively working with the Department of Planning and Community Development and Technical Review Committee for the past seven months over two (2) Technical Review Committee meetings and one (1) informal Technical Review Committee meeting. Over that period of time, the Applicant has addressed the Committee's comments through a series of response-to-comments letters, plan revisions, technical reports, exhibits, and narratives. The supporting documentation enclosed includes materials that have been previously submitted to the Department of Planning and Community Development throughout the collaboration and includes additional material requested at the 6/26 informal Technical Review Committee meeting. A brief description of the subject property and the proposed improvements is outlined herein.

McDonald's USA, LLC is proposing a substantial investment at the above-mentioned property to develop the existing vacant condominium land unit with a new ±3,694 SF McDonald's restaurant with drive-through and associated improvements. The subject project area is a portion of the overall property located at the corner of Grapevine Drive and Durham Road (NH Route 108) and is bound by Grapevine

BOHLER

Drive to the North, Durham Road (NH Route 108) to the East, a vacant field to the South, and an existing stormwater management area and Hannaford supermarket to the West. The property is identified as Map #H and Lot #4-3, and the project area is approximately ±83,463 SF. The site is located within the Commercial (C) District and the Residential-Commercial Mixed Use (RCM) Overlay District.

Under existing conditions, the overall property features an existing Hannaford, existing senior care housing center, Grapevine Drive (private), and associated utilities. The proposed project location consists of a vacant grass area, an existing above ground stormwater management area, an existing retaining wall, and existing utility service stubs. There are wetlands located along the southerly portion of the subject project area and have been delineated by Goddard Consulting on 4/29/2025. The majority of runoff on site flows north to south overland towards the existing wetland area on site. The remaining portion of runoff flows west towards the existing aboveground stormwater management system within the common area of the overall property. Additionally, the site also receives a small portion of run-on from Grapevine Drive and Durham Road (NH Route 108).

The project proposes to develop the existing site to construct a new ±3,690 SF McDonald's restaurant with a side-by-side drive-thru consisting of two (2) lanes and two (2) order points along with new parking areas, landscaping, utilities, and stormwater management improvements. One-way circulation around the site is proposed with one (1) full access driveway proposed along Grapevine Drive and one (1) right-out only egress drive proposed along Durham Road (NH Route 108). A total of thirty-seven (37) parking stalls are proposed whereas a maximum of fourteen (14) spaces are permitted for the retail/service use, and the Applicant seeks a Conditional Use Permit to increase the number of parking spaces permitted for the proposed use per §153-14.D.(5)(a) to be reviewed by the Planning Board.

The proposed development area has been designed to drain to a conventional closed-pipe drainage system with deep-sump, hooded catch basins, and one (1) hydrologically connected subsurface infiltration basin. Pretreatment of stormwater runoff is achieved by either deep sump catches basins or an isolator row within the hydrologically connected subsurface basin prior to discharging into the existing aboveground stormwater management area within the common area of the property. Additional detail and stormwater management calculations are provided in the "Stormwater Management Drainage Report" prepared by TFMoran, Inc. included as part of this submission. The proposed project results in re-contouring and grading of land and the construction of parking lots within the 50' wetland buffer within the Wetland Protection District, and therefore the Applicant seeks a Conditional Use Permit per §170-32.A.(1).

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AFB4D

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: McDonald's USA LLC (c/o Bohler) Telephone #630-209-1540

Address of Applicant: 110 N. Carpenter St. Chicago, IL 60607

E-Mail Address: cennis@bohlereng.com

Name of Property Owner (if different from applicant): VC Dover Investments LLC Telephone #

Address of Property Owner: 48 Constitution Drive Bedford, NH 03110

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 4-3

Address of Property: 30 Grapevine Drive, Dover, NH 03820

Zoning District(s) Commercial (C) Overlay District(s) RCM Overlay District

Existing Use of Property: Overall property consists of an existing Hannaford supermarket and existing Senior Care Housing. Project location is an existing grass field.

CONDITIONAL USE PERMIT INFORMATION

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

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

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:
The Applicant proposed to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 37 parking spaces. The proposed activity requires Conditional Use Permits for the following the construction of parking lots and re-contouring or grading of land within the 50' wetland buffer within the Wetland Protection District [170-28.G.(1)(d)] and to increase number of parking spaces permitted for the proposed use [153-14.D.(5)(a)].

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Alteration of Terrain Amendment; NHDOT Driveway Permit

Name of Professional That Prepared Plans: Bohler Engineering c/o John Kucich

Address 352 Turnpike Road Ste. 300 Southborough, MA 01752 Telephone #: 508-480-9900

Professional License #: NH License No. 15476 E-mail address: cennis@bohlereng.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: Refer to Planning Application Owner Authorization form Date:

Signature of Applicant (if different from owner): DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

Signature of Agent: Connor Ennis Date: 12/18/2024
(Bohler attn: Connor Ennis)

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: Refer to Planning Application Owner Authorization form Date:

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AFB4D

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
H	4-3	VC Dover Investments LLC	48 Constitution Dr. Bedford, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
McDonald's USA LLC	c/o Bohler	352 Turnpike Rd Southbough, MA 01752

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
John Kucich, PE	Bohler	352 Turnpike Rd Southbough, MA 01752

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AF84D

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit = $_____
- ☑ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000) 200.00
  - New construction $.15 sq. ft. x # 3,694 sq. ft.= $ 554.10
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☑ CONDITIONAL USE PERMIT Application fee $200.00 x # 3 per Application = $ 600.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☑ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # 33,850 sq. ft. = $ 2,369.50

SUBTOTAL PLAN REVIEW FEE = $ 3,723.60

AND

B. Abutter Notification/Mailing Labels

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $_____

BALANCE DUE = $_____

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

Docusign Envelope ID: 055AEEA7-4DBB-4287-B6A9-35F0EB5809FF

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

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

Property Owner Name: VC Dover Investments, LLC

Signature(s) of Property Owner(s): _____ Date: Dec 13, 2024

Signature of Applicant: DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Property Owner Name: VC Dover Investments, LLC

Signature(s) of Property Owner(s): _____ Date: Dec 13, 2024

Signature of Applicant: DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

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

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

Address of Sign Location: _____

Sign Permit Application Type: (check one)

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

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

May 22, 2025

City of Dover
Planning and Community Development
288 Central Ave
Dover, MA 03820

Re: Site Development Design Criteria
Site Plan Review, 30 Grapevine Drive
(Assessor's Map H, Lot 4-3)

Dear Members of the Planning Board:

Pursuant to §153-14 of the City of Dover Zoning Ordinance, the Applicant provides the following narrative for each site development design criteria as outlined below:

A. Stormwater management, erosion control and flood hazards

The proposed stormwater management system illustrated on the drawings prepared by Bohler, meets, or exceeds the standards set forth in the New Hampshire Stormwater Manual. The proposed development provides water quality, including the removal of TSS, Total Nitrogen, and Total Phosphorus, and required groundwater recharge through the proposed underground infiltration basin. Additionally, the proposed development results in the reduction of peak rates of stormwater runoff from the subject site when compared to pre-development conditions for the analyzed 2-, 10-, 25-, 50-, and 100-year storm events. This project required an Alteration of Terrain amendment through NHDES and is actively being reviewed by NHDES.

The proposed development does not contribute pollutants to an impaired water body and uses low-impact development strategies including an underground infiltration basin. Wetlands onsite have delineated by Goddard Consulting on 4/29/2025, and the proposed disturbance within the existing wetland buffers consists of proposed parking areas and grading activities as outlined in Conditional Use Permit #COND-2025-0005. No direct impacts to the existing wetland area are proposed. No storage of fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials are proposed as part of this development

Erosion control measures are proposed throughout construction and meet the design standards set forth in the New Hampshire Stormwater Management Manual Volume 3. The project proposed disturbance within the 50' wetland buffer including grading and permanent parking areas as outlined in Conditional Use Permit #COND-2025-0005, and perimeter site controls are to be placed within the wetland buffer accordingly. Refer to Sheets C-801 and C-802 of the "Proposed Site Plan Documents" prepared by Bohler for additional information regarding erosion control measures. The Applicant shall be responsible for applicable inspection requirements as outlined in Section 153-14.A.(3)(e).Additionally, an operation and maintenance manual has been provided and includes scheduled maintenance and periodic inspections of stormwater management structures.

Refer to the "Proposed Site Plan Documents" prepared by Bohler and the "Stormwater Management Drainage Report" prepared by TF Moran, Inc. for additional information regarding stormwater management on site.

B. Utilities

As the proposed development has access to existing water services within Grapevine drive, no extensions to the public water mains are proposed. Additionally, sanitary sewer services are provided to the site via an existing manhole with a gravity service connecting to the existing pump station and force main within the overall property. Sewer pump calculations demonstrating the capacity to service the proposed McDonald's use have been including in this application. All proposed water and sewer connections shall be in accordance with Chapter 121 of the Code of the City of Dover. All proposed electric, cable, and telephone lines are to be installed underground. Refer to Sheet C-501 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

C. Driveways, accessways and internal roads

The proposed development provides one (1) full access driveway to Grapevine drive, which is a private roadway, and one (1) right-out only egress drive to Durham Road under NHDOT jurisdiction. The width of the proposed driveway are 30' and 18', respectively. The proposed exit only driveway to Durham Road is actively being reviewed by NHDOT under Driveway Permit #IA-0000000841.

D. Parking

The proposed development provides a total of 37 parking spaces on site which exceeds the maximum number of parking spaces for a retail use outlined in the Parking Regulation Table. A Conditional Use permit is required to increase the number of parking spaces permitted for the proposed use and has been requested with the City under application #COND-2025-0004. Of the 37 total parking spaces proposed, 8 spaces are reserved for curbside pickup, drive-thru pull forward, and courier parking. Employees on the maximum shift may use 12 spaces, which leaves 17 parking spaces for in-house dining, takeout customers, and drive-thru patrons who choose to park and eat within their vehicles. If drive-thru hours are restricted, during the restricted hours customers which would typically use the drive-thru under normal operations would have to park and use takeout or dine-in options, increasing parking demand. The 23 parking spaces proposed above the maximum 14 permitted spaces are proposed to be constructed of pervious pavers. 32 parking spaces are proposed at 75° and 9' in width and 19.5 in length, 3 parking spaces are proposed at 90° and 9' in width and 19.5' in length, and 2 parallel parking spaces are proposed at 10' in width and intended to be reserved for customers waiting on larger drive-thru orders. Minimum aisle width on site is 22', with the exception of the 18'-wide right-out only drive to Durham Road.

A total of seven (7) electric vehicle ready parking spaces are proposed as part of this project. A parking space meets electric vehicle readiness requirements if one or more dedicated circuits on the electrical panels such that the service capacity to accommodate the required number of Level 2 EVSE. Conduit is proposed to be installed at the EV Ready parking spaces to allow the addition of all necessary wiring to electrify installed EVSE at the parking space without having to excavate to do so, therefore meeting the requirement for electric vehicles readiness. As such, no EV charging stations are proposed at this time.

This project is a non-residential project and per Chapter 153-14 D.(3)(a)[2] of the City of Dover, NH Planning Board Regulations, 2% of the total number of new parking spaces must be provided Electric Vehicle Charging Readiness. 2% of the total 37 parking spaces proposed is calculated to be 1 electric vehicle charging ready parking space. 2 additional spaces are required for every 10 spaces above the maximum permitted. There are 23 spaces proposed above the maximum 14 spaces permitted which results in an additional 4 electric vehicle charging ready spaces, and the total number of electric vehicle charging ready spaces required is calculated to be 5 spaces.

E. Outdoor lighting

The proposed development provides site lighting throughout the parking area and around all sides of the proposed building for security purposes. The proposed lot lighting has been designed to not cause glare or direct illumination on to adjacent properties or streets. The light fixtures are proposed to be mounted at a height of 21' with the minimum illumination level within the parking lot to be 0.5 fc, and a uniformity ratio of 6:1 is provided. All wiring for outdoor lighting is proposed to be placed underground. Refer to Sheet L-201 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

F. Fire Hazards

Fire lanes are provided via the one-way drive aisles around site with full access to all sides of the proposed building. No storage of explosives, flammable liquids, liquefied petroleum gas or similar materials are proposed to be stored on site.

G. Landscaping

The proposed landscaping meets the requirements outlined in 153-14.G. by preserving existing landscaping where feasible, providing a minimum of 8% interior landscaping, and providing a total of 12 native trees and 119 shrubs. The proposed landscaping consists of native species and fosters biological diversity while providing a visual buffer. Additional landscaping has also been provided at the request of City Planning Staff along the trash enclosure at the rear of the site to provide an enhanced visual buffer. Refer to Sheets L-101 and L-102 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

H. Driveway location and spacing standards for nonresidential uses in the C, CM, and IT Districts

Two (2) driveways are proposed as part of this project consisting of one (1) full access driveway to Grapevine Drive and one (1) right-out only driveway to Durham Road (NH-108). The location of the driveway along Grapevine Drive as currently proposed is the result of previous feedback from NHDOT to shift the driveway farther from the intersection of Grapevine Drive and Durham Road to avoid potential conflicts with vehicles queuing at the signalized intersection. The proposed right-out only driveway to Durham Road is actively being reviewed by NHDOT under Driveway Permit #IA-0000000841.

I. Incentives for reducing the number of driveways in the C, CM, and IT Districts

Incentives for reducing the number of driveways are not applicable as the maximum lot coverage requirement is met. The proposed development is located in the Commercial (C) District and the maximum lot coverage permitted is 50%, whereas 43.3% lot coverage is proposed.

J. Interconnections between parcels.

The proposed project provides one full access driveway to Grapevine Drive which is a private roadway connecting Durham Road to Mast Road and serves as an interconnecting drive to the existing Hannaford plaza.

K. Location of parking lots.

The proposed development is within the Commercial (C) District and provides a total of 37 parking spaces which are located on the front and sides of the proposed building. The site has frontage along Durham Road and Grapevine Drive (private). A total of 13 parking spaces are proposed in front of the proposed building (closer to the front lot line) in relation to the Durham Road frontage which is 35% of the proposed parking spaces. Grapevine Drive is a private right-of-way and has been excluded from this calculation.

L. Architectural design standards.

The architecture of the proposed building has been revised from the prototypical McDonald's architecture to reflect the local climate, topography, and history of Dover. The site is located within the Commercial (C) District which has an auto-mobile-oriented and big box character already established, however the proposed architecture modifications look to provide an enhanced appearance for the City of Dover through the use of natural materials and color palette, the articulation of the building entrance, the addition of parapets along the roof, and other elements of building design and scale to reflect more traditional New England style architecture.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

PROPOSED SITE PLAN DOCUMENTS

FOR

PROPOSED

RESTAURANT WITH DRIVE-THRU

LOCATION OF SITE

NH ROUTE 108 & GRAPEVINE DRIVE, CITY OF DOVER

STRAFFORD COUNTY, NEW HAMPSHIRE

MAP H, LOT 4-3

PERMIT REFERENCES

CITY OF DOVER PLANNING BOARD
- SITE REVIEW APPLICATION #SITE-2024-0020
- ENVIRONMENTAL CONDITIONAL USE PERMIT APPLICATION PER SECTION 170-28.G.(1)(D) #COND-2025-0005
- NON-ENVIRONMENTAL CONDITIONAL USE PERMIT APPLICATION PER SECTION 153-14.D.(5)(A) #COND-2025-0004

NHDOT
- DRIVEWAY PERMIT #IA-0000000841

REFERENCES AND CONTACTS

REFERENCES

♦ALTA/NSPS LAND TITLE SURVEY:
CONTROL POINT ASSOCIATES, INC.
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
DATED: 07/10/2024 (REVISED THROUGH 05/15/2025)
SURVEY JOB # 03-240216-00
ELEVATIONS: NAVD 1988

♦ARCHITECTURAL PLAN:
CORE STATES GROUP
135 WATER STREET, SUITE 201
NAPERVILLE, IL 60540

♦GEOTECHNICAL REPORT:
WHITESTONE ASSOCIATES, INC.
3 EXECUTIVE PARK DRIVE, SUITE 202
BEDFORD, NEW HAMPSHIRE 03110
DATED: 06/11/2024
PROJECT # GM2421922.000

GOVERNING AGENCIES

♦PLANNING DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6008

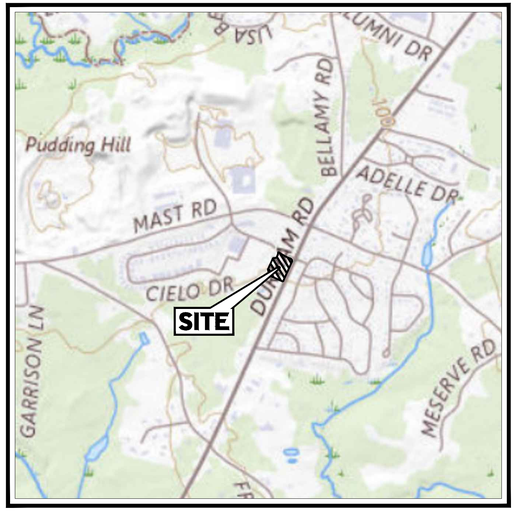
♦BUILDING DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6038

♦FIRE DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6038

ROW JURISDICTION

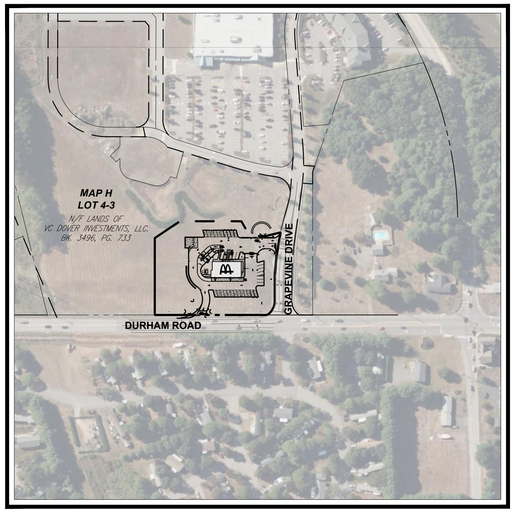
♦TRAFFIC, STORMWATER, WATER & SEWER
DOVER COMMUNITY SERVICES DEPARTMENT
271 MAST ROAD
DOVER, NH 03820
PHONE: (603) 516-6450

THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS, HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.



USGS MAP

SCALE: 1" = 1,000'
SOURCE: USGS QUADRANGLE



SITE MAP

SCALE: 1" = 200'
SOURCE: AUTODESK CIVIL3D GEOLOCATION

OWNER

VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

DEVELOPER

McDONALD'S USA, LLC
110 N CARPENTER STREET
CHICAGO, IL 60607

SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101
GENERAL NOTES AND LEGEND	C-102
EXISTING CONDITIONS/DEMOLITION PLAN	C-201
SITE PLAN	C-301
NEIGHBORHOOD PLAN	C-302
GRADING AND DRAINAGE PLAN	C-401
UTILITY PLAN	C-501
EROSION AND SEDIMENT CONTROL PLAN	C-801
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	C-802
CONSTRUCTION DETAILS	C-901
CONSTRUCTION DETAILS	C-902
CONSTRUCTION DETAILS	C-903
CONSTRUCTION DETAILS	C-904
CONSTRUCTION DETAILS	C-905
CONSTRUCTION DETAILS	C-906
CONSTRUCTION DETAILS	C-907
LANDSCAPE PLAN	L-101
LANDSCAPE NOTES AND DETAILS	L-102
LIGHTING PLAN	L-201
ALTA/NSPS LAND TITLE SURVEY (BY OTHERS)	2 SHEETS

PREPARED BY

BOHLER

CONTACT: ERIC DUBRULE

WETLAND SCIENTIST'S SIGNATURE

DATE

OWNER'S SIGNATURE

DATE

2" X 2" CITY OF DOVER APPROVAL BLOCK

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE COPYRIGHT BY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE, WITHOUT THE WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVIL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KULICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 49330
NEW HAMPSHIRE LICENSE NO. 19476
CONNECTICUT LICENSE NO. 30177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-CNDS-MAA240177.00-4A-----4A LAYOUT C-101 COVR JDG

GENERAL NOTES

(Rev. 1/2023)

1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING MA, LLC (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE PROFESSIONAL OF RECORD AND BOHLER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER , IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS. THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE PROFESSIONAL OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THIS HAS BEEN ACCOMPLISHED. THE CONTRACTOR HAS REVIEWED ALL CONDITIONS OF APPROVAL TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, CIVIL AND STRUCTURAL CONSTRUCTION DOCUMENTS (INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS, WHERE APPLICABLE). THE CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS.
7. CONTRACTOR MUST REFER TO ARCHITECTURAL AND PROFESSIONAL ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REMOVED BECAUSE OF BOHLER AND/OR THE PROFESSIONAL OF RECORD'S USE OF THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING PROFESSIONAL OF RECORD AND BOHLER WRITTEN NOTIFICATION OF SAME AND (B) PROFESSIONAL OF RECORD AND BOHLER, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS DUE TO POTENTIAL PRINTING INACCURACIES. ALL DIMENSIONS ARE MEASUREMENTS TO BE CONFIRMED IN THE FIELD. THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF PARTS AND MATERIALS AND COMMENCEMENT OF SITE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DRAWINGS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTOR'S OWN MEASUREMENTS FOR LAYOUT OF IMPROVEMENTS.
10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN (A) THE PLANS; AND (B) THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, MUST TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY PRIOR TO PREPARATION OF ANY GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH ANY FURTHER WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW AND COMPLY WITH ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.
12. PROFESSIONAL OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, ASBESTOS, OR LIQUID WASTE DISCHARGES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. NOTHING IN THIS WORK IS TO BE PERFORMED AT CONTRACTOR'S SOLE COST AND EXPENSE.
14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND FOR THIRD PARTIES, PEDESTRIANS AND ANYONE ELSE WHO MAY BE POTENTIALLY INVOLVED WITH THE PROJECT.
15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNSUITABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR.
16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN PROPER AND LEGAL DISPOSAL FOR CONSTRUCTION DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
17. THE CONTRACTOR IS RESPONSIBLE, AT CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS AND ANY ASSOCIATED EQUIPMENT. ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT OR BETTER THAN EXISTED PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE OWNER AND THE CONSTRUCTION MANAGER IN WRITING PRIOR TO THE START OF CONSTRUCTION.
18. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE PROFESSIONAL OF RECORD AND BOHLER HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF PROFESSIONAL OF RECORD'S AND BOHLER'S SERVICES AS RELATED TO THE PROJECT. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR, AND DO NOT HAVE CONTROL OF, ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS, AT ANY TIME.
19. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER , ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE, IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER AND BOHLER FOR ANY AND ALL DAMAGES, CLAIMS, LAWSUITS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS.
20. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE. IF THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER HARMLESS FOR AND FROM ALL INJURIES, CLAIMS AND DAMAGES THAT PROFESSIONAL OF RECORD AND BOHLER SUFFER AND ANY AND ALL COSTS THAT PROFESSIONAL OF RECORD AND BOHLER INCUR AS RELATED TO SAME.
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME AS ADDITIONAL INSURED THE OWNER AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANT'S AS APPROPRIATE, NAMED INSUREDS AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCING WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED. INSURANCE AS AFORESAID SHALL COVER ALL RISKS AS THEY MAY EXIST, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANT'S FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTOR(S), ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. THE CONTRACTOR MUST NOTIFY PROFESSIONAL OF RECORD, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF THE INSURANCE COVERAGES.
22. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONTRACTOR'S CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED ON THESE PLANS, AND FOR ANY CONFLICTS IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
23. NEITHER THE PROFESSIONAL OF RECORD AND BOHLER NOR ANY OF THEIR CONSULTANTS, OR THE OWNER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANT'S (COLLECTIVELY, THE "INDEMNIFYING PARTIES"), RELIEVES OR WILL RELIEVE THE CONTRACTOR OF AND FROM CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND/OR COMPLIANCE WITH ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER PARTIES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION AND ANY ALL HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER PARTIES FOR AND FROM ANY LIABILITY TO BOHLER PARTIES RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND/OR VIOLATIONS OF THESE NOTES OR ANY NOTES ON THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE.
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME. BOHLER WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS, AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER'S ATTENTION. BOHLER IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE PROFESSIONAL OF RECORD AND BOHLER FOR ALL DEVIATIONS WITHIN PROFESSIONAL OF RECORD'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL CONSEQUENTIAL AND PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE PROFESSIONAL OF RECORD AND BOHLER PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.
26. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, AS WORK WITHIN THE PUBLIC RIGHT-OF-WAY MAY REQUIRE, EVEN IN THE RIGHT OF WAY ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN AND, FURTHER, THE PROFESSIONAL OF RECORD AND BOHLER IS NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER PARTIES HARMLESS FROM ALL INJURIES, DAMAGES AND COSTS WHICH THE PROFESSIONAL OF RECORD AND BOHLER INCUR AS A RESULT OF SAID FAILURE OR FAILURE TO PRESERVE.
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. THE PROFESSIONAL OF RECORD AND BOHLER HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK.
30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS, RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF THE CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD PROFESSIONAL OF RECORD AND BOHLER PARTIES HARMLESS FROM ANY AND ALL INJURIES, CLAIMS AND DAMAGES THAT PROFESSIONAL OF RECORD SUFFERS AND COSTS THAT PROFESSIONAL OF RECORD INCURS AS A RESULT OF SAID FAILURE.
31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.
32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE PROFESSIONAL OF RECORD AND BOHLER, THE USE OF THE WORDS 'CERTIFY' OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE PROFESSIONAL OF RECORD'S AND BOHLER KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY CIRCUMSTANCES.

DEMOLITION NOTES

(Rev. 1/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FEDERAL HIGHWAY ADMINISTRATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS.
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR TO REMAIN.
   A. THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES ALL INCIDENTAL ITEMS NECESSARY FOR THE COMPLETE AND THOROUGH CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
   B. THIS PLAN IS NOT INTENDED TO AND DOES NOT PROVIDE DIRECTION REGARDING THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE UTILIZED MUST BE IN STRICT ACCORDANCE AND CONFORMANCE WITH ALL OSHA, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC.
5. THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION OF ALL FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
6. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST INDEPENDENTLY RETAIN A SYSTEMS SAFETY CONSULTANT TO ENSURE COMPLIANCE WITH ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME.
7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC IN THE VICINITY OF DEMOLITION AREAS OR OTHERWISE INCORRECTLY IN THE PUBLIC DOMAIN. THE CONTRACTOR MUST SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME, TO OR AROUND THE DEMOLITION AREA.
8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS, ALL CONCERNS OR QUESTIONS REGARDING APPLICABLE SAFETY STANDARDS, AND/OR THE SAFETY OF PERSONNEL, CONTRACTOR AND/OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. ANY SUCH CONCERNS MUST BE CONVEYED TO THE PROFESSIONAL OF

NAD83

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

PROP LIMIT OF WORK LINE (TYP)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

47.83'
S84°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

69.80'
N85°41'53"W

48.72'
N60°11'10"W

75.52'
N65°40'47"W

52.03'
S65°46'54"E

162.91'
S65°46'54"E

EX LOT LINE (TBR)

N24°21'47"E
340.00'

N24°13'06"E
313.87'

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

EX OVERGROWN GRASS (TBR)

EX RIP RAP (TBR)

LIMIT OF EX SLOPED GRANITE CURB (TBR)

EX TREE (TBR)

24" RCP
INV=102.89

EX POSSIBLE WELL (TBR)

EX HEAD WALL (TBR)

EX UG DRAIN LINE (TBR)

EX STONE WALL (TBR)

EX STONE WALL (TBR)

EX CATCH BASIN (TBR)
GRT=108.58
INV(S)=103.1
INV(B)=(NP-HDD))
TOM=103.1±

EX ASPHALT PAVEMENT (TBR)

EX SLOPED GRANITE CURB (TBR)

18" RCP

EX UG DRAIN LINE (TBR)

LIMIT OF EX UG DRAIN LINE (TBR). PRIOR TO CONSTRUCTION, GC SHALL CONFIRM EXACT LOCATION AND ELEVATION OF EXISTING INVERT AND NOTIFY THE ENGINEER IN WRITING SHOULD CONFLICT OCCUR

EX HYDRANT

12" RCP
INV=104.4

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/29/2025

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF SOIL BORINGS (TYP OF 14) AND INFILTRATION TESTS (TYP OF 2) PERFORMED BY WHITESTONE ASSOCIATES, INC.

APPROX. LOC. OF UG WATER LINE

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 3496, PG. 746. (DOT HATCH)

APPROX. LOC. OF UG ELECTRIC LINE

APPROX. LOC. OF UG GAS LINE

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

EX STRIPED MEDIAN TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

EX SLOPED GRANITE CURB (TBR)

APPROX LOCATION OF EX UG SANITARY LINE (TBR)

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

TBM-B

TRANSFORMER

EX STRIPING TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

PORTION OF EX SLOPED GRANITE CURB TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

APPROX LIMIT OF EX SLOPED GRANITE CURB TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

APPROX LOCATION OF EX "WAYFINDING" DIRECTORY SIGN

PROP LIMIT OF WORK LINE (TYP)
GRT=111.90
INV(N)=107.2
INV(S)=106.2
INV(E)=(NP-HDD))
TOM=106.0±

TBM-A

APPROX LOCATION OF EX WALK (TO REMAIN)

APPROX LOC. OF UG DRAINAGE LINE

APPROX LOC. OF UG WATER LINE

APPROX LOC. OF UG ELEC LINE

NEW HAMPSHIRE DEMOLITION NOTES

(Rev. 1/2023)

1. THE CONTRACTOR MUST LOCATE AND CLEARLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
2. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND IF REQUIRED, DIG EXPLORATORY TEST PITS TO CONFIRM EXACT LOCATION AND DEPTH OF UTILITIES. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER WITH ANY CONFLICTS AS NEEDED TO COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS.
3. CONTRACTOR SHALL INSPECT ALL EXISTING UTILITY STRUCTURES THAT ARE TO REMAIN FOR THE PROJECTS RE-USE TO VERIFY SUITABILITY FOR SAME. IF STRUCTURES CAN NOT BE REUSED THEN THE CONTRACTOR SHALL PROVIDE A NEW STRUCTURE. THE CONTRACTOR SHALL COORDINATE SUCH WORK WITH THE APPLICABLE UTILITY PROVIDER.
4. CONTRACTOR TO REMOVE ANY BUILDING FOUNDATION REMAINS OR ASSOCIATED IMPROVEMENTS, DELETERIOUS MATERIALS, AND/OR DEBRIS THAT IMPEDE THE WORK SHOWN ON THESE PLANS.
5. THE CONTRACTOR SHALL REVIEW THE PLANS VERSUS THE LOCATION OF EXISTING STRUCTURES, UTILITIES AND APPURTENANCES IN THE FIELD TO CONFIRM ACCURACY OF SAME AND VERIFY ITEMS TO BE REMOVED. THE CONTRACTOR SHALL CARRY COSTS FOR REMOVAL OF ANY EXISTING STRUCTURES, APPURTENANCES, AND UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO; DRAIN, WATER, SEWER, STEAM, IRRIGATION, GAS, TELECOM AND ELECTRIC.
6. THE CONTRACTOR SHALL MAINTAIN, ADJUST OR ABANDON EXISTING MONITORING WELLS IN ACCORDANCE WITH THE DIRECTION OF THE ENVIRONMENTAL CONSULTANT (TYP.)
7. WHERE THE LIMIT OF WORK COINCIDES WITH PROPERTY LINE, TREE LINE, PROPOSED SAWCUT OR COMBINATION THEREOF IT IS SHOWN ADJACENT TO THESE FEATURES FOR GRAPHICAL CLARITY.
8. EXISTING TREES TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION UNLESS CLEARLY INDICATED OTHERWISE. REASONABLE CARE AND CAUTION SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT DAMAGE AND SELECTIVE PRUNING MAY BE REQUIRED TO ENSURE THAT TREES DO NOT CONFLICT WITH THE DEVELOPMENT.
9. CONTRACTOR SHALL REPAIR/REPLACE ANY TRAFFIC LOOP DETECTORS THAT ARE DAMAGED DURING CONSTRUCTION WITHIN EXISTING OR PROPOSED RIGHTS OF WAYS. ANY SUCH WORK SHALL BE PERFORMED BY A LICENSED / DOT APPROVED SIGNAL CONTRACTOR. ANY DAMAGED LOOPS OR OTHER SIGNAL EQUIPMENT SHALL BE REPAIRED IMMEDIATELY AFTER THE WORK IS COMPLETE. THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO MAKE ANY TEMPORARY SIGNAL CHANGES IF REQUESTED BY DOT AND/OR THE MUNICIPALITY.
10. THE CONTRACTOR MUST FIELD VERIFY THE LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO DETERMINE THE EXACT SIZE, DEPTH AND LOCATION, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. CONTRACTOR SHALL LOCATE ANY EXISTING UTILITY SERVICES THAT ARE TO BE TERMINATED AT THE EXISTING MAIN AND/OR PROPERTY LINE. THESE SERVICES ARE TO BE TERMINATED IN ACCORDANCE WITH MUNICIPAL / STATE TRANSPORTATION DEPARTMENT REQUIREMENTS.

DEMOLITION ABBREVIATIONS

ABBREVIATION	DESCRIPTION
(TBA)	TO BE ABANDONED
(TBR)	TO BE REMOVED
(TBV)	TO BE VACATED
(RELO)	TO BE RELOCATED

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

THIS PLAN TO BE UTILIZED FOR DEMOLITION/ REMOVAL PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN IS PROPRIETARY AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE, WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: MAA240177.00-4A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUOCH
NEW HAMPSHIRE
JOSEPH A. KUOCH
PROFESSIONAL ENGINEER
MAINE CT NJ RI STTS LICENSE NO. 14830
NEW HAMPSHIRE LICENSE NO. 19476
COMMONWEALTH OF VIRGINIA 0402.017717
RHODE ISLAND LICENSE NO. 14416
MASSACHUSETTS 52553

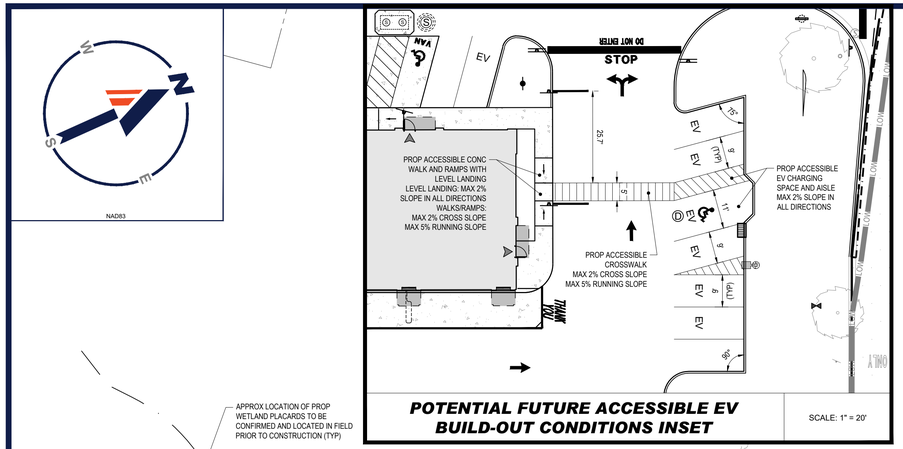
SHEET TITLE:
EXISTING CONDITIONS/ DEMOLITION PLAN

SHEET NUMBER:
C-201

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-4A.----\LAYOUT: C-201 EXDM

JG



POTENTIAL FUTURE ACCESSIBLE EV BUILD-OUT CONDITIONS INSET

SCALE: 1" = 20'

NEW HAMPSHIRE SITE NOTES

(Rev. 5/2024)

1. WHEN APPLICABLE, OWNER/ OPERATOR MUST FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE AND/OR REQUIRED TIME FRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES MUST NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED FROM GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN). THE CONTRACTOR MUST STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
2. ALL CONCRETE MUST BE AIR ENTRAINED AND INCLUDE THE MINIMUM COMPRESSIVE STRENGTH OF JURISDICTIONAL STANDARD PSI AT 28 DAYS (OR 4,000 PSI) UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLANS, DETAILS AND GEOTECHNICAL REPORT THEN THE GEOTECHNICAL REPORT SHALL GOVERN.
3. THE CONTRACTOR MUST FILE SITE SIGNAGE APPLICATION OR PERMIT UNDER SEPARATE APPLICATION UNLESS DONE SO AS PART OF JURISDICTIONAL PERMITTING PROCEDURES.
4. THE CONTRACTOR MUST REPAIR OR REPLACE, AT THE CONTRACTOR'S SOLE COST AND EXPENSE, ALL SIDEWALKS, CURBS, PAVEMENT MARKINGS, AND PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES WHETHER SPECIFIED ON THIS PLAN OR NOT.
5. WORK WITHIN THE RIGHT-OF-WAY MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS AND STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DEPARTMENT, HIGHWAY DIVISION, AND/OR STATE DOT HIGHWAY DEPARTMENT.
6. WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL WIDTHS DO NOT REPRESENT THE ACTUAL WIDTH OF THE PROPOSED WALL, RATHER THEY ARE AN ASSUMPTION BASED ON WALL TYPE AND WALL HEIGHT. WALL FOOTINGS AND /OR FOUNDATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT AN APPROPRIATELY LICENSED PROFESSIONAL DESIGNS ALL WALLS SHOWN HEREON AND PRIOR TO CONSTRUCTION. REFER TO GRADING NOTES REGARDING RETAINING WALL DESIGN.
7. CONTRACTOR IS CAUTIONED OF EXISTING UTILITY SERVICES TO REMAIN IN PROXIMITY TO PROPOSED BOLLARDS AND SIGNS. CONTRACTOR SHALL PROVIDE FIELD MODIFICATION LOCATIONS OF BOLLARDS AND BOLLARDS WITH SIGNAGE AS NEEDED TO AVOID CONFLICTS WITH EXISTING UTILITY SERVICES TO REMAIN.

PAVEMENT STRIPING LEGEND

4"/DYSL = 4" DOUBLE YELLOW SOLID LINE
6"/SYSL = 6" SINGLE YELLOW SOLID LINE
8"/SYSL = 8" SINGLE YELLOW SOLID LINE
4"/SWSL = 4" SINGLE WHITE SOLID LINE

ZONING TABLE

ZONE: COMMERCIAL (C) DISTRICT & RESIDENTIAL-COMMERCIAL MIXED USE (RCM) OVERLAY DISTRICT
USE: EATING AND DRINKING ESTABLISHMENT WITH DRIVE-THROUGH SERVICE
MAP: H LOT: 4-3

APPLICANT/ OWNER INFORMATION

APPLICANT:	McDONALD'S USA, LLC 110 N CARPENTER ST CHICAGO, IL 60607
PROPERTY OWNER:	VC DOVER INVESTMENTS LLC 48 CONSTITUTION DR BEDFORD, NH 03110

BULK REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN LOT AREA	§ 170-11	20,000 SF	±54,341 SF	±83,463 SF
MIN LOT FRONTAGE	§ 170-11	125'	±483.6'	±553.2'
MIN YARD SETBACKS				
FRONT YARD	§ 170-11	30'	N/A	±90.3'
SIDE YARD	§ 170-11	12'	N/A	±75.1'
REAR YARD	§ 170-11	15'	N/A	N/A
MAX PERMITTED HEIGHT	§ 170-11	40'	N/A	±22.0'
MAX LOT COVERAGE	§ 170-11	50.0%	1.7%	42.9%
MIN PARKING SETBACKS				
FRONT	§ 170-11	25'	N/A	±30.1'
SIDE	§ 170-11	25'	N/A	±25.0'

KEY = VARIANCE REQUIRED

PARKING REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN STALL SIZE	§ 153.14	9' X 19.5'	N/A	9' X 19.5'
MIN AISLE WIDTH	§ 153.14	20'	N/A	20'
MAX NUMBER OF STALLS	§ 153.14	14	N/A	37 (1)
REQUIRED PARKING: RETAIL/SERVICE USE: (1 SPACE / 275 SF) X 3,694 SF = 13.4 = 14 SPACES				

KEY = VARIANCE REQUIRED

(1) - CONDITIONAL USE PERMIT REQUIRED

CITY OF DOVER COMMON SITE PLAN NOTES

1. THE INTENT OF THIS PLAN IS TO PROVIDE PERMIT LEVEL PLANS FOR A NEW 3,694 SF McDONALD'S RESTAURANT WITH DRIVE-THRU ALONG WITH NEW PARKING AREAS, LANDSCAPING, AND UTILITIES.
2. OWNERS OF RECORD ARE: VC DOVER INVESTMENTS, LLC.
   48 CONSTITUTION DR
   BEDFORD, NH, 03110

   _____
   AUTHORIZED SIGNATURE
3. THE PARCEL IS SHOWN AS LOT NO. 4-3, MAP H OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL CONTAINS 1.92 ACRES OR 83,463 SQ. FT. AREA OF LAND.
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 3496, PAGE NO. 733.
6. REFERENCE PLANS:
   - "ALTA/NSPS LAND TITLE SURVEY" PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED 07/10/2024
   - ARCHITECTURAL PLANS PREPARED BY CORE STATES GROUP, DATED 10/01/2024
   - "AMENDED CONDOMINIUM SITE PLAN" PREPARED BY TF MORAN, INC., DATED 09/05/2024
7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE. **NOT APPLICABLE**
8. REFER TO ZONING TABLE THIS SHEET FOR CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS IN EFFECT.
9. THE FOLLOWING CONDITIONAL USE PERMITS ARE BEING SOUGHT THROUGH THE PLANNING BOARD:
   - ENVIRONMENTAL CONDITIONAL USE PERMIT FOR PROPOSED RE-CONTOURING OR GRADING OF LAND WITHIN THE 50' WETLAND BUFFER WITHIN THE WETLAND PROTECTION DISTRICT [170-28.G.(1)(D)].
   - NON-ENVIRONMENTAL CONDITIONAL USE PERMIT TO INCREASE THE NUMBER OF PROPOSED PARKING SPACES PERMITTED FOR THE PROPOSED USE [153-14.D.(5)(A)].
10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM ALTA/NSPS LAND TITLE SURVEY, PREPARED BY CONTROL POINT ASSOCIATES, INC. DATED 07/10/2024.
11. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0320E, EFFECTIVE DATE: SEPTEMBER 30, 2015).
12. WETLANDS WERE DELINEATED BY DAMON E. BURT, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER #163, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, ON 9/2/2022.
13. AS-BUILT PLANS OF THE SUBDIVISION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT IF A STREET IS PROPOSED FOR CITY ACCEPTANCE. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
14. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
15. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
16. 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.
17. REFER TO SHEET C-802 FOR EROSION CONTROL NOTES INCLUDING PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS; RATES OF TIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
18. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.
19. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
20. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
21. 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.
22. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY AND SUNDAY 9 AM-4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
23. BUILDING ADDRESS SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
24. THE PROPOSED USE FOR THE SITE IS A MCDONALD'S RESTAURANT WITH DRIVE-THROUGH SERVICE.
25. THE FOLLOWING FEDERAL AND STATE PERMITS FOR THE SUBJECT PROPERTY ARE BEING SOUGHT AT THE TIME OF THIS SUBMISSION: NHDOT DRIVEWAY PERMIT #A-0000000841
26. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
27. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
28. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
29. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL https://www.unh.edu/unhsc/ptapp
30. 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.
31. FIRE DEPARTMENT ACCESS ROADS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
32. THE MAXIMUM PARKING SPACE CALCULATION IS (1 SPACE / 275 SF) X 3,694 SF = 13.4 = 14 SPACES AND 37 SPACES ARE PROVIDED.
33. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
34. TOPOGRAPHIC SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC. ON 6/19/2024.
35. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
36. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
37. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
38. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81-30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES. **NOT APPLICABLE**
39. 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. **NOT APPLICABLE**
40. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES. **NOT APPLICABLE**
41. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGULATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

MAINTENANCE OF A CLEAR SIGHT LINE IS THE RESPONSIBILITY OF THE PROPERTY OWNER

THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
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PROJECT NO.: MAA240177.00-4A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUDICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 52553
NEW HAMPSHIRE LICENSE NO. 18476
CONNECTICUT LICENSE NO. 30177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C-301

REVISION 4 - 07/02/2025

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NAD83

CIELO DRIVE

GRAPEVINE DRIVE

MAP H
LOT 4-3-0
30 GRAPEVINE DRIVE
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733

MAP H
LOT 4-3-0
N/F LANDS OF VC DOVER INVESTMENTS, LLC. BK. 3496, PG. 733

MAP H
LOT 2-0-0
275 DURHAM ROAD
N/F LANDS OF
CITY OF DOVER
BK. 1966, PG. 647

MAP H
LOT 4-1-0
217 DURHAM ROAD
N/F LANDS OF
TORR SCOTT A &
RENEE L TRUSTEES
BK. 4928, PG. 824

COMMERCIAL (C) DISTRICT

RURAL RESIDENTIAL (R-40) DISTRICT

DURHAM ROAD

FARMINGTON DRIVE

DEERFIELD DRIVE

DEERFIELD DRIVE

TIMROD ROAD

CHARTERGRANT ROAD

MAP I
LOT 22-0-158
14 FARMINGTON DRIVE
N/F LANDS OF
PRESCOTT ROBIN
BK. 4766, PG. 713

MAP I
LOT 22-0-11
16 FARMINGTON DRIVE
N/F LANDS OF
STEWART DARALYN A
BK. 4155, PG. 386

MAP I
LOT 22-0-159
18 FARMINGTON DRIVE
N/F LANDS OF
WALERYSZAK MICHAEL S &
WALERYSZAK LINDSAY L
BK. 3934, PG. 13

MAP I
LOT 22-0-9
20 FARMINGTON DRIVE
N/F LANDS OF
CARSON DIANNE E
BK. 5078, PG. 181

MAP I
LOT 22-0-8
22 FARMINGTON DRIVE
N/F LANDS OF
BECKER RITA MARIE
TRUSTEE
BK. 4702, PG. 25

MAP I
LOT 22-0-7
24 FARMINGTON DRIVE
N/F LANDS OF
GLIDDEN JAMES R &
GLIDDEN LYNNETTE M
BK. 3164, PG. 665

MAP I
LOT 22-0-162
26 FARMINGTON DRIVE
N/F LANDS OF
GOODMAN SUSAN A
BK. 3102, PG. 667

MAP I
LOT 22-0-5
28 FARMINGTON DRIVE
N/F LANDS OF
SIRACUSA HILLMAN
BENJAMIN T ESQ TRUSTEE
BK. 4434, PG. 422

MAP I
LOT 22-0-2
2 DEERFIELD DRIVE
N/F LANDS OF
SHAFFER PRESTON
& SHAFFER ANITA
BK. 4732, PG. 875

MAP I
LOT 22-0-193
4 DEERFIELD DRIVE
N/F LANDS OF
MANHA SUSAN J
BK. 4420, PG. 563

MAP I
LOT 22-0-197
6 DEERFIELD DRIVE
N/F LANDS OF
LEMIEUX MARY M TRUSTEE
BK. 5203, PG. 460

MAP I
LOT 22-0-127
2 CHARTERGRANT ROAD
N/F LANDS OF
STORY JOHN & CAROL TRUSTEES
BK. 4003, PG. 229

MAP I
LOT 22-0-12
17 FARMINGTON DRIVE
N/F LANDS OF
COLFORD DONALD
BK. 4796, PG. 697

MAP I
LOT 22-0-160
19 FARMINGTON DRIVE
N/F LANDS OF
GERTIG JOHN K &
MOULTON-GERTIG
SUZANNE L
BK. 4152, PG. 992

MAP I
LOT 22-0-14
21 FARMINGTON DRIVE
N/F LANDS OF
LANE DEBRA A & LANE
MICHAEL I
BK. 4390, PG. 270

MAP I
LOT 22-0-161
23 FARMINGTON DRIVE
N/F LANDS OF
WINSLOW WILLIAM
BK. 3964, PG. 128

MAP I
LOT 22-0-22
2 TIMROD ROAD
N/F LANDS OF
SHEARER IRENE D
BK. 4241, PG. 988

MAP I
LOT 22-0-183
29 FARMINGTON DRIVE
N/F LANDS OF
WALSH JUDITH E
TRUSTEE
BK. 4065, PG. 868

MAP I
LOT 22-0-1
1 DEERFIELD DRIVE
N/F LANDS OF
SENNOTT ANDREA L
TRUSTEE
BK. 5096, PG. 56

MAP I
LOT 22-0-166
8 DEERFIELD DRIVE
N/F LANDS OF
TALON MICHAEL L &
TALON GINA M
BK. 3828, PG. 958

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY

40 20 10 0 40
SCALE: 1" = 40'

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBIT\EXHIBIT A\P-EXHA-PROP-MAA240177.00-0A.----LAYOUT: C-302 EXHA

BOHLER
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LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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PROJECT No.:	MAA240177.00-0A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-EXHA-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
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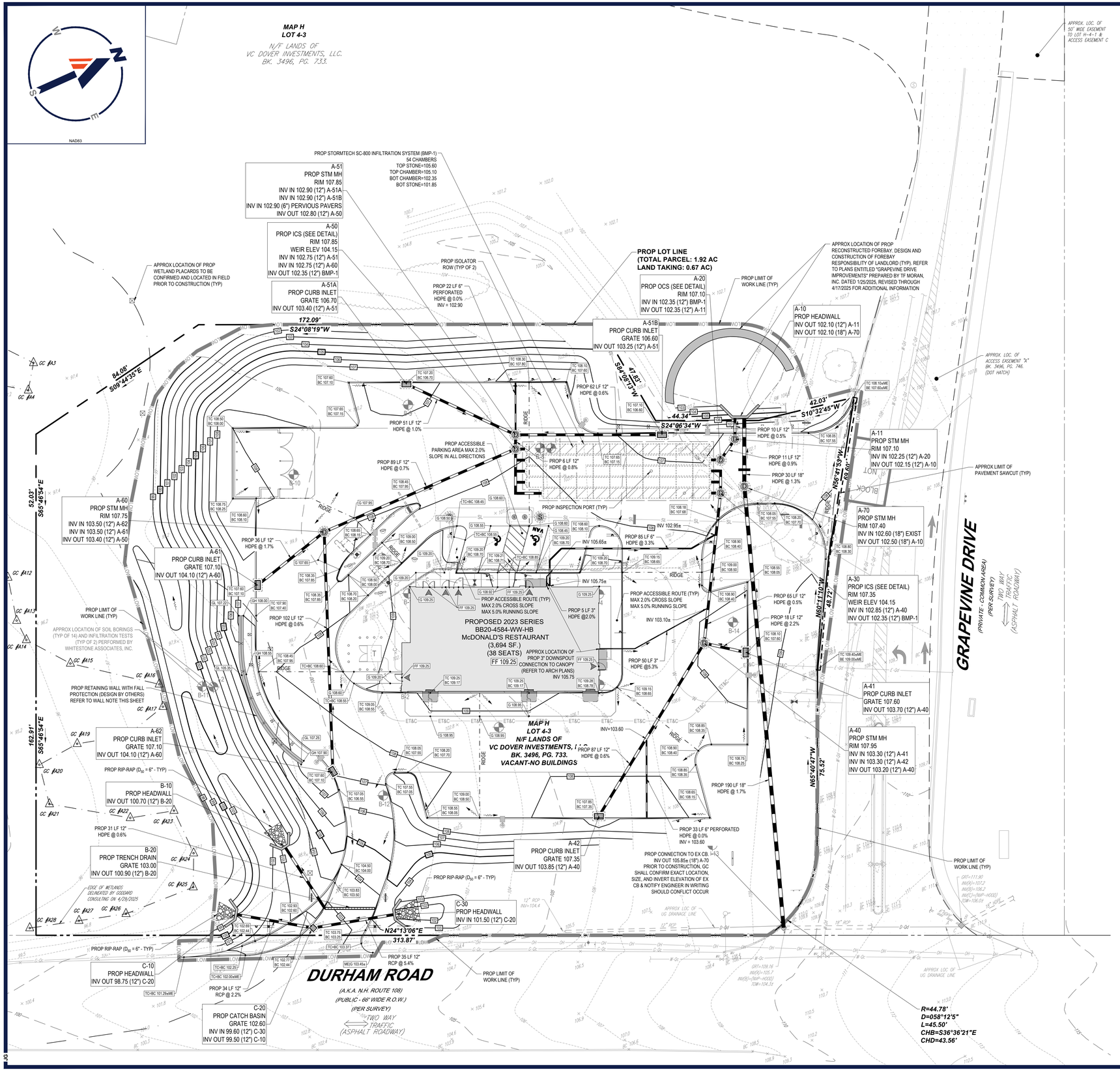
SHEET TITLE:

NEIGHBORHOOD PLAN

SHEET NUMBER:

C-302

REVISION 4 - 07/02/2025



NEW HAMPSHIRE GRADING NOTES

(Rev. 5/2024)

1. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE PAVEMENT GRADE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR MUST CONFIRM AND ENSURE THAT AS CONSTRUCTED IMPROVEMENTS CREATE THE FOLLOWING MINIMUM SLOPES (EXCEPT WHERE ADA REQUIREMENTS LIMIT THEM): 1.0% ON ALL CONCRETE SURFACES, 1.5% ON ASPHALT SURFACES, 1.5% IN LANDSCAPED AREAS AND 0.75% SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS TO PROVIDE POSITIVE DRAINAGE.
3. WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL ELEVATIONS (GH & GL) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF THE TOP AND THE BOTTOM OF THE WALL AND DO NOT REPRESENT THE OVERALL HEIGHT OF THE WALL TO ITS EXTENTS (I.E. ANY CAP UNITS OR COURSES BELOW GRADE INCLUDING FOOTINGS ARE EXCLUDED). WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT THERE ARE NO UTILITIES ON THE PASSIVE SIDE OF THE RETAINING WALL. NO EXCAVATION MAY BE PERFORMED ON THE PASSIVE SIDE OF THE RETAINING WALL WITHOUT APPROPRIATELY AND SAFELY SUPPORTING THE WALL IN ACCORDANCE WITH THE STANDARD OF CARE AND ALL APPLICABLE RULES, REGULATIONS, CODES, ORDINANCES, LAWS AND STATUTES.
4. MSE OR GRAVITY BLOCK WALLS SHALL BE CONSTRUCTED SUCH THAT UPON COMPLETION OF CONSTRUCTION THERE IS NO UNFINISHED SURFACE OR LIFTING RINGS VISIBLE (E.G. USE OF FINISHED TOP BLOCK OR CAP STONES)
5. STORMWATER RUNOFF WITHIN PROPERTY MUST BE COLLECTED ON-SITE WITH NO OVERLAND RUNOFF ONTO THE RIGHT-OF-WAY OR ADJACENT PROPERTIES TO THE MAXIMUM EXTENT POSSIBLE OR IN THE MANNER SHOWN ON THE CONSTRUCTION DRAWINGS. STORMWATER RUNOFF ONTO ADJACENT PROPERTIES SHALL BE CONTROLLED AS TO NOT ADVERSELY IMPACT SAID PROPERTIES.
6. BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.
7. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL ADA GUIDELINES AND REQUIREMENTS.
8. FOR ALL RETAINING WALLS 4 FEET OR GREATER IN HEIGHT:
   - 8.1. THE OWNER OR THE OWNER'S CONTRACTOR IS TO PROVIDE A SITE-SPECIFIC RETAINING WALL DESIGN PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED (E.G. STRUCTURAL ENGINEER) IN THE STATE WHERE THE CONSTRUCTION OCCURS. SOIL TYPES, WATER TABLE ELEVATION, EXISTING & PROPOSED SURROUNDING IMPROVEMENTS/CONDITIONS (INCLUDING BUT NOT LIMITED TO SLOPES, DRIVE AISLES, ROADS, FENCING, GUIDERAILS, UTILITIES, DRAINAGE FACILITIES, STRUCTURES, FOUNDATIONS), LIVE LOADS AND OTHER SITE AMENITIES THAT COULD HAVE AN INFLUENCE OR IMPACT ON THE RETAINING WALL(S) CONSTRUCTABILITY AND/OR LONGEVITY SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN AS WELL AS THE GLOBAL STABILITY ANALYSIS.
   - 8.2. PEER REVIEW AND GLOBAL STABILITY ANALYSIS OF THE RETAINING WALL DESIGN MUST BE COMPLETED BY THE OWNER'S GEOTECHNICAL ENGINEER TO CERTIFY THE DESIGN MEETS INDUSTRY STANDARDS FOR FACTOR OF SAFETY. SOIL TYPES, WATER TABLE ELEVATION AND DESIGN PROPERTIES AS NOTED ABOVE SHALL BE FIELD CONFIRMED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO WALL CONSTRUCTION.
9. CONTRACTOR SHALL INSTALL CONCRETE CURB ALONG FACE OF BUILDING / WALL AS SHOWN TO PROVIDE CONSISTENT WIDTH ALONG LENGTH OF PROPOSED ACCESSIBLE RAMP AND RAMP LANDING TO MEET ADA/AAB REQUIREMENTS.
10. CONTRACTOR SHALL REVIEW RETAINING WALL LOCATIONS VERSUS APPLICABLE STATE AND LOCAL CODES AND PROVIDE FALL PROTECTION (E.G. FENCING OR RAILING) IN ACCORDANCE WITH SAID CODE.
11. CONTRACTOR SHALL COORDINATE WITH OWNER/OPERATOR TO REVIEW EXISTING DEPRESSIONS WITHIN EXISTING PAVEMENT AREAS TO REMAIN AND SHALL CONFIRM THAT THE SCOPE OF WORK SHALL PROVIDE POSITIVE DRAINAGE BY FIXING ANY EXISTING AREAS OF PONDING.
12. BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.

NEW HAMPSHIRE DRAINAGE NOTES

(Rev. 1/2023)

1. WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY, UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE, MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE, MARK TERMINUS LOCATIONS WITH A 2X4 STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUBS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
2. STORM AND SANITARY PIPE LENGTHS INDICATED ARE NOMINAL AND ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS INDICATED ON THE PLANS OTHERWISE.
3. UNLESS CLEARLY INDICATED OTHERWISE, ALL STORM PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT/SOIL TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO AASHTO M252 FOR PIPES 4" TO 10" AND TO AASHTO M294 FOR PIPES 12" TO 60" AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT/SOIL TIGHT JOINT. PIPE FOR ROOF DRAIN CONNECTION MUST BE SDR 26 PVC OR SCHEDULE 40 UNLESS INDICATED OTHERWISE. HDPE PIPE JOINT GASKETS MUST BE PROVIDED AND CONFORM TO ASTM F477. DRAIN PIPE INSTALLED WITH OVER TEN (10) FEET OVER COVER AND/OR IN HIGH GROUNDWATER CONDITIONS SHALL BE SANITITE HP POLYPROPYLENE PIPE (PP), OR APPROVED EQUIVALENT.

RETAINING WALL NOTE #1

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER FOR ALL RETAINING WALLS AND HEADWALLS. THIS MAY INCLUDE, BUT NOT LIMITED TO, A GLOBAL STABILITY ANALYSIS. REFER TO SHEET C-102 FOR ADDITIONAL NOTES REGARDING RETAINING WALL DESIGN.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

THIS PLAN TO BE UTILIZED FOR SITE GRADING AND DRAINAGE PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

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NEW HAMPSHIRE LICENSE NO. 16476
COMMONWEALTH OF VIRGINIA NO. 0402057177
RHODE ISLAND LICENSE NO. 8118
MAINE LICENSE NO. 12553

SHEET TITLE:

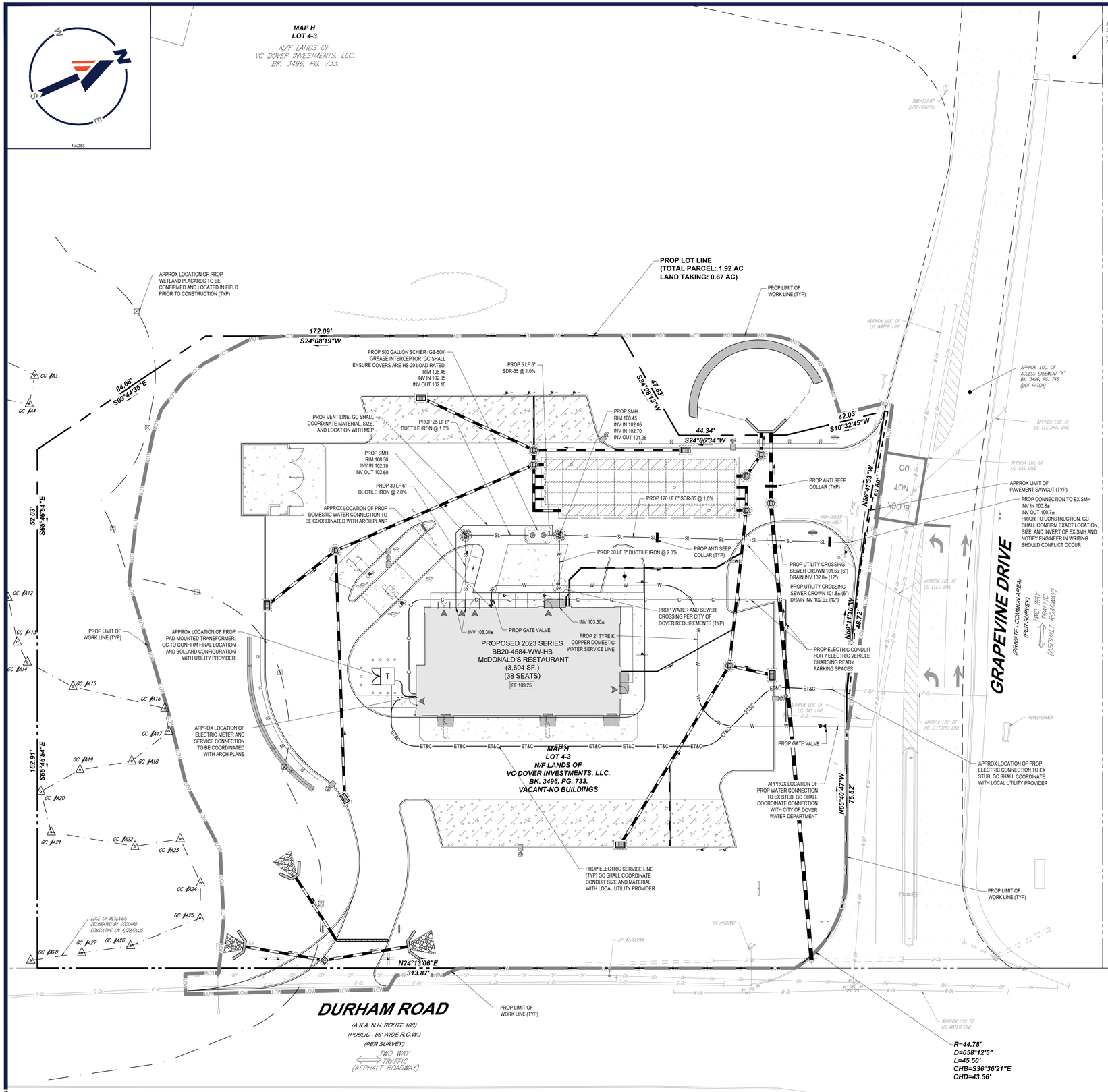
GRADING AND DRAINAGE PLAN

SHEET NUMBER:

C-401

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-PROP-MAA240177.00-4A-----LAYOUT: C-401 GRDR
JG



NEW HAMPSHIRE UTILITY NOTES

(Rev. 7/2024)

1. THE CONTRACTOR'S PRICE FOR WATER AND SEWER SERVICE INSTALLATIONS MUST INCLUDE ALL FEES, COSTS, AND APPURTENANCES REQUIRED BY THE UTILITY PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK) TO PROVIDE FULL AND COMPLETE WORKING SERVICE, INCLUDING (BUT NOT LIMITED TO) NECESSARY FEES, TESTING, DISINFECTING, INSPECTIONS, ROAD OPENING & BACKFILL REQUIREMENTS, TRAFFIC CONTROL AND SURETY BONDS AS DEFINED BY THE PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK).
2. ALL WORK ASSOCIATED WITH UTILITY POLES, OVERHEAD WIRES AND ANY/ALL APPURTENANCES SHALL BE COORDINATED BY THE GC WITH THE LOCAL UTILITY COMPANIES PRIOR TO THE ORDERING OF ANY MATERIALS. THIS MAY INCLUDE BUT IS NOT LIMITED TO THE REMOVAL, INSTALLATION, RELOCATION OR PROTECTION OF ANY BRACING, GUY WIRES, OVERHEAD WIRES, ETC. AS MAY BE REQUIRED TO ACCOMMODATE THE PROJECT.
3. SEWERS CONVEYING SANITARY FLOW, OR INDUSTRIAL FLOW MUST BE SEPARATED FROM WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY. IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE PIPES MUST, AT A MINIMUM, BE IN SEPARATE TRENCHES WITH THE AT LEAST 18 INCHES OF VERTICAL SEPARATION FROM THE BOTTOM OF THE WATER MAIN TO THE TOP OF THE SEWER LINE. WHERE APPROPRIATE SEPARATION FROM A WATER MAIN IS NOT POSSIBLE, THE SEWER MUST BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRON PIPE USING MECHANICAL OR SLIP-ON JOINTS FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING. IN ADDITION, ONE FULL LENGTH OF SEWER PIPE SHOULD BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE A WATER MAIN CROSSES UNDER A SANITARY SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SANITARY SEWER MUST BE PROVIDED. ALL CROSSINGS SHALL BE IN ACCORDANCE WITH JURISDICTIONAL PERMITTING/UTILITY AUTHORITIES REGULATIONS.
4. WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY, UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE, MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE, MARK TERMINUS LOCATIONS WITH A 2X4 STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUBS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
5. UNLESS INDICATED OTHERWISE, ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC., MUST BE INSTALLED UNDERGROUND. ALL NEW UTILITY SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
6. SANITARY PIPE MUST BE POLYVINYL CHLORIDE (PVC) SDR 35 EXCEPT WHERE CLEARLY INDICATED OTHERWISE. SANITARY LATERAL(S) MUST BE PVC SDR 26 UNLESS CLEARLY INDICATED OTHERWISE.
7. UNLESS CLEARLY INDICATED OTHERWISE ALL SANITARY PIPE MUST BE:
   - 7.1. FOR PIPES LESS THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 35 PER ASTM D3034.
   - 7.2. FOR PIPES GREATER THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 26 PER ASTM D3034.
   - 7.3. UNLESS LOCAL OR STATE BUILDING / PLUMBING CODE CLEARLY SPECIFIES DIFFERENTLY, SANITARY LATERALS MUST BE PVC SDR 26.
   - 7.4. FOR ALL UTILITY PIPING (INCLUDING DRAIN) WITHIN 10 FT OF A BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES. CONTRACTOR SHALL REFER TO PLUMBING ENGINEERING PLANS AND VERIFY PIPE MATERIAL WITH LOCAL OFFICIAL PRIOR TO ORDERING OF MATERIALS.
   - 7.5. CONTRACTOR SHALL VERIFY THE CONNECTION OF EXTERIOR PIPING TO ANY FIXTURES (SUCH AS AN EXTERIOR GREASE INTERCEPTOR) OR OTHER DRAINAGE SYSTEMS WITH LOCAL OFFICIALS FOR COMPLIANCE WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES PRIOR TO ORDERING OF MATERIALS.
8. WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER COMPANY. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF APPLICATION.
9. GAS METERS MUST BE PROTECTED AS REQUIRED BY THE JURISDICTIONAL GAS PROVIDER.
10. TRANSFORMERS AND SWITCH GEARS: GC SHALL PROVIDE ALL APPURTENANCES IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS AND CARRY SAME IN BASE BID. APPURTENANCES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE CONCRETE PAD, SECONDARY SPILL CONTAINMENT AREAS (IF REQUIRED), BOLLARD / VEHICULAR PROTECTION, AND OTHER ITEMS AS MAY BE REQUIRED BY THE UTILITY PROVIDER FOR INSTALLATION OF THE TRANSFORMER AND SWITCH GEAR (IF REQUIRED). GC SHALL COORDINATE ALL ASPECTS OF INSTALLATION WITH UTILITY PROVIDER PRIOR TO ORDERING OF MATERIALS AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS IN WRITING.

TRANSFORMER NOTE:

GC SHALL PROVIDE ALL APPURTENANCES IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS AND CARRY SAME IN BASE BID. APPURTENANCES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE CONCRETE PAD, SECONDARY SPILL CONTAINMENT AREAS (IF REQUIRED), BOLLARD / VEHICULAR PROTECTION, AND OTHER ITEMS AS MAY BE REQUIRED BY THE UTILITY PROVIDER FOR INSTALLATION OF THE TRANSFORMER. GC SHALL COORDINATE ALL ASPECTS OF INSTALLATION WITH UTILITY PROVIDER PRIOR TO ORDERING OF MATERIALS AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS IN WRITING.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

THIS PLAN TO BE UTILIZED FOR UTILITIES PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUDICH
LICENSED PROFESSIONAL ENGINEER
KUDICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 49838
NEW HAMPSHIRE LICENSE NO. 16476
CONNECTICUT LICENSE NO. 32177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553
ORIGINAL SIGNATURE & SEAL

SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

C-501

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-4A-----%LAYOUT: C-501 UTIL

NADB3

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

47.83'
S84°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

LIMIT OF PROP SILT FENCE

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 5496, PG. 746. (DOT HATCH)

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

DO NOT BLOCK

N85°41'53"W
78.07'

PERIMETER CONTROLS ARE OFFSET FROM LOW FOR CLARITY PURPOSES (TYP)

52.03'
S65°46'54"E

PROP SILT FENCE (TYP)

PROP STABILIZED CONSTRUCTION ENTRANCE

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

AREA OF DISTURBANCE =
±75,194 SF (1.73 AC)

PROP TREE PROTECTION FENCE

LIMIT OF PROP SILT FENCE

N60°11'10"W
48.72'

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

162.91'
S65°46'54"E

APPROX LOCATION OF PROP TEMPORARY SOIL STOCKPILE AREA SURROUNDED BY STRAW BALES AND SILT FENCE

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

PROP TREE PROTECTION FENCE

PROP SILT FENCE (TYP)

N65°40'41"W
75.52'

PROP STABILIZED CONSTRUCTION EXIT. CONSTRUCTION EXIT SHALL BE RESTRICTED TO RIGHT-OUT ONLY. MAIN ACCESS FOR ALL CONSTRUCTION VEHICLES SHALL BE VIA GRAPEVINE DRIVE.

PROP INLET PROTECTION (TYP)

PROP LIMIT OF WORK LINE (TYP)

EDGE OF WETLANDS DELINEATED BY GOODARD CONSULTING ON 4/28/2025

N24°13'06"E
313.07'

LIMIT OF PROP SILT FENCE

PROP LIMIT OF WORK LINE (TYP)

LIMIT OF PROP SILT FENCE

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

GC #A3
GC #A4
GC #A12
GC #A13
GC #A14
GC #A15
GC #A16
GC #A17
GC #A18
GC #A19
GC #A20
GC #A21
GC #A22
GC #A23
GC #A24
GC #A25
GC #A26
GC #A27
GC #A28

MAIN ACCESS FOR ALL CONSTRUCTION VEHICLES SHALL BE VIA GRAPEVINE DRIVE. ACCESS VIA NH 108 (DURHAM ROAD) DRIVEWAY SHALL BE RESTRICTED TO RIGHT OUT ONLY.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGULATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

THIS PLAN TO BE UTILIZED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-4A-----1A LAYOUT, C-801 EROS

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
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J.A. KUDICH
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SHEET TITLE:

SOIL EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:

C-801

REVISION 4 - 07/02/2025

NEW HAMPSHIRE EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PERMANENTLY STABILIZED WITHIN 14 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
3. SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 8%.
4. INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
8. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
    a) SIX INCHES, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
    b) APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SF).
    c) FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUE-GRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS: SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN. QUALITY SOD MAY BE SUBSTITUTED FOR SEED WHERE SLOPES DO NOT EXCEED 2:1, SOD ON SLOPES STEEPER THAN 3:1 SHOULD BE PEGGED.
    d) STRAW MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER WILL BE USED ON STRAW MULCH FOR WIND CONTROL.
11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
12. WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
13. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
14. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED:

LOCATION	MULCH	MULCH RATE (1000 SF)
PROTECTED AREA	STRAW	100 POUNDS
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS	185-275 POUNDS
	STRAW (ANCHORED)*	100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

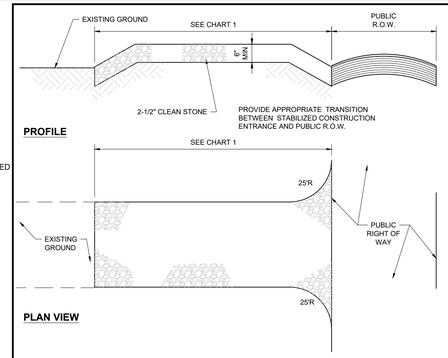
* A HYDRO-APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.

* MULCH ANCHORING: ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK. WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

15. PROPOSED LOCATIONS OF SURFACE STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION.SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
    a) TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA WITH A MAXIMUM TRIBUTARY AREA OF 5 ACRES, MAINTAIN A 2:1 LENGTH TO WIDTH RATIO, AND NOT EXCEED 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE SCARIFIED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED AND STABILIZED IN ACCORDANCE WITH THE GRADING AND LANDSCAPE PLANS.
16. STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
17. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
18. THE CONTRACTOR MUST PERFORM DEWATERING (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS ASSOCIATED WITH SAME.
19. THE CONTRACTOR MUST LOCATE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT AND MAKE SAME CONTINUOUSLY AVAILABLE ON-SITE FOR USE BY THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.
20. EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
21. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
22. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.
23. CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
24. AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
25. FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED. IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 200-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WORK HAS CEASED FOR MORE THAN 14 DAYS UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
26. MULCHING REQUIREMENTS:
    a) BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
    b) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
    c) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
27. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
28. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)
- INSTALLATION OF EROSION CONTROL BARRIER (STRAW BALES AND SILT FENCE) (AS SHOWN)
- INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)
- DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)
- DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)
- CLEARING AND GRUBBING
- EARTHWORK AND EXCAVATION/FILLING AS NECESSARY
- CONSTRUCTION OF UTILITIES
- STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING
- INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES (AS SHOWN)
- CONSTRUCTION OF BUILDINGS
- CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS
- SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH
- FINAL GRADING OF ALL SLOPED AREAS
- PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.
- PAVE PARKING LOT
- LANDSCAPING PER LANDSCAPING PLAN
- REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER



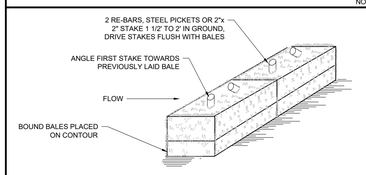
PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

CHART 1

STABILIZED CONSTRUCTION ENTRANCE

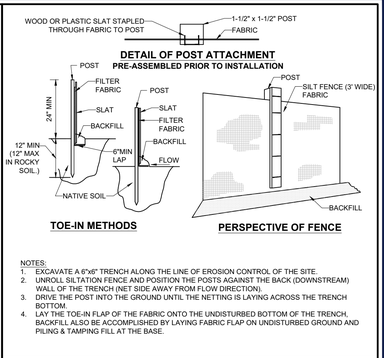
NOT TO SCALE (NE-O020101 - 09/2023)



NOTES:
1. BALES SHALL BE PLACED AT THE TOP OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.
5. DRAINAGE AREA NO MORE THAN ¼ AC. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%.
6. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

SILT FENCE

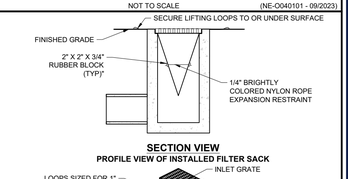
NOT TO SCALE (NE-O040101 - 09/2023)



NOTES:
1. EXCAVATE A 6"x6" TRENCH ALONG THE LINE OF EROSION CONTROL OF THE SITE.
2. UNROLL SILTATION FENCE AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM FLOW DIRECTION).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS LAYING ACROSS THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF THE FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL ALSO BE ACCOMPLISHED BY LAYING FABRIC FLAP ON UNDISTURBED GROUND AND PILING & TAMPING FILL AT THE BASE.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	130 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

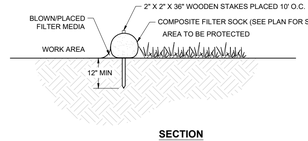
NOTES:
1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.



OR APPROVED EQUIVALENT

STRAW BALE BARRIER

NOT TO SCALE (NE-O030302 - 09/2023)



NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS
2. COMPOST FILTER SOCK FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE AT COMPLETION OF CONSTRUCTION OR AS DIRECTED BY OWNER AFTER STABILIZATION IS ACHIEVED.

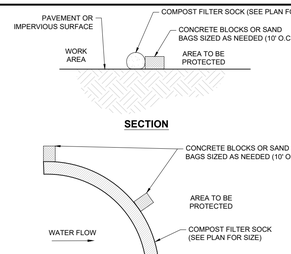
OR APPROVED EQUIVALENT

COMPOST FILTER SOCK

NOT TO SCALE (NE-O040201 - 09/2023)

INLET PROTECTION WITH MANUFACTURED INSERT

NOT TO SCALE (NE-O050101 - 09/2023)

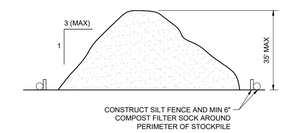


NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. FILTER MEDIA TO MEET APPLICATION REQUIREMENTS.
3. FILTER MEDIA TO BE DISPERSED ON SITE AT COMPLETION OF CONSTRUCTION AFTER STABILIZATION IS ACHIEVED. AS DETERMINED BY ENGINEER IN OWNER

OR APPROVED EQUIVALENT

COMPOST FILTER SOCK IN PAVED CONDITION

NOT TO SCALE (NE-O040202 - 09/2023)

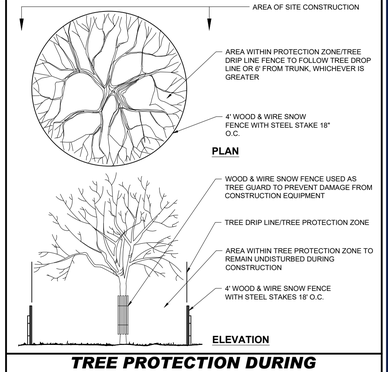


TEMPORARY STOCK PILE WITH SILT FENCE AND FILTER SOCK

NOT TO SCALE (NE-O060102 - 09/2023)

TREE PROTECTION DURING SITE CONSTRUCTION

NOT TO SCALE (NE-O030201 - 09/2023)



BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

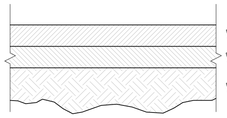
J.A. KUDICH
PROFESSIONAL ENGINEER
MASS. CIVIL REGISTRATION NO. 49538
NEW HAMPSHIRE LICENSE NO. 17476
COMMONWEALTH OF VIRGINIA NO. 0402057177
RHODE ISLAND LICENSE NO. 16616
MAINE LICENSE NO. 12553

SHEET TITLE:
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SHEET NUMBER:
C-802

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\C-ADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-4A-----1A_LAYOUT, C-802 EROD

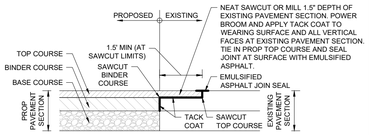


1. BIT. CON. TOP COURSE (LIGHT DUTY=1.5") (NHDOT "WEARING COURSE")
2. BIT. CONC. BINDER COURSE (LIGHT DUTY=1.5") (NHDOT "BINDER COURSE")
3. GRANULAR SUB-BASE COURSE (LIGHT DUTY=12") (NHDOT 304.3 CRUSHED GRAVEL)

NOTES:
1. PAVEMENT BASE AND SUBBASE COURSES TO CONFORM TO STATE DEPARTMENT OF TRANSPORTATION.
2. GC TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT SPECIFICATIONS.

PAVEMENT SECTION

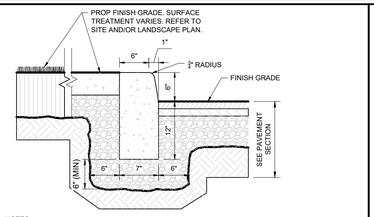
NOT TO SCALE (NE-S010101 - 09/2024) MOD



NOTES:
1. REFER TO GEOTECHNICAL REPORT PREPARED BY WHITESTONE ASSOCIATES, INC. AND DATED 06/11/2024

BITUMINOUS CONCRETE PAVEMENT TIE IN (GRAPEVINE DRIVE)

NOT TO SCALE (NE-S010501 - 08/2024)



NOTES:
1. CURB SHALL CONSIST OF 4,000 PSI AIR ENTRAINED CONCRETE, EXPOSED EDGES TO HAVE RUBBED FINISH, AND SURFACE SHALL BE TREATED WITH A CONCRETE PENETRANT/SEALER.
2. THE ENDS OF CURB SECTIONS SHALL BE CHAMFERED 1/4 INCH.
3. THE CORNERS OF CURB SECTIONS SHALL MATCH THE ADJACENT CURB IN SIZE, COLOR AND FINISH.
4. CURBS, CURB CORNERS OR EDGING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE.
5. EXPANSION JOINTS SHALL BE INSTALLED AT A MAXIMUM OF TWENTY FEET (20') ON CENTER USING PREFORMED EXPANSION JOINT FILLER HAVING A THICKNESS OF ¼ INCH.
6. PAVEMENT SECTION DEPTHS, MATERIAL, AND SPECIFICATIONS PER PAVEMENT SECTION DETAIL.
7. STRAIGHT CURB SECTIONS CAN BE USED FOR RADII 25' OR LESS. OTHERWISE, CURVED CURB LENGTHS SHALL BE INSTALLED AT THE SPECIFIED RADIUS PER THE SITE PLAN.

PRECAST CONCRETE CURB

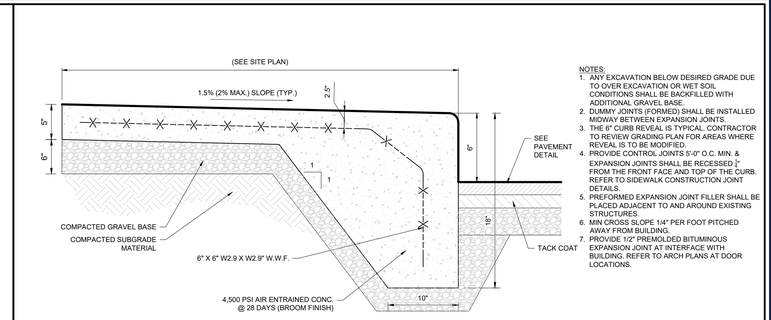
NOT TO SCALE (NE-S020201 - 06/2024)



NOTES:
1. SEE TYPICAL CURB DETAIL AND SITE PLAN FOR CURB TYPE AND TRANSITION CURB LOCATIONS
2. BOTH TOP AND FACE OF CURB TO BE PAINTED YELLOW

PRECAST CONCRETE TRANSITION CURB

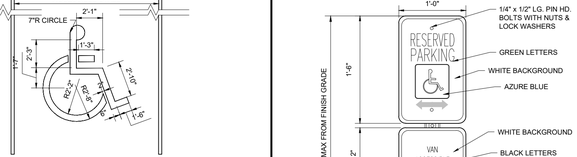
NOT TO SCALE (NE-S020206 - 09/2023) MOD



NOTES:
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH ADDITIONAL GRAVEL BASE.
2. DUMMY JOINTS (FORMED) SHALL BE INSTALLED MIDWAY BETWEEN EXPANSION JOINTS.
3. THE 6" CURB REVEAL IS TYPICAL. CONTRACTOR TO REVIEW GRADING PLAN FOR AREAS WHERE REVEAL IS TO BE MODIFIED.
4. PROVIDE CONTROL JOINTS 5'-0" O.C. MIN. & EXPANSION JOINTS SHALL BE RECESSED ½" FROM THE FRONT FACE AND TOP OF THE CURB. REFER TO SIDEWALK CONSTRUCTION JOINT DETAILS.
5. PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED ADJACENT TO AND AROUND EXISTING STRUCTURES.
6. MIN CROSS SLOPE 1/4" PER FOOT PITCHED AWAY FROM BUILDING.
7. PROVIDE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT AT INTERFACE WITH BUILDING. REFER TO ARCH PLANS AT DOOR LOCATIONS.

MONOLITHIC CURB AND SIDEWALK

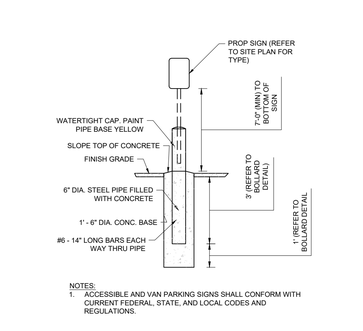
NOT TO SCALE (BE-S030201 - 06/2024)



NOTE: FINAL PAVEMENT SPECIFICATIONS TO BE COORDINATED WITH GEOTECHNICAL REPORT RECOMMENDATIONS. McDONALD'S ENGINEER RESERVES THE RIGHT TO REQUEST A COMPACTION TEST AND/OR A CORE SAMPLE. IF TESTS PROVE CORRECT, PER ABOVE SPECIFICATION, TESTS WILL BE AT THE EXPENSE OF McDONALD'S, OTHERWISE, G.C. WILL BE CHARGED.

CONCRETE & BITUMINOUS CONCRETE PAVING

NOT TO SCALE

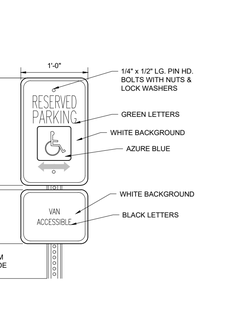


RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
21' - 25'	2'
25' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET 7' BELOW THE TOP OF THE PAVEMENT BASE COURSE.

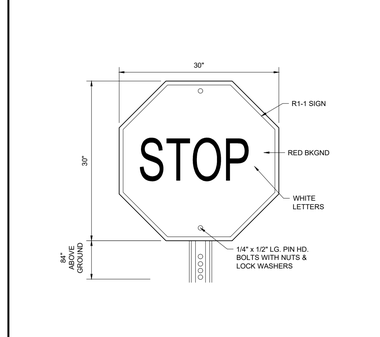
CITY OF DOVER D-8 GRANITE CURB

NOT TO SCALE



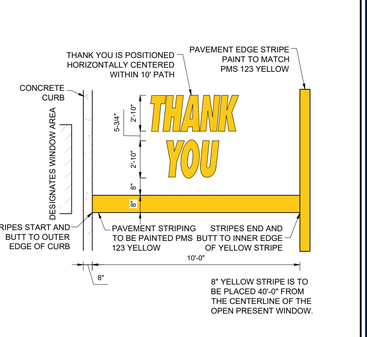
SIDEWALK CONSTRUCTION JOINTS

NOT TO SCALE (BE-S030401 - 08/2023)



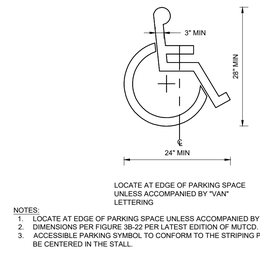
ACCESSIBLE RAMP TYPE B

NOT TO SCALE (NE-S030205 - 09/2023)



STALL STRIPING

NOT TO SCALE

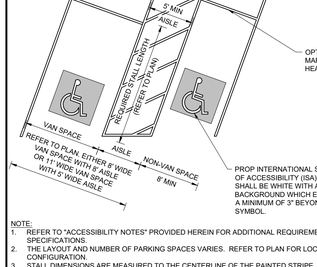


LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING

NOTES:
1. LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING.
2. DIMENSIONS PER FIGURE 3B-22 PER LATEST EDITION OF MUTCD.
3. ACCESSIBLE PARKING SYMBOL TO CONFORM TO THE STRIPING PAINT SPECIFIED AND SHALL BE CENTERED IN THE STALL.

ACCESSIBLE PARKING SYMBOL

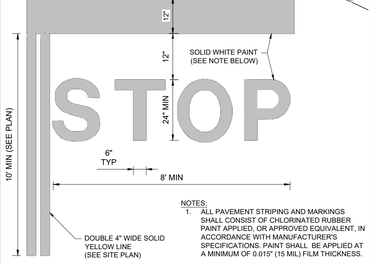
NOT TO SCALE (NE-S050102 - 09/2023)



NOTE:
1. REFER TO "ACCESSIBILITY NOTES" PROVIDED HEREIN FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.
2. THE LAYOUT AND NUMBER OF PARKING SPACES VARIES. REFER TO PLAN FOR LOCATION AND CONFIGURATION.
3. STALL DIMENSIONS ARE MEASURED TO THE CENTERLINE OF THE PAINTED STRIPE.
4. ACCESS AISLES CAN NOT OVERLAP VEHICULAR WAYS.

ADA PARKING STALL MARKING - ANGLED LEFT

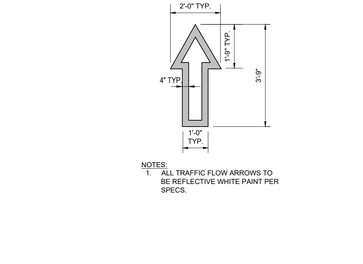
NOT TO SCALE (BE-S050101 - 05/2024) MOD



NOTES:
1. ALL PAVEMENT STRIPING AND MARKINGS SHALL CONSIST OF CHLORINATED RUBBER PAINT APPLIED, OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. PAINT SHALL BE APPLIED AT A MINIMUM OF 0.015" (15 MIL) FILM THICKNESS.

STOP BAR

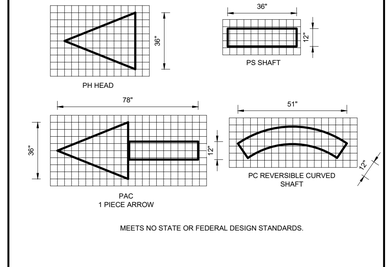
NOT TO SCALE (NE-S050301 - 09/2024)



NOTES:
1. ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT PER SPECS.

TRAFFIC FLOW ARROW

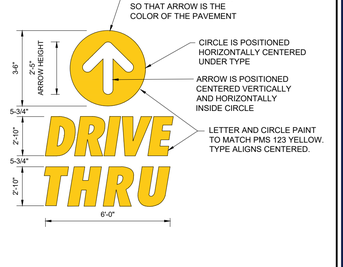
NOT TO SCALE (NE-S050302 - 09/2023)



MEETS NO STATE OR FEDERAL DESIGN STANDARDS.

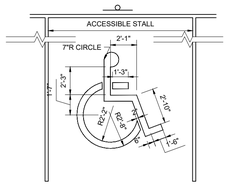
SINGLE / DOUBLE HEADED ARROW

NOT TO SCALE (2024-05-01)



PAINTED TRAFFIC ARROWS AND LETTERS

NOT TO SCALE (2024-05-01)



NOTES:
1. ACCESSIBLE SYMBOL PAINT SHALL CONFORM TO THE STRIPING PAINT SPECIFIED AND SYMBOL SHALL BE CENTERED IN THE STALL
2. 12"x18", 5' TO BOTTOM OF SYMBOL
3. LOCATED SO THAT IT CANNOT BE OBSCURED BY A CAR PARKED IN THE SPACE (2' BEHIND CURB OR 2' BEHIND WALK, AS APPLICABLE)
4. CONFORM TO LOCAL CODES

ACCESSIBLE PARKING SYMBOL WITH DIMENSIONS

NOT TO SCALE (NE-S050103 - 09/2023)

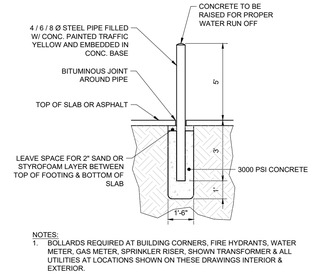
ACCESSIBLE PARKING SIGNS

NOT TO SCALE (NE-S060101 - 09/2023)

NOTES:
1. ACCESSIBLE AND VAN PARKING SIGNS SHALL CONFORM WITH CURRENT FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS.

SIGN ON BOLLARD

NOT TO SCALE (NE-S060201 - 09/2023) MOD



NOTES:
1. BOLLARDS REQUIRED AT BUILDING CORNERS, FIRE HYDRANTS, WATER METER, GAS METER, SPRINKLER RISER, SHOWN TRANSFORMER & ALL UTILITIES AT LOCATIONS SHOWN ON THESE DRAWINGS INTERIOR & EXTERIOR.

BOLLARD

NOT TO SCALE (NE-S070101 - 09/2023)

STOP SIGN

NOT TO SCALE (NE-S060202 - 09/2023)

"THANK YOU" LETTERS

NOT TO SCALE (2024-05-01)

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-4A-----LAYOUT: C-901 DETL

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PROJECT No.: MAA240177.00-4A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUCICH — NEW HAMPSHIRE — 14 — JOHN A. KUCICH — PROFESSIONAL ENGINEER — MAINE LICENSE NO. 12503 — NEW HAMPSHIRE LICENSE NO. 14476 — COMMONWEALTH OF MASSACHUSETTS LICENSE NO. 54177 — RHODE ISLAND LICENSE NO. 14476 — MAINE LICENSE NO. 12503

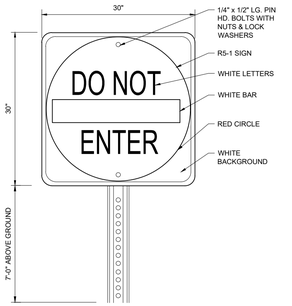
SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

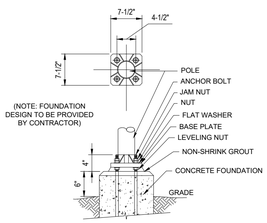
C-901

REVISION 4 - 07/02/2025



DO NOT ENTER SIGN

NOT TO SCALE (NE-S060203 - 09/2023)



FLAG POLE BASE

NOT TO SCALE



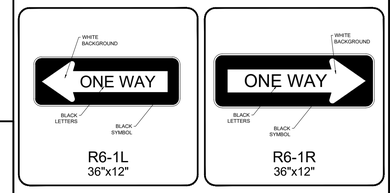
FLAG POLES

NOT TO SCALE (2024-05-01)

DO NOT BLOCK ACCESSIBLE PARKING SPACES

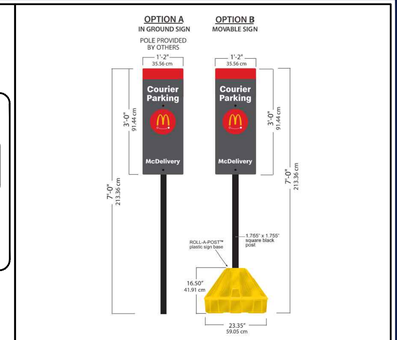
"DO NOT BLOCK ACCESSIBLE PARKING SPACES" SIGN

NOT TO SCALE



ONE WAY R6-1 SIGNS

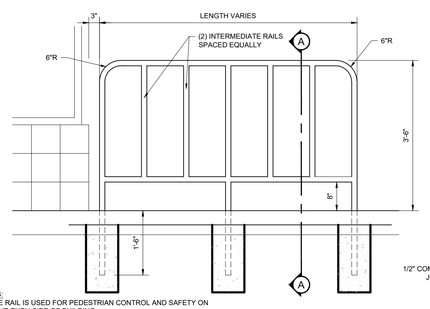
NOT TO SCALE

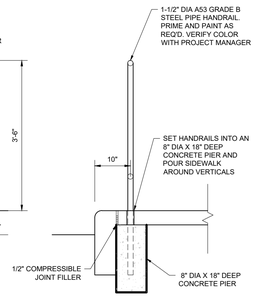


TOTAL AREA = 3.5 SF/EA

COURIER PARKING AND MCDELIVERY SIGN

NOT TO SCALE (2024-05-01)



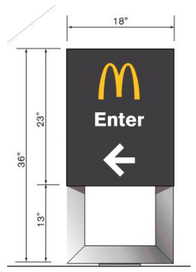


NOTES:
1. PIPE RAIL IS USED FOR PEDESTRIAN CONTROL AND SAFETY ON DRIVE-THRU SIDE OF BUILDING.
2. CONTRACTOR TO COORDINATE WITH ACM AND OWNER/OPERATOR FOR ACTUAL MATERIAL AND DESIGN PRIOR TO ORDERING

SECTION A-A

RAILING DETAIL AND SECTION

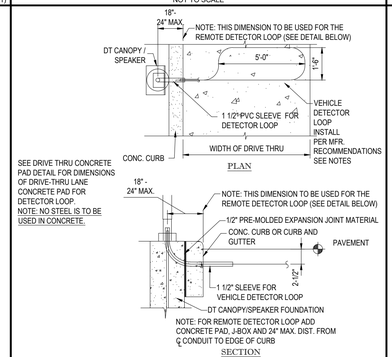
NOT TO SCALE (2024-09-27)



TOTAL AREA = 3 SF

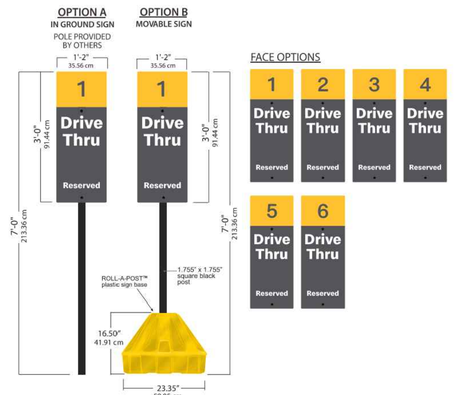
NEXT GEN 3 SF 36 IN DIRECTIONAL BRANDED

NOT TO SCALE (2024-05-01)



AUTO DETECTOR LOOP DETAIL

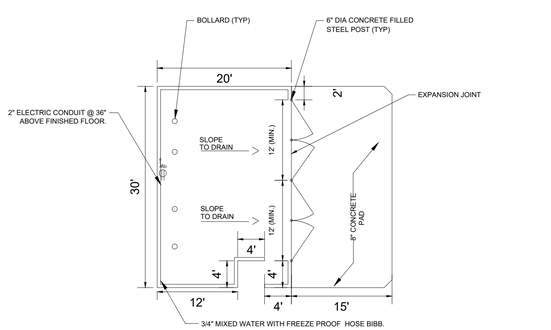
NOT TO SCALE



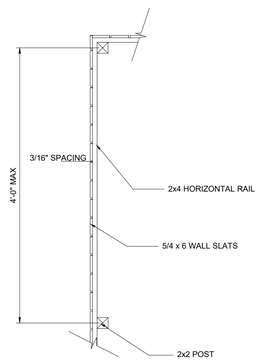
TOTAL AREA = 3.5 SF/EA

DRIVE THRU RESERVED SIGN

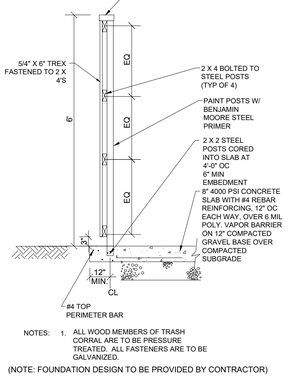
NOT TO SCALE (2024-05-01)



TRASH ENCLOSURE LAYOUT (20'x30')



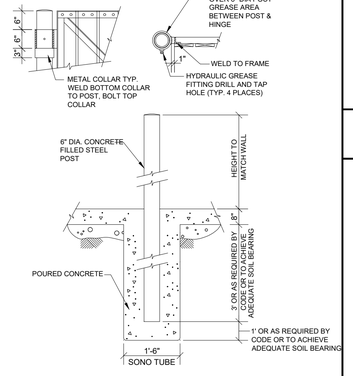
TRASH ENCLOSURE TYP PLAN ELEV



NOTES: 1. ALL WOOD MEMBERS OF TRASH CORRAL ARE TO BE PRESSURE TREATED. ALL FASTENERS ARE TO BE GALVANIZED.

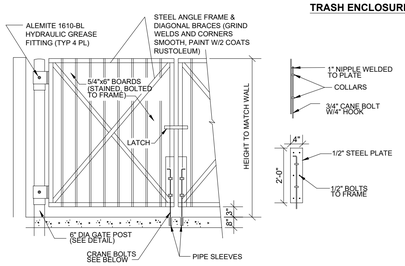
(NOTE: FOUNDATION DESIGN TO BE PROVIDED BY CONTRACTOR)

TRASH ENCLOSURE WALL SECTION

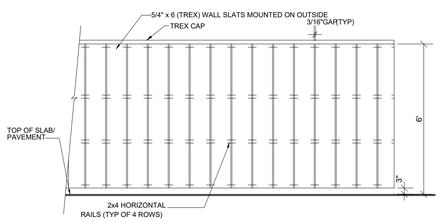


(NOTE: FOUNDATION DESIGN TO BE PROVIDED BY CONTRACTOR)

TRASH ENCLOSURE GATE POST DETAILS



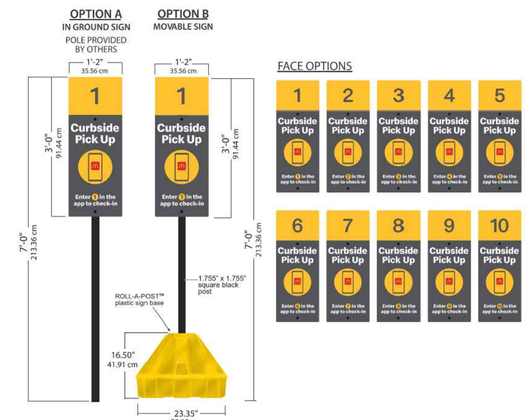
TRASH ENCLOSURE GATE & MOUNTING



TRASH ENCLOSURE TYPICAL ELEVATION

20' X 30' TREX TRASH ENCLOSURE

NOT TO SCALE (2024-09-27) (MOD)



TOTAL AREA = 3.5 SF/EA

CURBSIDE PICK UP SIGN

NOT TO SCALE (2024-05-01)

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-4A-----1A LAYOUT, C-902 DETL

JAG

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SITE CIVIL AND CONSULTING ENGINEERING
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SITE ID #: 28-0178

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STRAFFORD COUNTY
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352 TURNPIKE ROAD, 3rd FLOOR
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J.A. KUDICH — PROFESSIONAL ENGINEER — MASSACHUSETTS LICENSE NO. 52553 — NEW HAMPSHIRE LICENSE NO. 18476 — CONNECTICUT LICENSE NO. 30477 — RHODE ISLAND LICENSE NO. 9616 — MAINE LICENSE NO. 12553 — ORIGINAL DOCUMENT SEALED

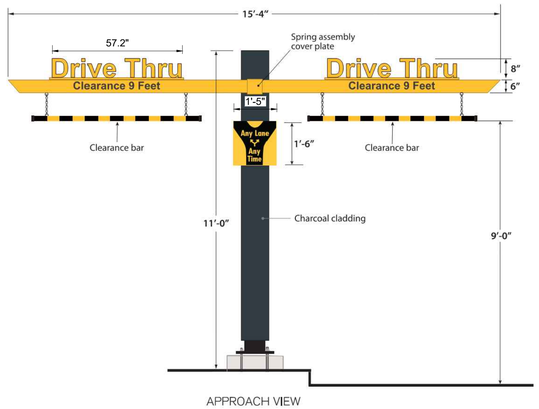
SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-902

REVISION 4 - 07/02/2025

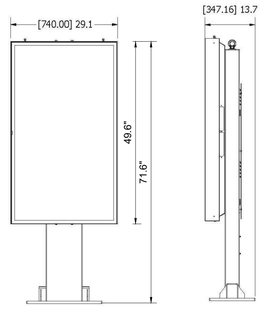


APPROACH VIEW

TOTAL AREA = 8.4 SF

DOUBLE WELCOME POINT GATEWAY

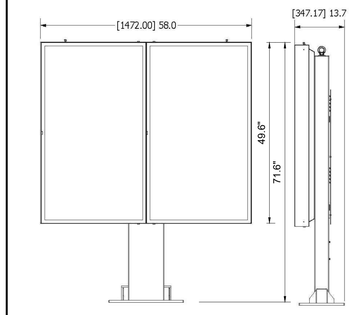
NOT TO SCALE (2024-05-01)



TOTAL AREA = 10 SF

PRE-BROWSE OUTDOOR DISPLAY MENU BOARD

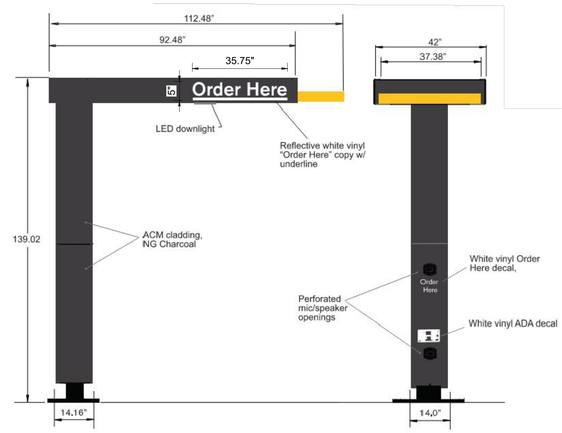
NOT TO SCALE (2024-05-01)



TOTAL AREA = 20 SF

DOUBLE OUTDOOR DISPLAY MENU BOARD

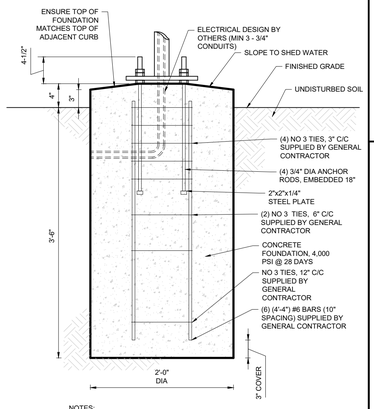
NOT TO SCALE (2024-05-01)



TOTAL AREA = 1.2 SF

SLIM SPRINGBOARD CANOPY - YELLOW

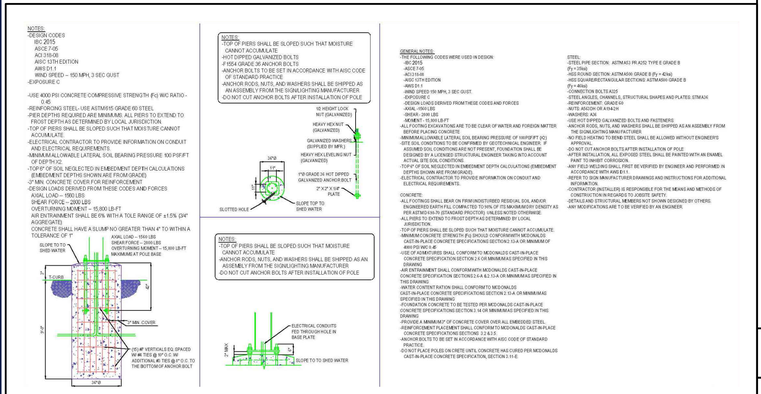
NOT TO SCALE (2024-05-01)



NOTES:
1. REINFORCING STEEL TO BE ASTM 615 GRADE 60 STEEL

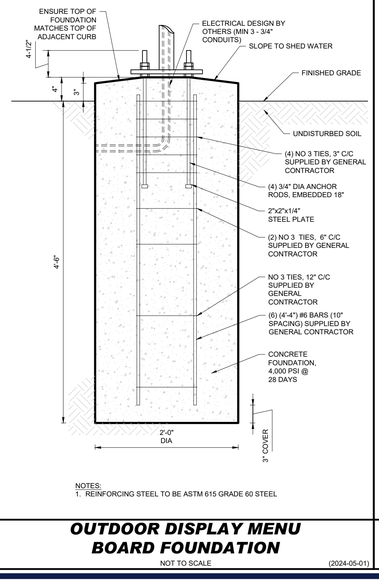
PRE-BROWSE MENU BOARD FOUNDATION

NOT TO SCALE (2024-05-01)



ORDER POINT FOUNDATION

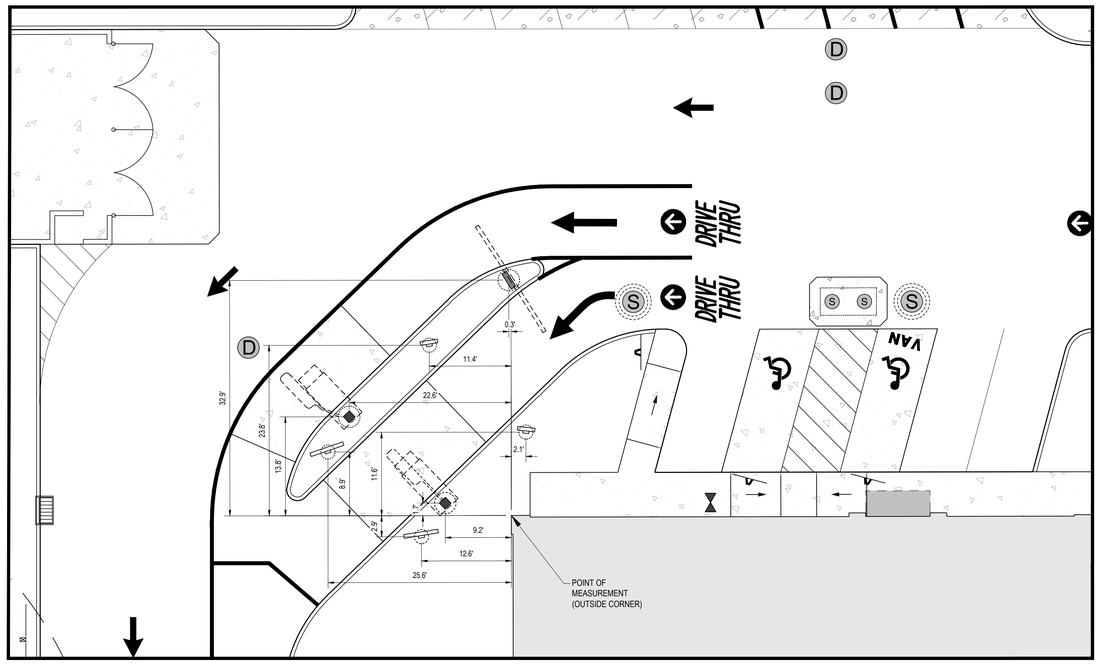
(2024-05-01) NOT TO SCALE



NOTES:
1. REINFORCING STEEL TO BE ASTM 615 GRADE 60 STEEL

OUTDOOR DISPLAY MENU BOARD FOUNDATION

NOT TO SCALE (2024-05-01)



SIDE-BY-SIDE STANDARDS & DESIGN TOLERANCES:

1) DISTANCE FROM CENTER OF OPEN PRESENT WINDOW TO CENTER OF OPEN CASH WINDOW STANDARD IN 42'-45' AND IS SPECIFIC TO EACH BUILDING CONFIGURATION. ACCEPTABLE TOLERANCE IS 42' MIN ON REMODELS ONLY.

2) DISTANCE FROM CENTER OF OPEN CASH WINDOW TO CENTER OF PRIMARY LANE DT CANOPY/SPEAKER IS 100' OPTIMUM, 80' OR 60' MIN. ACCEPTABLE TOLERANCE IS PLUS OR MINUS 5' FOR 100' OR 80' QUEUES.

3) THE CENTER OF THE DIGITAL MENU BOARD FOUNDATION IS TO BE 5'-9" (5'-6" MIN. AND 6'-0" MAX.) FROM THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. IT SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° TO 35° (35° PREFERRED) FROM A CAR POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBILITY.

4) THE CRITICAL HOLD DISTANCE FROM CENTER OF THE PRIMARY LANE DT CANOPY/SPEAKER TO THE TIP OF THE CURBED ISLAND IS 15'-0".

5) THE CRITICAL HOLD DISTANCE FROM TIP OF ISLAND TO CENTER OF SECONDARY LANE DT CANOPY/SPEAKER IS 14'-0".

6) THE CENTER OF THE SECONDARY LANE DIGITAL MENU BOARD FOUNDATION SHALL BE 5'-9" (5'-6" MIN. AND 6'-0" MAX.) FROM THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION WITH THE END CAP OF THE SECONDARY MENU BOARD NOT BE LESS THAN 12" FROM FACE OF CURB. IT SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° FROM A VEHICLE POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBILITY.

7) THE ISLAND WIDTH IS 6'-0" STANDARD FROM FACE OF CURB TO CURB.

8) DIGITAL PRE-BROWSE BOARD IN THE PRIMARY LANE MUST BE 18'-24' FROM FACE OF CURB. THE DISTANCE BETWEEN THE PRIMARY DT CANOPY/SPEAKER AND PRE-BROWSE BOARD IS TO BE 15' AS MEASURED ALONG THE FACE OF CURB. THIS IS MEASURED FROM THE CENTER OF THE PRE-BROWSE BOARD FOUNDATION TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE (APPROXIMATELY 50°) OF THE PRE-BROWSE BOARD SHOULD MAXIMIZE VISIBILITY FROM THE SECOND CAR TO DT CANOPY/SPEAKER.

9) DIGITAL PRE-BROWSE BOARD IN THE SECONDARY LANE MUST BE MIN. 12" FROM FACE OF CURB. THE PRE-BROWSE BOARD IS TO BE 15' AS MEASURED ALONG THE FACE OF THE CURB. THIS IS MEASURED FROM THE POINT PERPENDICULAR TO THE CENTER OF THE PRE-BROWSE BOARD FOUNDATION TO THE POINT PERPENDICULAR TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE OF THE PRE-BROWSE BOARD SHOULD MAXIMIZE VISIBILITY TO THE SECOND CAR FROM THE DT CANOPY/SPEAKER (PREFERRED 35°)

10) A GATEWAY IS REQUIRED AND PLACED AT THE DRIVE-THRU LANE ENTRANCE.

11) EVERY SBS SHOULD HAVE BOTH DT CANOPY/SPEAKER IN BOTH LANES.

THE REGIONAL CONSTRUCTION MANAGER IS TO REVIEW AND APPROVE ALL DRIVE-THRU LAYOUTS. A DRIVE-THRU IS FINAL, AND CONSIDERED "RED", ONCE APPROVED. NO CHANGES ARE TO BE MADE AFTER THIS POINT.

NOTE: THE PLACEMENT OF THE DT CANOPY/SPEAKER SHOULD BE SUCH THAT IT PREVENTS, OR MINIMIZES, BLOCKING THE CUSTOMER'S VIEW OF THE MENU BOARD WHILE ORDERING.

NOTE: LINEAR DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BUILDING FACES SHOWN UNLESS OTHERWISE NOTED.

NOTE: ALL SIGN BOLLARDS ARE TO BE 18"-24" FROM FACE OF CURB, THIS IS MEASURED FROM THE CLOSEST POINT ON THE SIGN.

DRIVE-THRU

SCALE: 1"=10'

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FOR

SITE ID #: 28-0178

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NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
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BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. A. KUOCH
NEW HAMPSHIRE
JOHN A. KUOCH
PROFESSIONAL ENGINEER
No. 13577
CERTIFICATE OF AUTHORIZATION
RHODE ISLAND No. 9616
MAINE No. 2563

SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-903

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-CNDS-MAA240177.00-4A-----LAYOUT: C-903 DETL

Advanced Drainage Systems, Inc.

SiteAssist®
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

SC-800 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-800.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

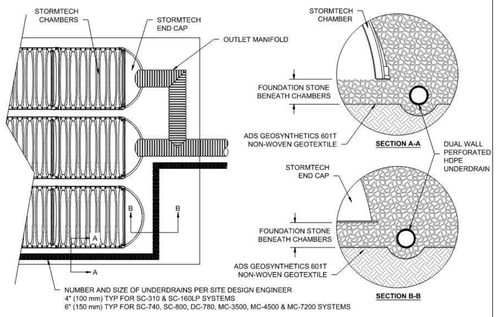
1. STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

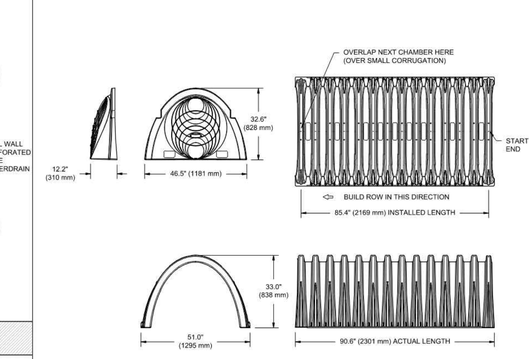
1. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



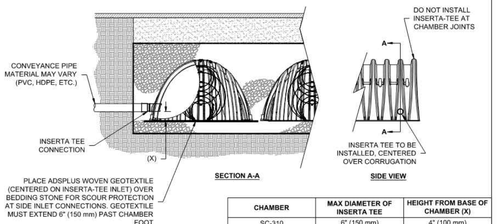
5 UNDERDRAIN DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	81.0 CUBIC FEET	(2.29 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
SC-800	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)

INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

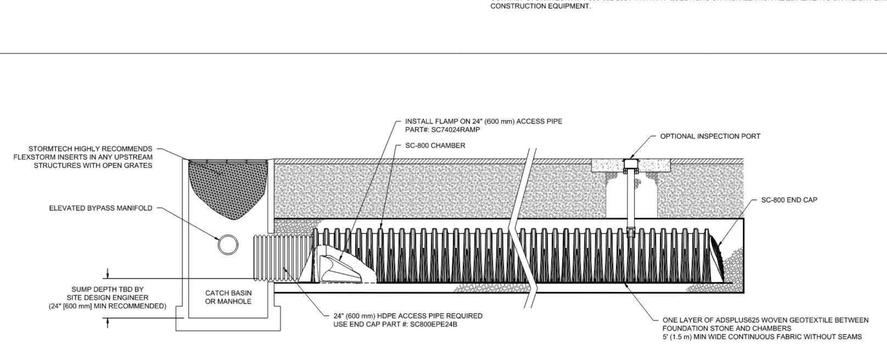
6 INSERTA-TEE SIDE INLET DETAIL

PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

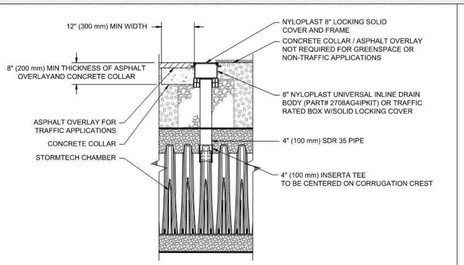
PART #	STUB	B	C
SC800EPE06T / SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06B / SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08T / SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08B / SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10T / SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10B / SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12T / SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12B / SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15T / SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15B / SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18T / SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18B / SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24B	24" (600 mm)	---	2.3" (58 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-800 TECHNICAL SPECIFICATIONS



3 SC-800 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

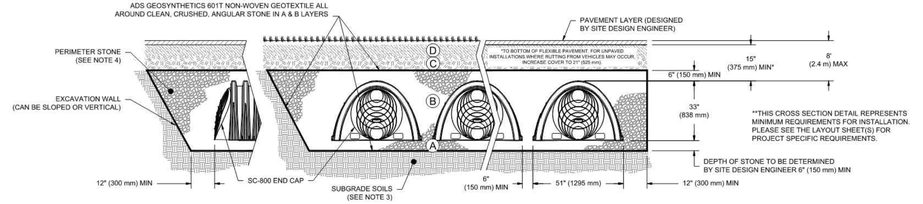
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

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. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 SC-800 CROSS SECTION DETAIL

SC-800 STANDARD DETAILS

DRAWN: JLM | DATE: 01/10/24
REVIEWED: JLM | PROJECT NO:
REV: | NOT TO SCALE

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

SHEET 1

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STORMTECH SC-800 SUBSURFACE DETENTION/INFILTRATION BASIN DETAILS

NOT TO SCALE

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVIL-GNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
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RHODE ISLAND LICENSED PROFESSIONAL ENGINEER No. 16716
MARYLAND LICENSED PROFESSIONAL ENGINEER No. 32553

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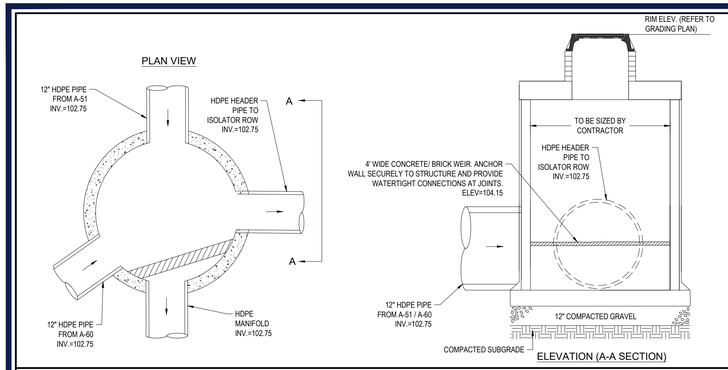
CONSTRUCTION DETAILS

SHEET NUMBER:

C-904

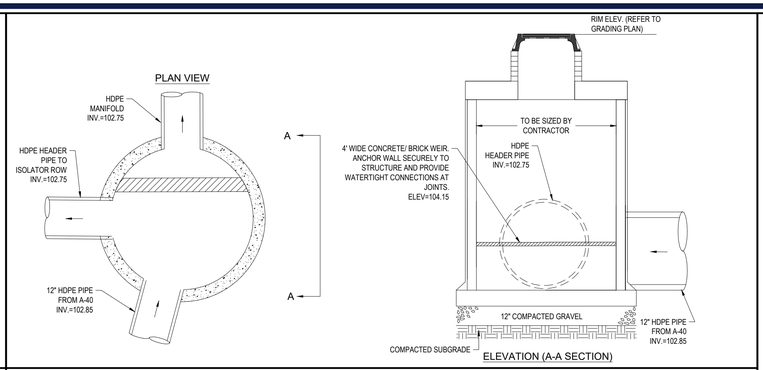
REVISION 4 - 07/02/2025

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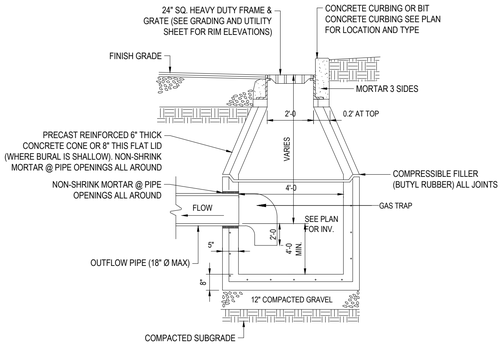
INLET CONTROL STRUCTURE (A-50)

(NE-U010103 - 09/2023) MOD NOT TO SCALE



INLET CONTROL STRUCTURE (A-30)

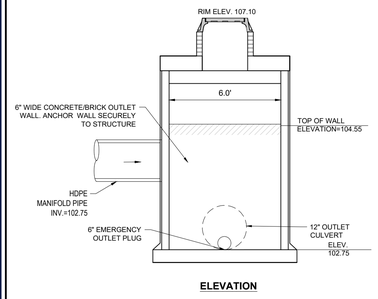
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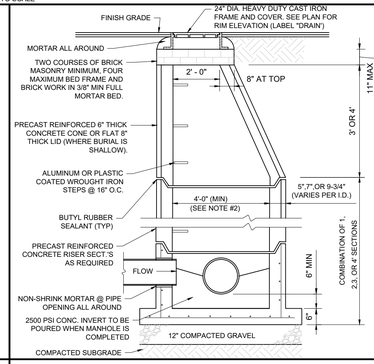
NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PIPE SIZING AND ORIENTATION USING THE GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS.
3. CONCRETE SHALL BE 4,000 PSI AFTER 28 DAYS
4. REINFORCED STEEL CONFORMS TO ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
5. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS"

PRECAST CONCRETE DEEP SUMP CATCH BASIN

(NE-U010201 - 07/2024) - MOD NOT TO SCALE



ELEVATION



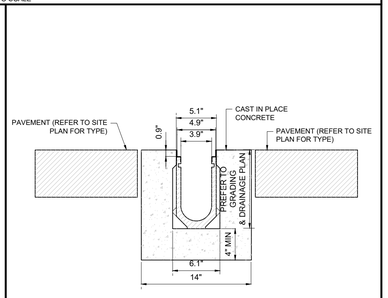
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2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PIPE SIZING AND ORIENTATION USING THE GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS.
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5. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS"

OUTLET CONTROL STRUCTURE (A-20)

(NE-U010103 - 09/2023) MOD NOT TO SCALE

PRECAST CONCRETE STORM DRAIN MANHOLE

NOT TO SCALE (NE-U010101 - 05/2024)

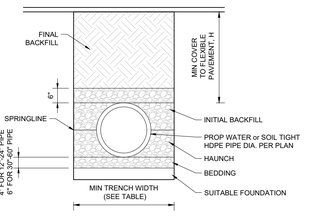


INSTALLATION IN ASPHALT/CONCRETE

ACO TRENCH DRAIN SYSTEM

NOT TO SCALE (NE-U010208 - 09/2023)

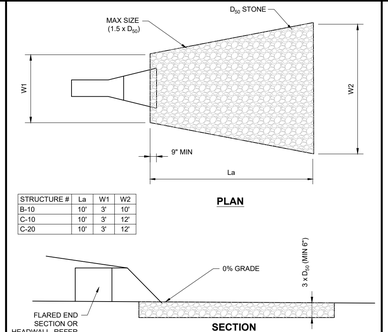
NOTES:
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER .AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.



RECOMMENDED MINIMUM TRENCH WIDTH	
PIPE DIA.	MIN TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

HDPE STORM PIPE TRENCH

NOT TO SCALE (NE-U019812 - 09/2023)



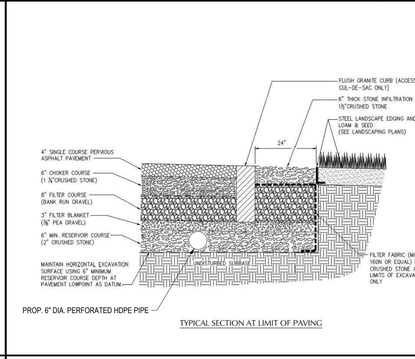
STRUCTURE #	La	W1	W2
B-10	10'	3'	10'
C-10	10'	3'	12'
C-20	10'	3'	12'

PLAN

SECTION

RIP-RAP DETAIL

NOT TO SCALE (NE-U010403 - 09/2023) MOD



TYPICAL SECTION AT LIMIT OF PAVING

POROUS ASPHALT PAVEMENT DETAIL & SPECIFICATIONS

NOT TO SCALE

Gradations and compaction of choker, filter, and reservoir course materials.

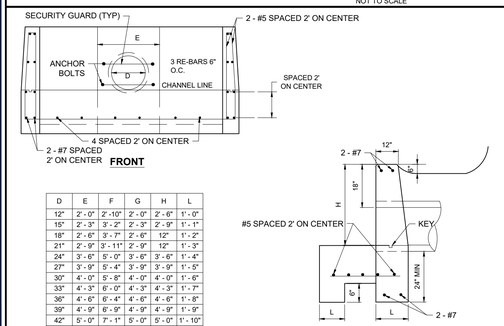
US Standard Sieve Designation	Choker Course (AASHTO No. 57)	Filter Course (AASHTO No. 8 or NJDOT #8)	Reservoir Course (AASHTO No. 3)	Reservoir Course (AASHTO No. 2)
4	100	-	100	-
3	-	-	90-100	-
2	-	-	35-70	90-100
1 ½	90-100	-	0-15	35-70
1	-	-	-	0-15
¾	20-55	100	0-5	-
½	-	85-100	-	-
⅜	0-15	10-30	-	-
#4	0-5	-	-	-
#8	-	0-10	-	-
#200	0-3	0-3	0-3	0-3
% Compaction (ASTM D698 / AASHTO T99)	95	95	95	95

* Alternate gradation (e.g. AASHTO No. 5) may be accepted upon Engineer's approval.
** Preferably less than 5% fines

Porous Asphalt Mix Design Criteria	
Sieve Size (inch/mm)	Percent Passing (%)
½ (12.5)	100
⅜ (9.5)	85-100
#4 (4.75)	50-70
#8 (2.36)	25-35
#16 (1.18)	5-10
#30 (600)	2-4
#50 (300)	2-4
#100 (150)	2-4
#200 (75)	2-4
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass	0.3% by Cellulose or 0.4% pelletized
Stabilizing Additive Content	0.3% by TRU
Raveling Resistance (ASTM D7064/AASHTO T378)	Mf-0.21.9%
Thickness (ASTM D6926)*	3.5 - 11.5 %
Retained Tensile Strength (AASHTO T283)**	85 - 110 %
Cantabro abrasion test on unaged samples (ASTM D7064/64)	15 - 20%
Cantabro abrasion test on 7 day aged samples	15 - 20%

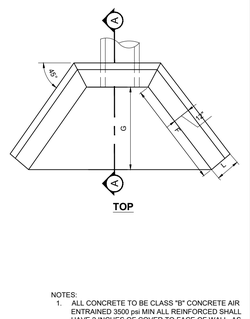
* Compaction of mixed fibers may be controlled to within abrasion tolerances.
** If the TSR (retained tensile strength) values fall below 85% when tested per NAPA IS 131 (with a single freeze-thaw cycle rather than 5), then in Step 4, the contractor shall employ an antistrip additive, such as hydrated lime (ASTM C977) on a fatty amine, to raise the TSR value above 85%.

SEE PROJECT SPECIFICATIONS FOR COMPLETE CONSTRUCTION METHODS AND MATERIAL REQUIREMENTS.



D	E	F	G	H	L
12"	2' - 0"	2' -10"	2' - 0"	2' - 6"	1' - 0"
15"	2' - 3"	3' - 2"	2' - 3"	2' - 9"	1' - 1"
18"	2' - 6"	3' - 7"	2' - 6"	12"	1' - 2"
21"	2' - 9"	3' - 11"	2' - 9"	12"	1' - 3"
24"	3' - 0"	5' - 0"	3' - 6"	3' - 6"	1' - 4"
27"	3' - 9"	5' - 4"	3' - 9"	3' - 9"	1' - 5"
30"	4' - 0"	5' - 8"	4' - 0"	4' - 0"	1' - 6"
33"	4' - 3"	6' - 0"	4' - 3"	4' - 3"	1' - 7"
36"	4' - 6"	6' - 4"	4' - 6"	4' - 6"	1' - 8"
39"	4' - 9"	6' - 9"	4' - 9"	4' - 9"	1' - 9"
42"	5' - 0"	7' - 1"	5' - 0"	5' - 0"	1' - 10"
48"	5' - 6"	7' - 9"	5' - 6"	5' - 6"	2' - 0"

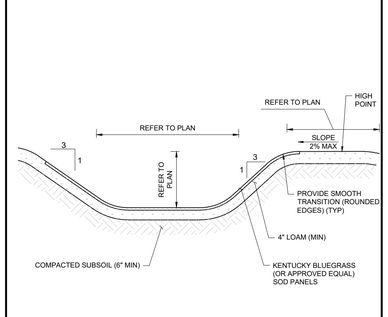
SELECTION A-A



NOTES:
1. ALL CONCRETE TO BE CLASS "B" CONCRETE AIR ENTRAINED 3500 psi MIN ALL REINFORCED SHALL HAVE 2 INCHES OF COVER TO FACE OF WALL. AS DIRECTED BY THE TOWN ENGINEER

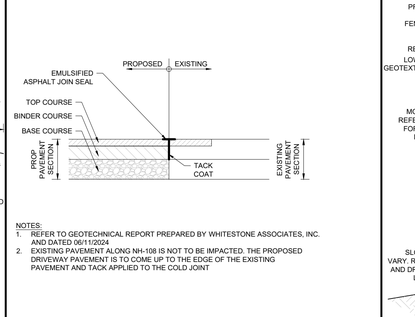
HEADWALL

NOT TO SCALE (NE-U010404 - 09/2023)



SOD SWALE SECTION

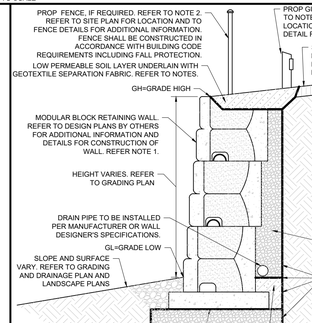
NOT TO SCALE (NE-G020201 - 10/2024)



NOTES:
1. REFER TO GEOTECHNICAL REPORT PREPARED BY WHITESTONE ASSOCIATES, INC. AND DATED 06/11/2024
2. EXISTING PAVEMENT ALONG NH-108 IS NOT TO BE IMPACTED. THE PROPOSED DRIVEWAY PAVEMENT IS TO COME UP TO THE EDGE OF THE EXISTING PAVEMENT AND TACK APPLIED TO THE COLD JOINT

BITUMINOUS CONCRETE PAVEMENT TIE IN (DURHAM ROAD / NH-108)

(NE-S010501 - 08/2024) NOT TO SCALE



NOTES:
1. THIS TYPICAL DETAIL IS NOT FOR CONSTRUCTION AND IS PRELIMINARY AND CONCEPTUAL IN NATURE. THIS DETAIL IS PROVIDED FOR GRAPHICAL REFERENCE PURPOSES ONLY. DESIGN OF THE PROPOSED RETAINING WALL(S) SHALL BE PREPARED BY THE APPROPRIATE PROFESSIONAL (E.G. STRUCTURAL ENGINEER) LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE PROFESSIONAL SHALL BE FAMILIAR WITH THE ACTUAL SITE CONDITIONS AND MATERIALS AS WELL AS APPLICABLE, LOCAL, STATE AND FEDERAL REGULATIONS.
2. RETAINING WALL & ANY ASSOCIATED REINFORCEMENT SHALL BE DESIGNED ACCOUNTING FOR SOIL TYPES, WATER TABLE ELEVATION, EXISTING & PROPOSED SURROUNDING IMPROVEMENTS/CONDITIONS (INCLUDING BUT NOT LIMITED TO SLOPES, DRIVE AISLES, ROADS, FENCING (INCLUDING WIND LOAD), GUIDERAILS (INCLUDING COLISION LOADING), UTILITIES, DRAINAGE FACILITIES, STRUCTURES, FOUNDATIONS), LIVE LOADS AND OTHER SITE AMENITIES THAT COULD HAVE AN INFLUENCE OR IMPACT ON THE RETAINING WALL(S) CONSTRUCTABILITY AND/OR LONGEVITY SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN AS WELL AS THE GLOBAL STABILITY ANALYSIS.
3. RETAINING WALL DESIGNER SHALL ACCOUNT FOR MULTIPLE STORM STRUCTURES BEHIND WALL INCLUDING PARALLEL STORM PIPE THAT MAY INTERFERE WITH THE DESIGN OF THE WALL AND ANY ASSOCIATED REINFORCEMENT.
4. SEE GRADING AND DRAINAGE PLAN FOR PROPOSED ELEVATIONS AND SLOPES ASSOCIATED WITH SAME.
5. REFER TO GENERAL GRADING NOTES ON SHEET C-102 FOR ADDITIONAL NOTES REGARDING DESIGN AND CONSTRUCTION OF RETAINING WALLS.
6. DRAIN PIPE SHALL DISCHARGE TO CRUSHED STONE PAD AT GRADE (I.E. DAYLIGHT) OR CONNECT TO PROP DRAINAGE SYSTEM IF UNABLE TO DAYLIGHT. A RODENT SCREEN SHALL BE PROVIDED AT PIPE END WHERE PIPE DAYLIGHTS.
7. THIS DETAIL IS NOT APPLICABLE FOR WALLS UTILIZED TO RETAIN WATER.
8. MATERIALS UTILIZED IN CONSTRUCTION OF THE RETAINING WALL SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S AND WALL DESIGNER'S SPECIFICATIONS INCLUDING ANY REQUIRED COMPACTION AND TESTING.
9. WALL DESIGNER SHALL ACCOUNT FOR PROXIMITY OF DRAINAGE SYSTEMS AND ANY ASSOCIATED STORMWATER INFILTRATION INCLUDING PREPARATION OF GLOBAL STABILITY AND MOUNDING ANALYSES.

NON-REINFORCED (GRAVITY) SEGMENTAL BLOCK RETAINING WALL

NOT TO SCALE (NE-S110502 - 02/2024)

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABILITY SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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PROJECT No.: MAA240177.00-4A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVIL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUDICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 49538
NEW HAMPSHIRE LICENSE NO. 18476
CONNECTICUT LICENSE NO. 30477
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553

SHEET TITLE:

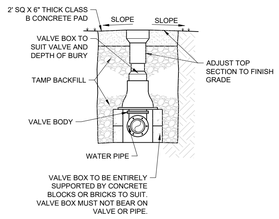
CONSTRUCTION DETAILS

SHEET NUMBER:

C-905

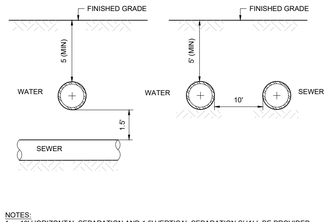
REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-CNDS-MAA240177.00-4A-----%LAYOUT: C-905 DETL



GATE VALVE

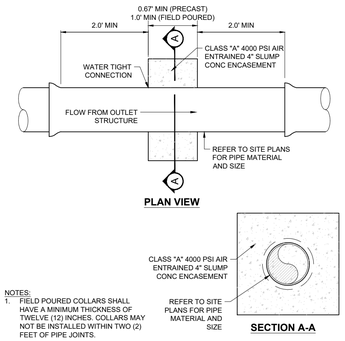
NOT TO SCALE (NE-U030201 - 09/2023)



NOTES:
1. 10' HORIZONTAL SEPARATION AND 1.5' VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN WATER AND SEWER AS DEPICTED IN THIS DETAIL OR SEWER SHALL BE ENCASED IN CONCRETE (SEE CONCRETE ENCASEMENT DETAIL) IN SECTIONS WHERE SEPARATIONS SHALL NOT BE ACHIEVED.

WATER AND SEWER UTILITY CROSSING

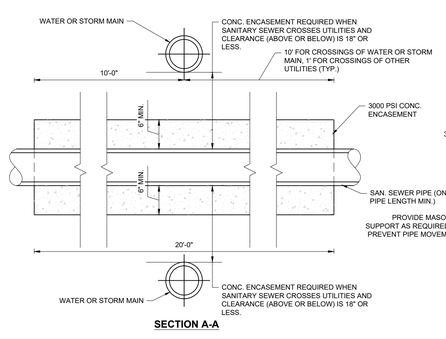
NOT TO SCALE (NE-U050101 - 09/2023)



NOTES:
1. FIELD POURED COLLARS SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES. COLLARS MAY NOT BE INSTALLED WITHIN TWO (2) FEET OF PIPE JOINTS.

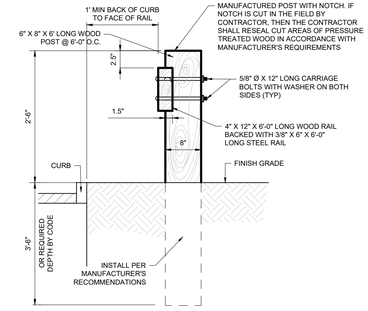
ANTI-SEEP COLLAR

NOT TO SCALE (NE-U019813 - 09/2023)



SANITARY CONCRETE ENCASEMENT

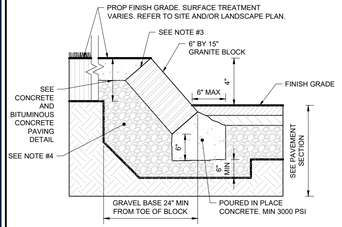
NOT TO SCALE (BE-U029901 - 04/2024)



NOTES:
1. ALL CARRIAGE BOLTS, NUTS & WASHERS TO BE GALVANIZED
2. WOOD SHALL BE SOUTHERN YELLOW PINE UNLESS OTHERWISE SPECIFIED.
3. MATERIAL SHALL BE CONSISTENT BETWEEN POST, RAIL, AND OFFSET BLOCK (IF APPLICABLE).
4. WOOD SHALL BE TREATED WITH CHROMATED COPPER ARSENATE TYPE C (CCA-C) WITH A RETENTION RANGE OF 0.4-0.6 PCF IN ACCORDANCE WITH AWPA P23.
5. WOOD GRADE SHALL HAVE A MINIMUM EXTREME FIBER BENDING OF 1,000 PSI. GRADE SHALL BE IN ACCORDANCE WITH AASHTO M168.

WOOD GUIDERAIL

NOT TO SCALE (NE-S090101 - 04/2025)



NOTES:
1. CURVED GRANITE CURB SHALL CONFORM TO THE STATE DOT SPECIFICATIONS.
2. PAVEMENT SECTION DEPTHS, MATERIAL AND SPECIFICATIONS PER PAVEMENT SECTION DETAIL.
3. PROVIDE 1/2 INCH EXPANSION JOINT USING PREFORMED EXPANSION JOINT FILLER WHERE ABUTTING CONCRETE SIDEWALK.
4. STONE MATERIAL SHALL BE CONSISTENT WITH THE CRUSHED STONE BASE COURSE REQUIRED FOR THE PAVEMENT SECTION, OR APPROVED EQUIVALENT.

MOUNTABLE CONCRETE APRON WITH SLOPED GRANITE CURBING

NOT TO SCALE (NE-S020302 - 04/2025) - MOD

TO SOUTH 108 ONLY

"TO SOUTH 108 ONLY" SIGN

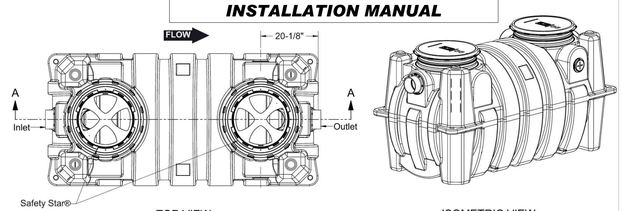
NOT TO SCALE

GC TO REFER TO MANUFACTURER INSTALLATION MANUAL

SPECIFICATIONS
Notes:
1. 6" plain end inlet/outlet.
2. Dual 4" pumpout port connections
3. Unit weight - w/ cast iron covers: 528 lbs. (For wet weight add 4,254 lbs.)
4. Maximum operating temperature: 150º F continuous
5. Capacities - Liquid: 510 gal.
   Grease: 3,048 lbs. (417 gal.) @100 GPM
   Solids: 128 gal.
6. Built-in flow control. For series installations, only install flow control on the first unit in the series if necessary.
7. For gravity drainage applications only.
8. Do not use for pressure applications.
9. Cover placement allows full access to tank for proper maintenance.
10. Vent not required unless per local code.
11. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
12. Integral air relief / Anti-siphon / Sampling access.
13. Adjustable cover adapters provide up to 4" of additional height.
14. Designed for below-grade, above-grade, indoor or outdoor installations.
15. Safety Star®, access restrictor built into each cover adapter, prevents accidental entry to tanks (450 lb rating).

ENGINEER SPECIFICATION GUIDE
Schier Great Basin™ grease interceptor model # GB-500 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 7/16" uniform wall thickness. Flow control cartridge shall be PVC. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter, Safety Star® access restrictor built into each cover adapter. Interceptor shall be certified to ASME A112.14.3 (Type C) and CSA B481.1. Interceptor flow rate shall be 100 GPM.
Interceptor grease capacity shall be 3,048 lbs. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

CERTIFIED PERFORMANCE
Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.



SPECIFICATION SHEET

MODEL NUMBER:	PART NUMBER: 4075-003-01
GB-500	DESCRIPTION: GREASE INTERCEPTOR 100 GPM, 6" PLAIN END INLET/OUTLET W/ PUMPOUT PORT CONNECTIONS, H-20 RATED PICKABLE CAST IRON COVERS

DWG BY: C. BUSENITZ | DATE: 4/14/2022 | REV: - | ECO: -

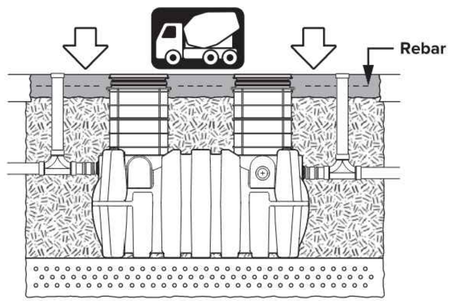
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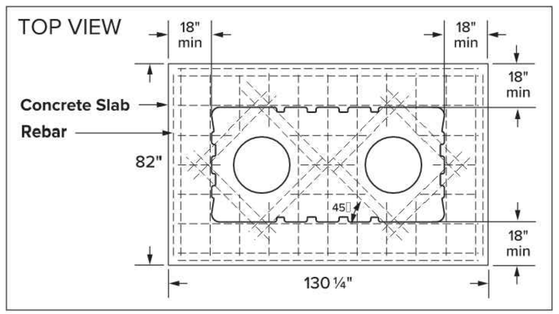
SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

SCHIER GB-500 DETAIL

NOT TO SCALE

GC TO REFER TO MANUFACTURER INSTALLATION MANUAL





Vehicular Traffic Areas:
Minimum 8" thick concrete slab with rebar required. Thickness of concrete around covers to be determined by specifying engineer. If traffic loading is required the concrete slab dimensions shown are for guideline purposes only. Concrete to be 28 day compressive strength to 4,000 PSI. Use No. 4 rebar (ø 1/2") grade 60 steel per ASTM A615: connected with tie wire. Rebar to be 2-1/2" from edge of concrete and spaced in a 12" grid with 4" spacing around access openings.

Pedestrian Traffic or Greenspace Areas:
Minimum 4" thick concrete slab with rebar required.

SCHIER CONCRETE SLAB DETAIL

NOT TO SCALE

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
INDUSTRIAL ENGINEERING
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REVISIONS

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1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
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PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUCICH
NEW HAMPSHIRE
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSED
NEW HAMPSHIRE LICENSED
CONNECTICUT LICENSED
RHODE ISLAND LICENSED
MAINE LICENSED

SHEET TITLE:

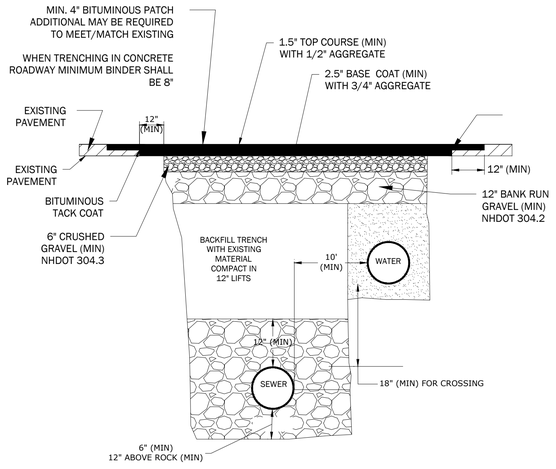
CONSTRUCTION DETAILS

SHEET NUMBER:

C-906

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-4A.----=LAYOUT: C-906 DETL

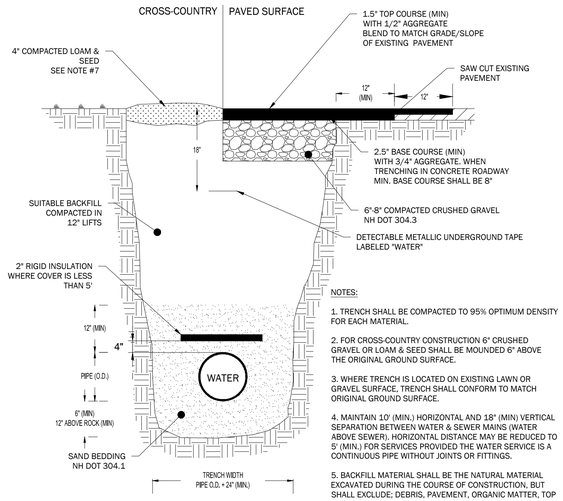


NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.

2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES

3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL
NOT TO SCALE



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.

2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.

3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.

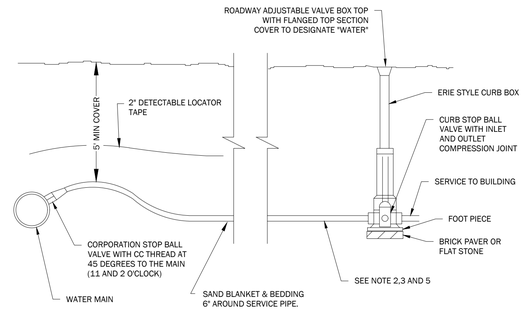
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION

6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.

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

CITY OF DOVER
D-4 WATER TRENCH
NOT TO SCALE



NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.

2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.

3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.

4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE

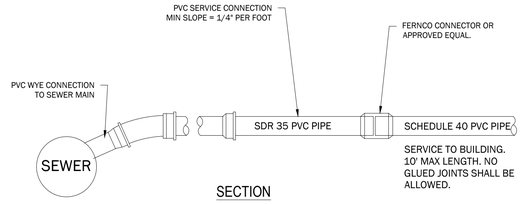
5. ALL SERVICES SHALL BE 1". PROVIDE 1" TO 3/4" REDUCER COUPLING WHERE EXISTING SERVICES ARE 3/4", SUBSIDIARY.

6. APPROVED WATER SERVICE MATERIALS INCLUDE:
   ¾"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

7. ALL SADDLES USED AS SPECIFIED SHALL HAVE DOUBLE STAINLESS STEEL STRAPS.

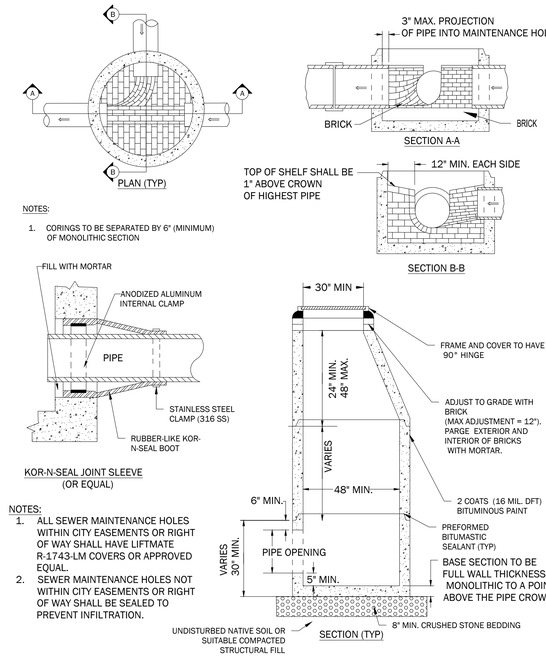
8. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.

CITY OF DOVER
D-13 WATER SERVICE CONNECTION
NOT TO SCALE



NOTES:
1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING
4. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD SEWER TRENCH DETAIL D-3.

CITY OF DOVER
D-17 SEWER SERVICE
NOT TO SCALE



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

CITY OF DOVER
D-16 SEWER MANHOLE
NOT TO SCALE

NOTES:

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

CITY OF DOVER
D-3 SEWER TRENCH
NOT TO SCALE

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DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

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NEW HAMPSHIRE LICENSED LAND SURVEYOR 15476
CONNECTICUT LICENSED PROFESSIONAL ENGINEER 30077
RHODE ISLAND LICENSED PROFESSIONAL ENGINEER 9616
MAINE LICENSED PROFESSIONAL ENGINEER 12553

SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-907

REVISION 4 - 07/02/2025

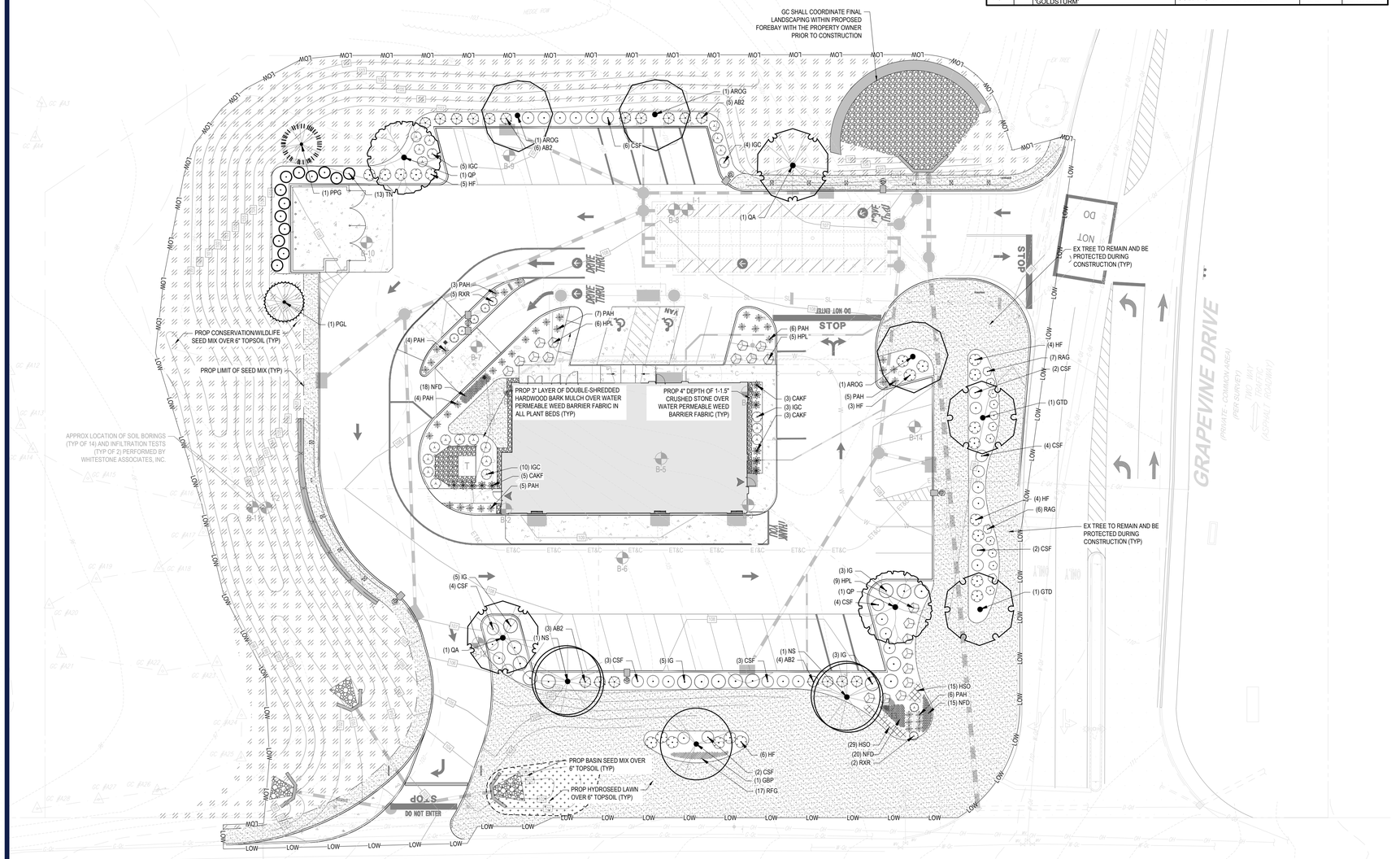
P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-4A-----%LAYOUT: C-907 DETL

NADB3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC
BK. 3496, PG. 733

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CANOPY TREES					
AROG	3	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL. MIN.	B&B
GBP	1	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY MAIDENHAIR TREE	3" CAL. MIN.	B&B
GTD	2	GLEDITSIA TRIACANTHOS INERMIS 'DRAVES'	STREET KEEPER® HONEY LOCUST	3" CAL. MIN.	B&B
NS	2	NYSSA SYLVATICA	SOUR GUM	3" CAL. MIN.	B&B
QA	2	QUERCUS ALBA	WHITE OAK	3" CAL. MIN.	B&B
QP	2	QUERCUS PALUSTRIS	PIN OAK	3" CAL. MIN.	B&B
EVERGREEN TREES					
PGL	1	PICEA GLAUCA	WHITE SPRUCE	6-8'	B&B
PPG	1	PICEA PUNGENS `GLAUCA`	COLORADO BLUE SPRUCE	6-8'	B&B
TN	13	THUJA OCCIDENTALIS 'NIGRA'	BLACK ARBORVITAE	6-8'	B&B
SHRUBS					
AB2	18	ARONIA MELANOCARPA 'UCONNAM166'	LOW SCAPE HEDGER® BLACK CHOKEBERRY	24-30"	CONTAINER
CSF	30	CORNUS STOLONIFERA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24-36"	CONTAINER
HF	22	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	24-30"	CONTAINER
HPL	20	HYDRANGEA PANICULATA 'SMHPLQF'	LITTLE QUICK FIRE PANICLE HYDRANGEA	24-30"	CONTAINER
IG	16	ILEX GLABRA	INKBERRY HOLLY	30-36"	CONTAINER
IGC	22	ILEX GLABRA `COMPACTA`	COMPACT INKBERRY	24-30"	CONTAINER
RAG	13	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	24-30"	CONTAINER
RXR	7	ROSA X 'RADRAZZ'	KNOCK OUT SHRUB ROSE	24-30"	CONTAINER
GRASSES					
CAKF	11	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER`	FEATHER REED GRASS	1 GAL.	CONTAINER
PAH	43	PENNISETUM ALOPECUROIDES `HAMELN`	HAMELN FOUNTAIN GRASS	1 GAL.	CONTAINER
PERENNIALS					
HSO	44	HEMEROCALLIS X 'STELLA DE ORO'	STELLA DE ORO DAYLILY	1 GAL.	CONTAINER
NFD	53	NEPETA X FAASSENII 'DROPMORE'	DROPMORE CATMINT	1 GAL.	CONTAINER
RFG	17	RUDBECKIA FULGIDA SULLIVANTII `GOLDSTURM`	GOLDSTURM CONEFLOWER	1 GAL.	CONTAINER



CITY OF DOVER, NEW HAMPSHIRE LANDSCAPE REQUIREMENTS

SECTION	REQUIREMENTS	CALCULATIONS/PROPOSED
§153-13	(12) THE LANDSCAPE PLAN, IN SUFFICIENT DETAIL TO INDICATE COMPLIANCE WITH THESE REGULATIONS, SHALL BE PREPARED BY A PROFESSIONAL LANDSCAPE ARCHITECT WHO IS LICENSED BY THE STATE OF NEW HAMPSHIRE. THE LICENSED LANDSCAPE ARCHITECT SHALL SIGN THE PLAN. THE LANDSCAPE PLAN SHALL BE CERTIFIED BY THE LICENSED LANDSCAPE ARCHITECT AND INCLUDE HIS/HER STATE OF NEW HAMPSHIRE LICENSE NUMBER.	PROVIDED
§153-14	**G. LANDSCAPING** 1.GENERAL REQUIREMENTS (a) EXISTING VEGETATION SHALL BE PRESERVED WHEREVER POSSIBLE. EXISTING NATURAL FEATURES OF SPECIAL INTEREST, SUCH AS THOSE HAVING HISTORIC RELEVANCE, SHALL BE DELINEATED AND LOCATED ON THE LANDSCAPING PLAN. A NOTE SHOULD BE ADDED TO THE SITE PLAN INDICATING THAT THE IDENTIFIED FEATURE(S) SHALL BE PROTECTED DURING SITE CLEARING AND CONSTRUCTION THROUGH THE USE OF CONSTRUCTION FENCING OR OTHER ADEQUATE PROTECTIVE BARRIERS. MAXIMUM EFFORT SHOULD BE MADE TO PRESERVE SMALL STANDS OF TREES, RATHER THAN INDIVIDUAL TREES, TO MINIMIZE THE POTENTIAL FOR SERIOUS DAMAGE DUE TO WIND, GRADE CHANGES AND SOIL COMPACTION. NO CONSTRUCTION MATERIALS, EQUIPMENT, VEHICLES, OR TEMPORARY SOIL DEPOSITS SHALL BE LOCATED WITHIN THE DRIPLINE OF EXISTING TREES. BEFORE COMMENCEMENT OF WORK, PROTECTIVE BARRIERS SHALL BE INSTALLED AND MAINTAINED AROUND EACH PLANT AND/OR GROUPS OF PLANTS THAT ARE TO REMAIN ON SITE UNTIL COMPLETION. SNOW FENCE INSTALLED AROUND THE DRIPLINE OF THE TREE CANOPY IS AN EXAMPLE OF AN ACCEPTABLE BARRIER.	EXISTING TREES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION
	G.(1)(c) SHRUBS AND HEDGES SHALL BE A MINIMUM OF 24 INCHES IN HEIGHT WHEN MEASURED IMMEDIATELY AFTER PLANTING. GROUND COVERS AND PERENNIALS MAY BE LESS	PROVIDED
	G.(1)(e) PLANTS, OR A COMBINATION OF PLANTS AND A SOLID VISUAL BARRIER SUCH AS WOODEN FENCING, OR BERMS SHALL BE USED TO SCREEN LOADING, WASTE DISPOSAL, MATERIAL STORAGE AND OTHER AREAS THAT ARE LIKELY TO GENERATE NOISE, DUST, OR OTHER POTENTIALLY DISRUPTIVE CONDITIONS.	PROVIDED
	G.(1)(f) LANDSCAPING SHALL BE USED TO ESTABLISH AND/OR MAINTAIN AN ATTRACTIVE STREETSCAPE ADJACENT TO ROADWAYS. A MINIMUM OF ONE TREE PER 35 LINEAR FEET, NOT MORE THAN SIX FEET APART FOR INDIVIDUAL SHRUBS, AND NOT MORE THAN THREE FEET BETWEEN INDIVIDUAL PERENNIALS AND GROUND COVERS OR PORTION THEREOF SHALL BE PROVIDED.	REQUIRED: 9 TREES PROVIDED: 9 TREES (2 EXISTING, 7 PROPOSED) CALCULATION: 313 LF OF FRONTAGE ALONG DURHAM RD / 35 LF = 8.94 OR 9 TREES
	G.(1)(f) A MAINTENANCE PLAN SHALL BE PROVIDED WITH THE SITE PLAN APPLICATION. ALL LANDSCAPED AREAS SHALL RECEIVE REGULAR MAINTENANCE AND UPKEEP. SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH). BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS, SUCH AS THE USE OF LOW-PHOSPHORUS FERTILIZER AND SLOW-RELEASE NITROGEN, SHALL BE INCLUDED IN THE MANAGEMENT PLAN. IF OWNERSHIP OF A SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.	MAINTENANCE PLAN TO BE PROVIDED BY OWNER REPRESENTATIVE
	G.(1)(a) 21-50 PARKING SPACES REQUIRE A MINIMUM OF 8% INTERIOR LANDSCAPING	REQUIRED: 746 SF INTERIOR LSA PROVIDED: 1,900 SF INTERIOR LSA CALCULATION: 14,900 SF PARKING AREA x 5% = 745.55 SF LSA
	G.(2)(c) THE MINIMUM SIZE FOR LANDSCAPED ISLANDS SHALL BE 250 SQUARE FEET IN TOTAL AREA AND SHOULD INCLUDE TREES WITH SHRUBS, PERENNIALS, AND GROUND COVERS PLANTED EN MASSE AMONG THE TREES.	PROVIDED
	G.(2)(d) THE INTRODUCTION OF GROUND COVERS AND/OR PERENNIALS PLANTED EN MASSE AND THE USE OF MULCH AS A SOIL COVERING IS ACCEPTABLE. NO MORE THAN 20% OF THE MINIMUM LANDSCAPED AREA MAY BE COVERED WITH NONLIVING LANDSCAPING MATERIAL, SUCH AS BARK MULCH, WOOD CHIPS, OR LEAF LITTER.	PROVIDED
	G.(3)(a) ALONG THE PERIMETER OF PARKING LOTS WITH 10 OR MORE SPACES, DECIDUOUS AND/OR EVERGREEN SHADE TREES SHALL BE PLANTED AT 35 FEET ON CENTER WITHIN THE BUFFER AREA REQUIRED BY § 153-17C. TREES SHALL BE SPECIES TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM CALIPER OF 3 INCHES (MEASURED AT FOUR FEET ABOVE GRADE LEVEL). WITHIN THE PERIMETER BUFFER, SHRUBS SHALL BE PLANTED BETWEEN THE TREES AT FIVE FEET ON CENTER. THE SHRUBS SHALL BE A MIX OF DECIDUOUS AND EVERGREEN SPECIES, TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM HEIGHT OF TWO FEET AT THE TIME OF PLANTING.	TREES: REQUIRED: 12 TREES PROVIDED: 12 TREES CALCULATION: 408 LF / 35 LF = 11.65 TREES SHRUBS: REQUIRED: 82 SHRUBS PROVIDED: 118 SHRUBS CALCULATION: 408 LF / 5 LF = 81.6 SHRUBS
	G.(3)(c) TO FOSTER BIOLOGICAL DIVERSITY, TREES PLANTED ALONG A GIVEN STREET SHALL USE THE 10-20-30 RULE (NO MORE THAN 10% OF THE TREES SHALL BE OF THE SAME SPECIES, NO MORE THAN 20% IN THE SAME GENUS, AND NO MORE THAN 30% IN THE SAME FAMILY).	PROVIDED
	G.(3)(d) TO ENSURE THAT LANDSCAPE MATERIALS DO NOT CONSTITUTE A DRIVING HAZARD, A CLEAR SIGHT TRIANGLE SHALL BE OBSERVED AT ALL STREET AND ACCESS DRIVE INTERSECTIONS. GROUND COVER AND TREES WITH AT LEAST EIGHT FEET OF LIMBLESS TRUNK SHALL BE PERMITTED WITHIN THE SIGHT DISTANCE TRIANGLE. IN THE CASE OF A CITY STREET INTERSECTION, THE SIGHT TRIANGLE SHALL CONSIST OF THE AREA BETWEEN POINTS 20 FEET ALONG BOTH INTERSECTING STREETS FROM THEIR RESPECTIVE EDGES OF PAVEMENT.	PROVIDED
	G.(5)(a) EACH EXISTING HEALTHY AND NATIVE OR NONINVASIVE TREE, WITH A CALIPER OF THREE INCHES OR GREATER, PRESERVED USING PROPER PROTECTION METHODS WITHIN THE INTERIOR PARKING LOT AREA MAY BE SUBSTITUTED FOR ONE TREE REQUIRED FOR EVERY 10 PARKING SPACES.	REQUIRED: 2.3 INTERIOR TREES PROVIDED: 9 INTERIOR TREES CALCULATION: 43 SPACES - 20 (2 EX TREES) = 23 23 / 10 = 2.3 TREES
§153-16	B.(7)LANDSCAPING AND GRADING (c) FOR THE OVERALL SITE USE A MIXTURE OF DECIDUOUS AND EVERGREEN TREES	PROVIDED
	B.(7)(d) IF RETAINING WALLS IN RETENTION BASINS ARE NECESSARY, THEY SHOULD BE LANDSCAPED TO REDUCE THEIR VISUAL SCALE	PROVIDED
	B.(7)(f) NO MORE THAN 25% OF THE TOTAL GROUND AREA OF A LANDSCAPE AREA SHALL BE COMPRISED ON NONLIVING ORNAMENTAL MATERIALS	PROVIDED
	B.(7)(g) A MINIMUM OF TWO TREES AND FOUR SHRUBS FOR EACH 1,000 SQUARE FEET OF LANDSCAPED AREA SHALL BE PROVIDED	PROVIDED
	B.(7)(h) DECIDUOUS TREES SHALL BE AT LEAST TWO-INCH CALIPER MEASURED FOUR FEET ABOVE THE GROUND, EXCEPT ORNAMENTAL AND FLOWERING TREES SHALL BE AT LEASE AND-ONE-HALF-INCH CALIPER	PROVIDED
	B.(7)(i) CONIFEROUS TREES SHALL BE AT LEAST SIX FEET TALL	PROVIDED



MONUMENT SIGN PLANTING EXHIBIT

SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED BASIN MIX
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
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TRANSPORTATION SERVICES

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SITE ID #: 28-0178

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M.J. MRVA
MATTHEW J. MRVA
REGISTERED LANDSCAPE ARCHITECT
MASSACHUSETTS No. 1
RHODE ISLAND No. 1
CONNECTICUT No. 00
NEW HAMPSHIRE No. 9
VERMONT No. 1
OHIO No. 250433

SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:

L-101

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-LSCP-MAA240177.00-4A-----LAYOUT: L-101 LSCP

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK:

1.1. THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

2.1. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

2.2. TOPSOIL - NATURAL, FRIABLE LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.

2.3. LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM 6" THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED ON THE LANDSCAPE PLAN

2.3.1. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.

2.3.2. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.

2.4. MULCH - ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN AND/OR LANDSCAPE PLAN NOTES /DETAILS.

2.5. FERTILIZER

2.5.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.

2.5.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.

2.6. PLANT MATERIAL

2.6.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN).

2.6.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.

2.6.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.

2.6.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.

2.6.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.

2.6.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.

2.6.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.

2.6.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

3.1. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.

3.2. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

4.1. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.

4.2. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.

4.3. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

5.1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.

5.2. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE', OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.

5.3. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

5.4. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

6.1. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.2. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.

6.3. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.3.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.

6.3.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.

6.3.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

7.1. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.

7.2. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1"±).

7.3. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.

7.4. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

8.1. CONTRACTOR SHALL PROVIDE A 6" THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.

8.2. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.

8.3. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.

8.4. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA - FOR BID PURPOSES ONLY (SEE SPECIFICATION 8.A.)):

8.4.1. 20 POUNDS 'GRO-POWER' OR APPROVED SOIL CONDITIONER/FERTILIZER

8.4.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER

8.5. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING

9.1. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

9.2. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

9.3. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

9.4. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.

9.5. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.

9.6. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:

9.6.1. PLANTS: MARCH 15 TO DECEMBER 15

9.6.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1

9.6.3. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.

9.7. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM	PLATANUS X ACERIFOLIA
BETULA VARIETIES	POPULUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA VARIETIES

9.8. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:

9.8.1. 1 PART PEAT MOSS

9.8.2. 1 PART COMPOSTED COW MANURE BY VOLUME

9.8.3. 3 PARTS TOPSOIL BY VOLUME

9.8.4. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
- 9.8.4.1. 2 TABLETS PER 1 GALLON PLANT
- 9.8.4.2. 3 TABLETS PER 5 GALLON PLANT
- 9.8.4.3. 4 TABLETS PER 15 GALLON PLANT
- 9.8.4.4. LARGER PLANTS: 2 TABLETS PER ½" CALIPER OF TRUNK

9.9. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.

9.10. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.

9.11. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.

9.12. GROUND COVER AREAS SHALL RECEIVE A ¼" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.

9.13. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.

9.14. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.

9.15. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)

10.1. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT.

10.2. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.

10.3. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.

10.4. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.

10.5. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.

10.6. F TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING

11.1. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.

11.2. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.

11.3. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE

12.1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF 1 YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

12.2. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.

12.3. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.

12.4. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP

13.1. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.

13.2. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

14. MAINTENANCE (ALTERNATIVE BID):

14.1. A 90 DAY MAINTENANCE PERIOD SHALL COMMENCE AT THE END OF ALL LANDSCAPE INSTALLATION OPERATIONS. THE 90 DAY MAINTENANCE PERIOD ENSURES TO THE OWNER/OPERATOR THAT THE NEWLY INSTALLED LANDSCAPING HAS BEEN MAINTAINED AS SPECIFIED ON THE APPROVED LANDSCAPE PLAN. ONCE THE INITIAL 90 DAY MAINTENANCE PERIOD HAS EXPIRED, THE OWNER/OPERATOR MAY REQUEST THAT BIDDERS SUBMIT AN ALTERNATE MAINTENANCE BID FOR A MONTHLY MAINTENANCE CONTRACT. THE ALTERNATE MAINTENANCE CONTRACT WILL ENCOMPASS ANY WORK THAT IS CONSIDERED APPROPRIATE TO ENSURE THAT PLANT AND LAWN AREAS ARE HEALTHY AND MANICURED TO THE APPROVAL OF THE OWNER/OPERATOR.

"NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX" AS PREPARED BY:

NEW ENGLAND WETLAND PLANTS, INC
820 WEST STREET, AMHERST, MA 01002
PHONE: 413-548-8000
EMAIL: INFO@NEWP.COM
WEBSITE: WWW.NEWP.COM

APPLICATION RATE: 25LBS/ACRE | 1750 SQ FT/LB
MINIMUM ORDER: 2 LBS
SPECIES: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).

NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX SPECIFICATIONS

"NATIVE DETENTION AREA MIX" AS PREPARED BY:

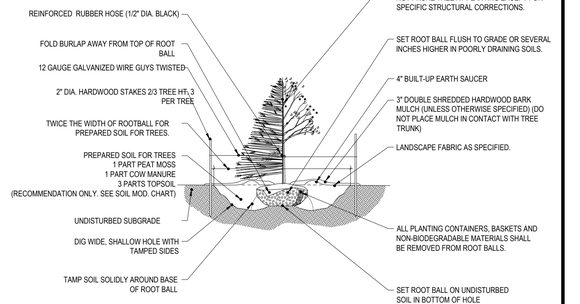
ERNST CONSERVATION SEEDS, INC.
8884 MERCER PIKE, MEADVILLE, PA 16335
PHONE: 800-873-3321 / 814-336-2404
EMAIL: SALES@ERNSTSEED.COM
WEBSITE: WWW.ERNSTSEED.COM

APPLICATION RATE: 1/2 LB. / 1000 SQ. FT. (20 LBS. / ACRE)

MIX COMPOSITION:
25.0% PANICUM VIRGATUM, 'SHELTER' (SWITCHGRASS, 'SHELTER')
24.0% PANICUM CLANDESTINUM, 'TIOGA' (DEERTONGUE, 'TIOGA')
22.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
21.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
6.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
1.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)

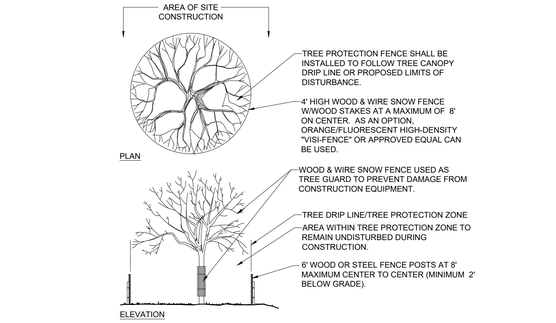
BASIN SEED MIX SPECIFICATIONS

NOTES:
1.) NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.
2.) REMOVE ALL NON-BIODEGRADABLE MATERIAL AND ROPE FROM TRUNK & TOP OF ROOT BALL. FOLD BURLAP BACK 1/3 FROM ROOT BALL.
3.) PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.
4.) THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH
AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
5.) THE BOTTOM OF PLANTING PIT EXCAVATIONS SHOULD BE ROUGH TO AVOID MATTING OF SOIL LAYERS AS
NEW SOIL IS ADDED. IT IS PREFERABLE TO TILL THE FIRST LIFT (2 TO 3 IN.) OF PLANTING SOIL INTO THE SUBSOIL.
6.) REFER TO THE CHART "GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS" TO DETERMINE MINIMUM WIDTH OF PREPARED SOIL.
7.) SUBSTITUTE ARBORVITAE STAKING SYSTEM WHEN SPECIFIED.



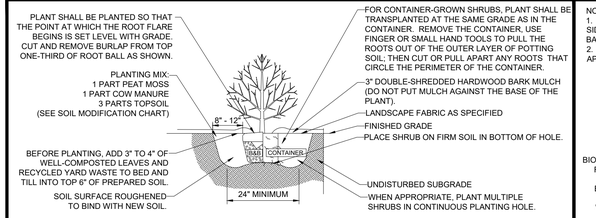
TREE PLANTING DETAIL

N.T.S.



TREE PROTECTION DURING SITE CONSTRUCTION

N.T.S.


PLANT SHALL BE PLANTED SO THAT THE POINT AT WHICH THE ROOT FLARE BEGINS IS SET LEVEL WITH GRADE. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF ROOT BALL AS SHOWN.
PLANTING MIX
1 PART PEAT MOSS
1 PART COW MANURE
3 PARTS TOPSOIL
(SEE SOIL MODIFICATION CHART)
BEFORE PLANTING, ADD 3" TO 4" OF WELL-COMPOSTED LEAVES AND RECYCLED YARD WASTE TO BED AND TILL INTO TOP 8" OF PREPARED SOIL.
SOIL SURFACE ROUGHENED TO BIND WITH NEW SOIL.
8" - 12"
24" MINIMUM
FOR CONTAINER-GROWN SHRUBS, PLANT SHALL BE TRANSPLANTED AT THE SAME GRADE AS IN THE CONTAINER. REMOVE THE CONTAINER. USE FINGER OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS THAT CIRCLE THE PERIMETER OF THE CONTAINER.
3" DOUBLE-SHREDDED HARDWOOD BARK MULCH (DO NOT PUT MULCH AGAINST THE BASE OF THE PLAN

NAD83

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF WORK LINE (TYP)

172.09'
S24°08'19"W

84.08'
S08°44'35"E

162.91'
S56°46'54"E

52.03'
S65°46'54"E

47.83'
S54°08'19"W

44.34'
S24°08'34"W

42.03'
S10°32'45"W

N65°41'53"W
88.01'

N60°12'10"W
48.72'

N65°40'47"W
75.52'

N24°13'06"E
313.87'

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 5496, PG. 746. (DOT HATCH)

DO NOT BLOCK

DRIVE THRU

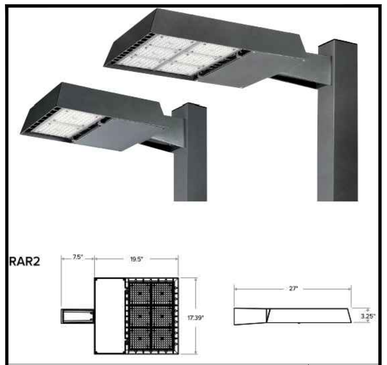
ONE WAY

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/28/2025

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'



LIGHT FIXTURE DETAIL — N.T.S.

NEW HAMPSHIRE LIGHTING NOTES

(Rev. 6/2023)

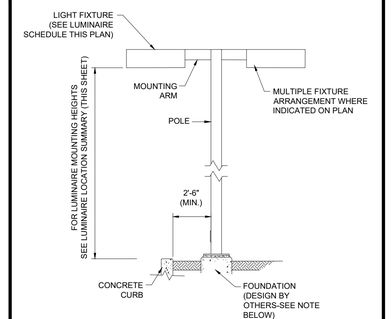
1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THIS LIGHTING PLAN DEPICTS PROPOSED SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER(S). ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
3. THE LIGHT LOSS FACTORS (LLF) DEPICTED IN THE LUMINAIRE SCHEDULE ON THIS PLAN ARE BASED ON DATA PROVIDED BY THE MANUFACTURER FOLLOWING IES LM-80-08 TESTING. THE LIGHT LEVELS DEPICTED ON THIS PLAN WERE CALCULATED BASED ON THE LLF LISTED IN THE LUMINAIRE SCHEDULE.
4. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOTCANDLES (FC).
5. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT IS NOT LIMITED TO, VISUAL OBSERVATION, CLEANING OF LENSES, AND RE-LAMPING (IF NECESSARY) ACCORDING TO MANUFACTURER RECOMMENDATIONS. FAILURE TO FOLLOW THE ABOVE STEPS COULD RESULT IN IMPROPER LIGHT DISTRIBUTION AND FAILURE TO COMPLY WITH THE APPROVED DESIGN. UPON COMPLETION AND OWNER'S ACCEPTANCE OF THE WORK, THE ABOVE RESPONSIBILITIES BECOMES SOLELY THE OWNER'S.
6. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
7. THIS LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES, ONLY. POWER SYSTEM, CONDUITS, WIRING, VOLTAGES AND OTHER ELECTRICAL COMPONENTS ARE THE RESPONSIBILITY OF THE ARCHITECT, MEP AND/OR LIGHTING CONTRACTOR, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS. LIGHT POLE BASES ARE THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR INSTALLING LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES AND ALL OTHER APPLICABLE RULES, REGULATIONS, LAWS AND STATUTES.
8. CONTRACTOR MUST BRING TO DESIGNER'S ATTENTION, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURES.
9. IT IS THE LIGHTING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROJECT ARCHITECT OR OWNER REGARDING ANY AND ALL POWER SOURCE(S) , AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS.
10. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SHIELDING AND OR ROTATED OPTICS ARE INSTALLED AS INDICATED ON THE PLAN IN ORDER TO ACHIEVE THE LIGHTING LEVELS THE REVIEWING AGENCY APPROVED.
11. THE LIGHTING CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE SITE PLAN, INCLUDING BUT NOT LIMITED TO, GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL GOVERNMENTAL RULES, LAWS, ORDINANCES, REGULATIONS AND THE LIKE.
12. THE CONTRACTOR MUST VERIFY THAT INSTALLATION OF LIGHTING FIXTURES COMPLIES WITH THE REQUIREMENTS FOR SEPARATION FROM OVERHEAD ELECTRICAL WIRES PER STATE REGULATIONS.
13. WHEN A BANK ATM IS INCLUDED IN THE PLAN, THE LIGHTING DESIGN REPRESENTS BOHLER'S UNDERSTANDING AND INTERPRETATION OF THE REGULATORY LIGHTING LEVELS INTENDED BY PUBLISHED STANDARDS.
14. UPON OWNER'S ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.

NUMERIC SUMMARY

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PAVED SURFACE READINGS	ILLUMINANCE	FC	2.46	5.6	0.5	6±	14.00
PROPERTY LINE READINGS	ILLUMINANCE	FC	0.08	0.9	0.0	N/A	N/A
OVERALL READINGS	ILLUMINANCE	FC	0.43	5.9	0.0	N/A	N/A

LUMINAIRE SCHEDULE

SYMBOL	QTY	ARRANGEMENT	LUM WATTS	LLF	DESCRIPTION	MOUNTING HEIGHT
AB	5	SINGLE	226.9	0.85	RAR2-480L-240-5K7-4W SES-18-40-1-TA-GL-XX (4") POLE	21'
A2	1	BACK-BACK	226.9	0.85	RAR2-480L-240-5K7-4W-BC SES-18-40-1-TA-GL-XX (4") POLE	21'



AREA LIGHT DETAIL — N.T.S.

NOTE: THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A FOUNDATION DESIGN PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS AND SITE SPECIFIC SOIL PARAMETERS.

- SOME SITE CONDITIONS AND/OR LOCATIONS MAY REQUIRE VIBRATION DAMPENING MEASURES AS DETERMINED BY A STRUCTURAL ENGINEER.
- THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING TO THE POLE, ASIDE FROM THE LIGHT FIXTURES, INCLUDING BUT NOT LIMITED TO CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABILITY DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

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ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-4A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUDICH — KUDICH — PROFESSIONAL ENGINEER — MASSACHUSETTS LICENSE NO. 52553 — NEW HAMPSHIRE LICENSE NO. 17476 — COMMONWEALTH OF VIRGINIA NO. 039177 — RHODE ISLAND LICENSE NO. 9616 — MAINE LICENSE NO. 12553 — ORIGINAL SIGNATURE AND SEAL

SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:

L-201

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-4A-----%LAYOUT:L-201 LGHT

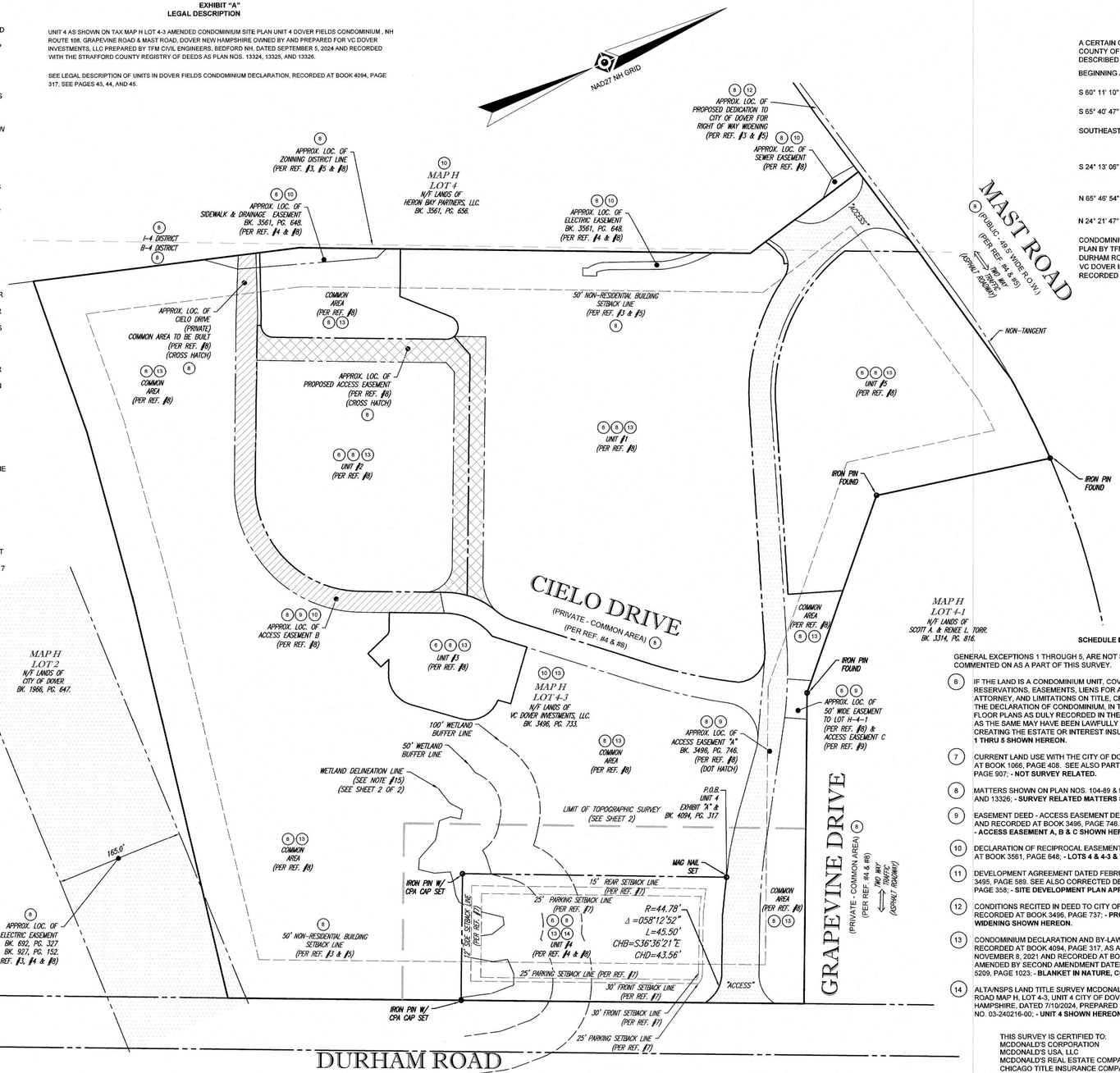
REFERENCES:

1. THE GIS MAP OF CITY OF DOVER, STRAFFORD COUNTY, MAP H.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), PANEL 320 OF 405," MAP NUMBER 33017C0320E, MAP REVISED: SEPTEMBER 30, 2015.
3. MAP ENTITLED "TAX MAP H, LOT 4, SUBDIVISION PLAN (1 OF 2), MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 30, 2006. SHEET 1 OF 2. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 89, PAGE 40.
4. MAP ENTITLED "TAX MAP H, LOT 4-3, OVERALL SITE PLAN - PHASE 4C. MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 18, 2022, LAST REVISED FEBRUARY 28, 2023. SHEET 2 OF 23.
5. MAP ENTITLED "TAX MAP H, LOT 4, SUBDIVISION PLAN (2 OF 2), MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 30, 2006. SHEET 2 OF 2. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 89, PAGE 41.
6. UNDERGROUND WATER MAPPING IN THE AREA PROVIDED BY CITY OF DOVER.
7. MAP ENTITLED "PROPOSED RESTAURANT TACO BELL - CHARTER FOODS, DURHAM ROAD (NH 108) AND GRAPEVINE DRIVE CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, EXISTING CONDITION & DEMOLITION PLAN" PREPARED BY CHRISTOPHER J. BEDNAR, DATED JULY 5, 2022, LAST REVISED OCTOBER 27, 2022. SHEET C1.0
8. MAP ENTITLED "TAX MAP H, LOT 4-3, CONDOMINIUM SITE PLAN, DOVER FIELDS CONDOMINIUM, DURHAM ROAD (NH ROUTE 108) & MAST ROAD DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC," PREPARED BY TFM, DATED JUNE 15, 2012. TWO SHEETS. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 104, PAGE 89 & 90.
9. MAP ENTITLED "TAX MAP H, LOT 4 & 4-3, SITE EASEMENT PLAN, MIXED USE DEVELOPMENT RETAIL PHASE. (NH ROUTE 108) & MAST ROAD DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC," PREPARED BY TFM, DATED FEBRUARY 15, 2007. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 91, PAGE 43.
10. UNDERGROUND GAS MAPPING IN THE AREA PROVIDED BY UNITIL.
11. MAP ENTITLED "ALTA/NSPS LAND TITLE SURVEY", PREPARED FOR McDONALD'S USA, LLC, PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED JULY 10, 2024.
12. MAP ENTITLED "TAX MAP H, LOT 4-3, AMENDED CONDOMINIUM SITE PLAN, UNIT 4 DOVER FIELD CONDOMINIUM , NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD, DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE' BEDFORD, NEW HAMPSHIRE" PREPARED BY TFM, DATED SEPTEMBER 5, 2024. 3 SHEETS.
13. SKETCH OF WETLAND DELINEATION PREPARED BY GODDARD CONSULTING.
14. MAP ENTITLED "STATE OF NEW HAMPSHIRE, STATE HIGHWAY DEPARTMENT, PLAN & PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 211-B, N.H. COLLEGE ROAD," PREPARED BY THE STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT, FISCAL YEAR 1932. SHEETS 6 & 7 OF 22.

EXHIBIT "A"
LEGAL DESCRIPTION

UNIT 4 AS SHOWN ON TAX MAP H LOT 4-3 AMENDED CONDOMINIUM SITE PLAN UNIT 4 DOVER FIELDS CONDOMINIUM , NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD, DOVER NEW HAMPSHIRE OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC PREPARED BY TFM CIVIL ENGINEERS, BEDFORD NH, DATED SEPTEMBER 5, 2024 AND RECORDED WITH THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN NOS. 13324, 13325, AND 13326.

SEE LEGAL DESCRIPTION OF UNITS IN DOVER FIELDS CONDOMINIUM DECLARATION, RECORDED AT BOOK 4094, PAGE 317, SEE PAGES 43, 44, AND 45.



SEE SHEET 2 OF 2 FOR TOPOGRAPHIC & UTILITIES

GRAPHIC SCALE
80' 0 40' 80' 160' 320'
(IN FEET)
1 inch = 80 ft.

No.	DESCRIPTION OF REVISION	FIELD CREW	DRAWN:	APPROVED:	DATE
2	REVISED PER UPDATED WETLAND DELINEATION LINE	J.D.O.	J.P.M.	J.P.L.	5-15-2025
1	REVISED PER NEW TITLE & FIELD VISIT	B.S.B.	J.P.M.	J.P.L.	3-17-2025

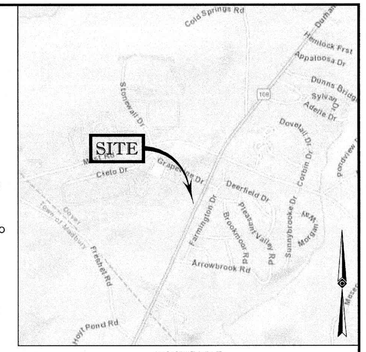
LEGAL DESCRIPTION OF CONDOMINIUM UNIT #4
DOVER FIELDS CONDOMINIUM
NEW HAMPSHIRE ROUTE 1 08, DOVER, NEW HAMPSHIRE

A CERTAIN CONDOMINIUM UNIT 4, OF THE DOVER FIELDS CONDOMINIUM, IN THE CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF CONDOMINIUM UNIT 4; THENCE

S 60° 11' 10" E	A DISTANCE OF 48.72 FEET TO A POINT; THENCE
S 65° 40' 47" E	A DISTANCE OF 75.52 FEET TO A POINT; THENCE
SOUTHEASTERLY	ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 44.78 FEET, A DISTANCE OF 45.50 FEET TO A POINT ON THE WESTERLY SIDELINE OF NH ROUTE 1 08, DURHAM ROAD; THENCE
S 24° 13' 06" W	BY THE WESTERLY SIDELINE OF DURHAM ROAD A DISTANCE OF 313.87 FEET TO A POINT; THENCE
N 65° 46' 54" W	A DISTANCE OF 162.91 FEET TO A POINT; THENCE
N 24° 21' 47" E	A DISTANCE OF 340.00 FEET TO THE POINT OF BEGINNING.

CONDOMINIUM UNIT 4 CONTAINS 54,340 S.F. +/- OR 1.2475 ACRES+/- AND BEING SHOWN ON A PLAN BY TFMORAN INC. ENTITLED "TAX MAP H LOT 4-3 CONDOMINIUM SITE PLAN PROJECT DURHAM ROAD (NH ROUTE 108) AND MAST ROAD, DOVER, NH OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC, SCALE 1"=40' JUNE 15, 2012," REVISED THROUGH 12/7/2012 AND RECORDED IN THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN #104-089 & 104-090.



LOCUS MAP
NOT TO SCALE

NOTES:

1. PROPERTY KNOWN AS LOT 4-3, UNIT 4 AS SHOWN ON THE CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE, MAP NO. H.
2. AREA LOT 4-3 = 923,185 SQUARE FEET OR 21.193 ACRES.
   AREA UNIT 4 = 54,340 SQUARE FEET OR 1.247 ACRES.
3. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
   - QUALITY LEVEL D - UTILITIES SHOWN BASED UPON REFERENCE MAPPING OR ORAL HISTORY. NOT FIELD VERIFIED.
   - QUALITY LEVEL C - LOCATION OF UTILITY SURFACE FEATURES SUPPLEMENTS REFERENCE MAPPING. INCLUDES MARKOUT BY OTHERS.
   - QUALITY LEVEL B - UTILITY LOCATION DATA IS COLLECTED THROUGH GEOPHYSICAL SENSING TECHNOLOGY TO SUPPLEMENT SURFACE FEATURES AND OR REFERENCE MAPPING. INCLUDES MARKOUT BY CONTROL POINT ASSOCIATES, INC.
   - QUALITY LEVEL A - HORIZONTAL AND VERTICAL LOCATION OF UTILITIES ARE OBTAINED USING VACUUM EQUIPMENT EXCAVATION OR OTHER METHODS TO EXPOSE THE UTILITY. LOCATION SHOWN AT SINGLE POINT WHERE EXCAVATION OCCURRED UNLESS UTILITY WAS LOCATED PRIOR TO FILLING.

   ALL FOUR TYPES MAY NOT BE PRESENT ON THIS SURVEY.
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
5. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF COMMITMENT FOR TITLE INSURANCE PREPARED BY CHICAGO TITLE INSURANCE COMPANY, COMMITMENT FOR TITLE INSURANCE NO. 241521- NCS (LJC: 028-0178), WITH AN EFFECTIVE DATE OF OCTOBER 10, 2024. FOR EXCEPTIONS LIST, SEE SCHEDULE B, PART II.

   THIS SURVEY DOES NOT ADDRESS OWNERSHIP AND POSSIBLE RIGHTS OF ADJOINING PROPERTIES.

   THIS SURVEY IS THE OPINION OF THE SURVEYOR AND IS NOT A LEGAL DECISION REGARDING PROPERTY BOUNDARY OR RIGHTS.
6. BY GRAPHIC PLOTTING ONLY PROPERTY IS PARTIALLY LOCATED IN FLOOD HAZARD ZONE X- UNSHADED (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PER REF. #2
7. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS) TAKEN AT THE TIME OF THE FIELD SURVEY.

   TEMPORARY BENCH MARKS SET:

   TBM-A: X-CUT SET IN BOLT OVER MAIN OUTLET OF FIRE HYDRANT, ELEVATION= 111.24'

   TBM-B: X-CUT SET ON CORNER OF CONCRETE PAD, ELEVATION= 110.46'

   SEVEN (7) DAYS PRIOR TO CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BENCHMARKS ILLUSTRATED ON THIS SURVEY HAVE NOT BEEN DISTURBED AND THEIR ELEVATIONS HAVE BEEN CONFIRMED.
   ANY CONFLICTS MUST BE REPORTED PRIOR TO CONSTRUCTION. SURVEYOR IS NOT RESPONSIBLE FOR CONTRACTOR'S FAILURE TO COMPLY.
8. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
9. PARTIAL TOPOGRAPHY SHOWN HEREON PER CONTRACTUAL AGREEMENT WITH CLIENT.
10. PROPERTY HAS DIRECT ACCESS TO DURHAM ROAD & INDIRECT ACCESS TO MAST ROAD & DURHAM ROAD VIA ACCESS EASEMENT RECORDED IN BOOK 3561, PAGE 648.
11. NO PARKING STRIPES WERE OBSERVED WITHIN THE SURVEY AREA AT THE TIME OF THE FIELD WORK.
12. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.
13. NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES HAVE BEEN MADE AVAILABLE TO THE SURVEYOR BY THE CONTROLLING JURISDICTION.
14. NO BUILDING OBSERVED WITHIN SURVEY AREA AT THE TIME OF FIELD WORK.
15. THE WETLANDS LIMITS SHOWN ON THIS SURVEY ARE BASED ON WETLANDS FIELD IDENTIFICATION MARKERS PLACED BY GODDARD CONSULTING ON APRIL 29, 2025 AND FIELD LOCATED BY CONTROL POINT ASSOCIATES INC. ON MAY 2, 2025. AT THE TIME OF THIS MAPPING, SAID WETLAND BOUNDARY LIMITS ARE SUBJECT TO CONFIRMATION.
16. ANY DISCREPANCIES FOUND ON THE SURVEY SHOULD BE REPORTED TO THE SURVEYOR IMMEDIATELY.
17. THIS SURVEY WAS PREPARED FOR THE CLIENT, MCDONALD'S USA, LLC & BOHLER ENGINEERING MA, LLC AND INTENDED ONLY FOR THE USE BY THE CLIENT AS CONTRACTED FOR THE PROJECT AND THE PURPOSE ORIGINALLY INTENDED. NO FURTHER PARTIES OTHER THAN THOSE CERTIFIED HEREON SHALL RELY ON IT FOR ANY PURPOSE.

SCHEDULE B, PART II

GENERAL EXCEPTIONS 1 THROUGH 5, ARE NOT SURVEY RELATED AND HAVE NOT BEEN COMMENTED ON AS A PART OF THIS SURVEY.

6. IF THE LAND IS A CONDOMINIUM UNIT, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, LIENS FOR ASSESSMENTS, OPTIONS, POWERS OF ATTORNEY, AND LIMITATIONS ON TITLE, CREATED BY STATE LAW OR SET FORTH IN THE DECLARATION OF CONDOMINIUM, IN THE RELATED BY-LAWS, OR SITE PLANS AND FLOOR PLANS AS DULY RECORDED IN THE APPROPRIATE LAND RECORDS OFFICE AND AS THE SAME MAY HAVE BEEN LAWFULLY AMENDED, AND IN ANY INSTRUMENTS CREATING THE ESTATE OR INTEREST INSURED BY THIS POLICY; - **CONDOMINIUM UNITS 1 THRU 5 SHOWN HEREON.**
7. CURRENT LAND USE WITH THE CITY OF DOVER DATED JUNE 8, 1981 AND RECORDED AT BOOK 1066, PAGE 408. SEE ALSO PARTIAL RELEASE RECORDED AT BOOK 3553, PAGE 907; - **NOT SURVEY RELATED.**
8. MATTERS SHOWN ON PLAN NOS. 104-89 & 90, 89-40 & 41, 91-43, AND 64-23, 13324, 13325 AND 13326; - **SURVEY RELATED MATTERS SHOWN HEREON.**
9. EASEMENT DEED - ACCESS EASEMENT DESCRIBED IN DEED DATED FEBRUARY 21, 2007 AND RECORDED AT BOOK 3496, PAGE 746. SEE ALSO EASEMENT PLAN 91-43; - **ACCESS EASEMENT A, B & C SHOWN HEREON.**
10. DECLARATION OF RECIPROCAL EASEMENTS DATED AUGUST 7, 2007 AND RECORDED AT BOOK 3561, PAGE 648; - **LOTS 4 & 4-3 & VARIOUS EASEMENTS SHOWN HEREON.**
11. DEVELOPMENT AGREEMENT DATED FEBRUARY 20, 2007 AND RECORDED AT BOOK 3495, PAGE 589. SEE ALSO CORRECTED DEVELOPMENT AGREEMENT AT BOOK 3534, PAGE 358; - **SITE DEVELOPMENT PLAN APPROVAL; NOT PLOTTABLE.**
12. CONDITIONS RECITED IN DEED TO CITY OF DOVER DATED FEBRUARY 21, 2007 AND RECORDED AT BOOK 3496, PAGE 737; - **PROPOSED DEDICATION FOR RIGHT OF WAY WIDENING SHOWN HEREON.**
13. CONDOMINIUM DECLARATION AND BY-LAWS DATED DECEMBER 14, 2012 AND RECORDED AT BOOK 4094, PAGE 317, AS AMENDED BY FIRST AMENDMENT DATED NOVEMBER 8, 2021 AND RECORDED AT BOOK 4979, PAGE 349, AND AS FURTHER AMENDED BY SECOND AMENDMENT DATED AUGUST 30, 2024 AND RECORDED AT BOOK 5209, PAGE 1023; - **BLANKET IN NATURE, COMMON AREAS & UNITS SHOWN HEREON.**
14. ALTA/NSPS LAND TITLE SURVEY MCDONALD'S USA, LLC GRAPEVINE DRIVE & 250 MAST ROAD MAP H, LOT 4-3, UNIT 4 CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE, DATED 7/10/2024, PREPARED BY CONTROL POINT ASSOCIATES, INC., FILE NO. 03-240216-00; - **UNIT 4 SHOWN HEREON.**

THIS SURVEY IS CERTIFIED TO:
MCDONALD'S CORPORATION
MCDONALD'S USA, LLC
MCDONALD'S REAL ESTATE COMPANY
CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT WAS BASED WERE MADE IN ACCORDANCE WITH THE "2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(a), 7(b)(1), 7(c), 8, 9, 11(a), 13 & 14 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MAY 2, 2025.

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STATE OF NEW HAMPSHIRE — No. 899 — JOHN P. LYNCH — LICENSED LAND SURVEYOR

5-15-2025
DATE

JOHN P. LYNCH
NEW HAMPSHIRE PROFESSIONAL LAND SURVEYOR #899

FIELD DATE	6-19-2024 3-6-2025 5-2-2025
FIELD BOOK NO.	23-03 MA 25-01 MA 24-14 MA
FIELD BOOK PG.	58 63 103
FIELD CREW	B.S.B. J.D.O.
DRAWN:	R.A.B.
REVIEWED:	R.J.K.
APPROVED:	J.P.L.
DATE	07-10-2024
SCALE	1"=80'
FILE NO.	03-240216-00
DWG. NO.	1 OF 2

ALTA/NSPS LAND TITLE SURVEY
McDONALD'S USA, LLC
GRAPEVINE DRIVE & 250 MAST ROAD
MAP H, LOT 4-3, UNIT 4
CITY OF DOVER, STRAFFORD COUNTY
LIC# 028-0178 STATE OF NEW HAMPSHIRE

CONTROL POINT ASSOCIATES, INC.
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
508.948.3000
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WARREN, NJ 908.668.0099
CRANFORD, PA 215.717.1002
MT. LAUREL, NJ 609.207.2010
MANHATTAN, NY 646.780.0411
LONG ISLAND, NY 631.580.2642
ALBANY, NY 518.217.1010
ROCHESTER, NY 585.250.3704
PRINCETON, NJ 609.375.2035
HUDSON VALLEY, NY 845.691.7339
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NAD27 NH GRID

LEGEND

124	EXISTING CONTOUR
125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXISTING TOP OF CURB ELEVATION
× BC 123.45	EXISTING BOTTOM OF CURB ELEVATION
× TW 123.45	EXISTING TOP OF WALL ELEVATION
× BW 122.95	EXISTING BOTTOM OF WALL ELEVATION
WV	HYDRANT
	WATER VALVE
OH	OVERHEAD WIRES
G	APPROX. LOC. UNDERGROUND GAS LINE
E	APPROX. LOC. UNDERGROUND ELECTRIC LINE
D	APPROX. LOC. UNDERGROUND DRAINAGE LINE
S	APPROX. LOC. UNDERGROUND SANITARY / SEWER LINE
W	APPROX. LOC. UNDERGROUND WATER LINE
UP	UTILITY POLE
	PAINTED ARROWS
S SMH	SANITARY/SEWER MANHOLE
CB	CATCH BASIN OR INLET
TREE & TRUNK SIZE	
EOC	EDGE OF CONCRETE
EOP	EDGE OF PAVEMENT
(TYP.)	TYPICAL
SWL	SOLID WHITE LINE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
INV	INVERT ELEVATION
GRT	GRATE ELEVATION
SGC	SLOPE GRANITE CURB
VGC	VERTICAL GRANITE CURB
-Qc-	SUBSURFACE UTILITY QUALITY LEVEL C
-Qd-	SUBSURFACE UTILITY QUALITY LEVEL D
(#)	TITLE REPORT EXCEPTION
MF	DELINEATION FLAG

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 inch = 20 ft.

THIS SURVEY IS CERTIFIED TO:
MCDONALD'S CORPORATION
MCDONALD'S USA, LLC
MCDONALD'S REAL ESTATE COMPANY
CHICAGO TITLE INSURANCE COMPANY

No.	DESCRIPTION OF REVISION	FIELD CREW	DRAWN:	APPROVED:	DATE
2	REVISED PER UPDATED WETLAND DELINEATION LINE	J.D.O.	J.P.M.	J.P.L.	5-15-2025
1	REVISED PER NEW TITLE & FIELD VISIT	B.S.B.	J.P.M.	J.P.L.	3-17-2025

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NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLUE INK SEAL.

STATE OF NEW HAMPSHIRE — No. 9393 JOHN P. LYNCH — LICENSED LAND SURVEYOR — SIGNATURE

5-15-2025
DATE

JOHN P. LYNCH
NEW HAMPSHIRE PROFESSIONAL LAND SURVEYOR #999

FIELD DATE	5-19-2024 3-5-2025 5-5-2025
FIELD BOOK NO.	23-03 MA 23-01 MA 24-14 MA
FIELD BOOK PG.	58 63 103
FIELD CREW	B.S.B. J.D.O.
DRAWN:	R.A.B.
REVIEWED:	R.J.K.

ALTA/NSPS LAND TITLE SURVEY
McDONALD'S USA, LLC
GRAPEVINE DRIVE & 250 MAST ROAD
MAP H, LOT 4-3, UNIT 4
CITY OF DOVER, STRAFFORD COUNTY
STATE OF NEW HAMPSHIRE
L/C# 028-0178

CONTROL POINT ASSOCIATES, INC.
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ALBANY, NY 518.250.0561
ROCHESTER, NY 585.210.3764
PHILADELPHIA, PA 215.712.9690
HUDSON VALLEY, NY 845.691.7339
FT. LAUDERDALE, FL 954.703.7911

APPROVED:	DATE	SCALE	FILE NO.	DWG. NO.
J.P.L.	07-10-2024	1"=20'	03-240216-00	2 OF 2

SEE SHEET 1 OF 2 FOR EXCEPTIONS & EXHIBIT "A"
SEE SHEET 1 OF 2 FOR NOTE AND REFERENCES

NAD83

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

172.09'
S24°08'19"W

12' SIDE YARD BUILDING SETBACK

84.08'
S09°44'35"E

25' PARKING SETBACK

47.83'
S64°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

DRIVE THRU

DRIVE THRU

DRIVE THRU

VAN

STOP

DO NOT ENTER

STOP

N56°47'53"W
69.80'

BLOCK NOT DO

52.03'
S65°46'54"E

64'

16'

8'

32'

4'

2'

N09°11'10"W
48.72'

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)

THRU LANE

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

N05°40'47"W
75.52'

ONLY

ONLY

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)

162.91'
S65°46'54"E

12' SIDE YARD BUILDING SETBACK

25' PARKING SETBACK

30' FRONT YARD BUILDING SETBACK

25' PARKING SETBACK

STOP

DO NOT ENTER

N24°13'06"E
313.87'

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)





MENUBOARD SOUNDS LEGEND

WITH AUTOMATIC VOLUME CONTROL (AVC)

- SOUND LEVELS UP TO 60 DECIBELS
- SOUND LEVELS UP TO 54 DECIBELS
- SOUND LEVELS UP TO 48 DECIBELS
- SOUND LEVELS UP TO 42 DECIBELS
- SOUND LEVELS UP TO 36 DECIBELS
- SOUND LEVELS UP TO 30 DECIBELS

DECIBEL COMPARISON CHART

SOUND OF BREATHING AT 1'	25 DBA
WHISPER IN A QUIET LIBRARY AT 6'	30 DBA
AVERAGE RESIDENCE OR NORMAL PRIVATE OFFICE	40 DBA
NOISE OF NORMAL LIVING OR RADIO IN BACKGROUND	45 DBA
REFRIGERATOR AT 3' OR BIRD TWITTER OUTSIDE AT 45'	50 DBA
LOW VOLUME RADIO OR TV AT 3'	55 DBA
NORMAL CONVERSATION AT 3'	60-65 DBA
CITY TRAFFIC (INSIDE CAR)	85 DBA

MENUBOARD SOUND NOTES

1. SOUND OUTPUT PROVIDED BY THE MANUFACTURER (HME) ON "ENGINEERING DEPARTMENT WHITE PAPER" DATED 07/31/2020 (REV. 2.1).
2. SOUND OUTPUT MEASUREMENTS TAKEN AT ELEVATION APPROXIMATELY 1.5' ABOVE GRADE.
3. SOUND DATA PROVIDED FROM MANUFACTURER ASSUMES AN OPEN PARKING LOT WITH NO OBSTRUCTIONS.
4. SOUND LEVELS ARE REDUCED AT A RATE OF 6 DB FROM DOUBLING OF THE DISTANCE FROM THE SOURCE.
5. THE READINGS ON THE PLANS ARE BASED ON THE AVC BEING ACTIVE AT ALL TIMES

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE, WITHOUT THE EXPRESS AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

811
Know what's below. Call before you dig.
ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-0A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-EXHD-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

SHEET TITLE:

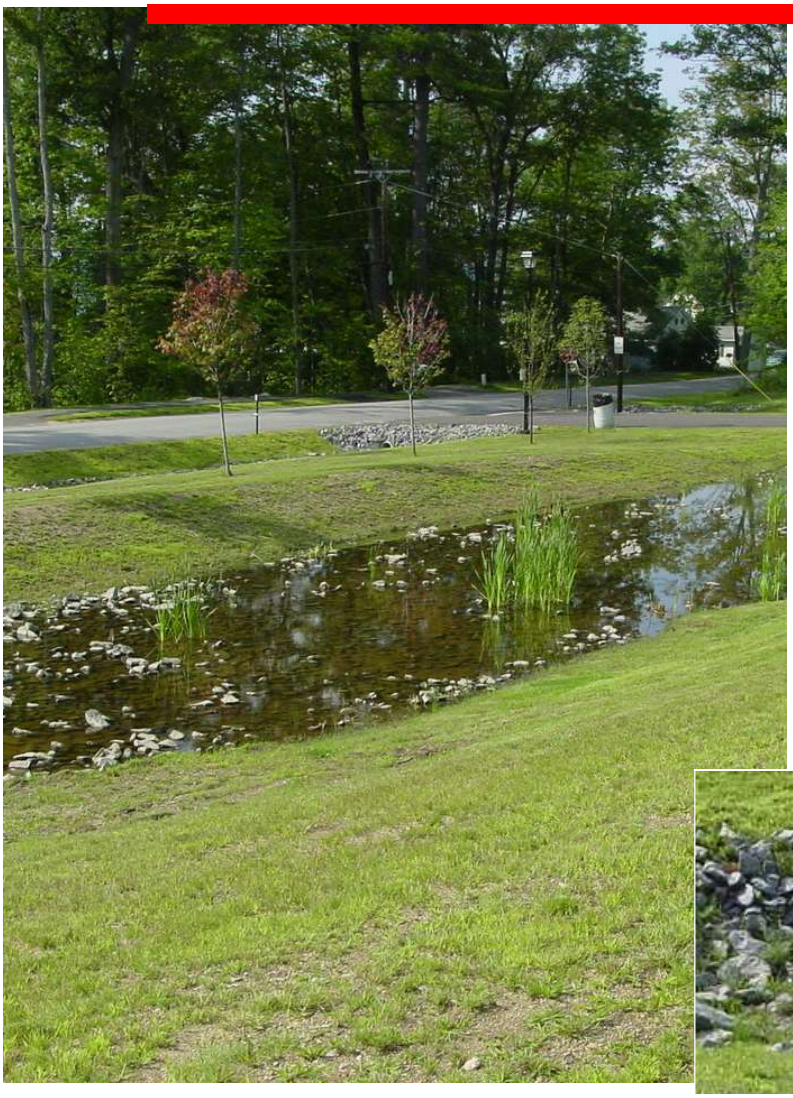
SOUND EXHIBIT

SHEET NUMBER:

C-001

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBIT\SEXHIBIT D*P-EXHD-PROP-MAA240177.00-0A.----:LAYOUT: C-001 EXHD



Stormwater Management Drainage Report

~~December 11, 2024~~
Revised Feb. 18 2025



McDonald's®
Unit 4

Grapevine Drive and Durham Road (NH Route 108)
DOVER, NH 03820

Prepared for:
VC Dover Investments, LLC
48 Constitution Drive
Bedford, NH 03110

Prepared by:

TFM TFMORAN INC.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects
48 Constitution Avenue, Bedford, NH
(603) 647-2242 **www.tfmoran.com**
Bedford, NH | Portsmouth, NH

STATE OF NEW HAMPSHIRE – ROBERT E. DUVAL No. 7105 LICENSED – PROFESSIONAL ENGINEER
18 Feb. 2025

Dover Fields Units 4 – McDonald's:
VC Dover Investments, LLC
Grapevine Drive & Durham Road (NH Route 108), Dover, NH
~~December 11, 2024~~
Rev 1: February 18, 2025

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  - Erosion Control Measures
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Summary

Part 7 **Inspection and Maintenance Manual**

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Post-development Drainage Plan

Executive Summary

- VC Dover Investments, LLC. is proposing revisions to the previously permitted Dover Fields Mixed-Use Project, on tax map H lot 4-3 in Dover, NH, in conjunction with Bohler Engineering LLC to construct a McDonalds's® 3,700 sf fast food restaurant on Unit 4.

- The previously permitted design for a 2,500 sf fast food restaurant will be revised for a 3,700 sf fast food restaurant.

- The revised fast food restaurant layout will maintain drainage flow paths designed for the previously approved restaurant proposed for Unit 4, and provide treatment and recharge of stormwater runoff within the constructed systems.

- The previous AoT submission was for a Mixed-Use building on Unit 2 (with 49 residential units) and Taco Bell fast food restaurant on Unit 4. The application for Unit 2 was fully approved by both AoT and The City of Dover Planning Board, but has not yet been constructed. The Taco Bell Application on Unit 4 was approved by AoT but the Site Plan application to the City of Dover was withdrawn without being approved.

- Additional impervious surfaces are proposed (including proposed Unit 4, previously constructed surfaces on Unit 5, and 2,000 SF of additional impervious to account for widening of Grapevine Drive) which represents an increase of 2.9% of the impervious area originally approved.

- In post-development conditions for the 2-year, 10-year, 25- year, and 50-year storm events, there is no increase in the peak rate of runoff at the previously analyzed discharge point as compared to the pre-development conditions. Stormwater volume calculations reveal similar quantities to the approved design, thus maintaining the design intent.

- The site's constructed stormwater treatment and detention basins include sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. The existing stormwater system substantially meets the intent of the current design criteria, and has the capacity to accept the flow from the additional impervious area. Modifications to the system include filling part of the largest Stormwater Basin 100P to locate the proposed fast food restaurant's driveway further from Route 108 compared to the previously approved design to account for more traffic queueing.

- The proposed McDonald's site has a larger parking lot than the previously approved design for Unit 4. An additional underground StormTech system is proposed under the Unit 4 parking area to mitigate the impact of the proposed increased impervious area on Unit 4 and the decreased storage volume in Basin 100P. Also modifications to the outlet control structure for Basin 100AP are proposed to mitigate a decrease in freeboard (less than 1 foot) resulting from increased runoff volumes and increased rainfall depths. The original 2007 design used NRCS Technical Paper-60 derived rainfall estimates, while this report utilizes Northeast Regional Climate Center (NRCC) rainfall estimates.

Description of Project

VC Dover is proposing revisions to the previously permitted Dover Fields Mixed-Use Project, Commercial Phase on tax map H lot 4-3 near the intersection of Mast Road and Route 108 in Dover, NH. The changes included in the application include a larger fast food restaurant on Unit 4 and a slight widening of Grapevine Drive to accommodate a turning lane into the proposed McDonald's fast food restaurant proposed on Unit 4. The previously approved designs for Unit 4 (original approval in 2007 and partially permitted proposed Taco Bell in 2023) were not constructed.

Grapevine Drive is private street serving the Dover Fields Development, located on common land of the development and established by easements and commercial condominium covenants.

The Dover Fields site is located within the I-4 and B-4 zoning districts and the RCM Overlay in the City of Dover. A portion of the Cielo Drive residential phase is in the General Residential and Agricultural district in the Town of Madbury.

Other areas of the site are completed, including a Hannaford grocery store on Unit 1, and the HINEC Congregate Care Senior Housing on the corner of Mast Road and Grapevine Drive (Unit 5). Currently under construction or completed are 121 units of age-restricted single family residential, with clubhouse, on tax map H lot 4 (Cielo & Windsor Drives). The Mixed-Use building on Unit 2 (on lot 4-3), consisting of 49 apartments and a fitness center (3,851 sf), and coffee shop (2,367 sf) has been approved and construction is currently expected to begin Spring of 2025. The project described herein refers to the proposed revisions which are only applicable to the Dover Fields portion of the project on lot 4-3, which involve a Mixed Use building on Lot 4-3 Unit 2, consisting of 49 apartments and a gym and coffee shop, and a proposed Taco Bell fast food restaurant on Lot 4-3 Unit 4. Note the Unit 2 mixed use building project also included adding an emergency generator to the site's sewer pump station.

Approval by the NHDES Alteration of Terrain Bureau was obtained in Nov. 2006 (Permit #WPS-7657E), and that permit has been kept current, as indicated by the documents in Appendix Part 1. Approval by the Dover Planning Board is needed for this site development project.

To be consistent with previous phases of the project, the intent of this report is to address the changes associated with the proposed congregate care facility and its associated impervious surfaces.

The intent of this report is: 1) to update the previous analysis with the proposed revisions to the residential development and compare the pre-development and post-development conditions and 2) to provide the appropriate stormwater management systems in accordance with the intent of the original design, and the requirements of NHDES and the City of Dover.

Storm Water Methodology

Pre-Development Conditions

(Taken from: Residential–Commercial Mixed Use Development Stormwater Management Drainage Report, previously revised August 26, 2010, with appropriate revisions to referenced appendixes)

The existing 55.7± acre development lot was analyzed in the pre-development condition to ensure that the development program would mitigate any stormwater impacts to the existing drainage infrastructure located on or adjacent to abutting property and Right-of-Ways. The most current version of the computer program HydroCAD was used to calculate the runoff from various design storms including the 2 and 10-year storms as required by the various permitting agencies. HydroCAD is a computer aided design program used for modeling the hydrology of stormwater runoff that is based on the SCS TR-20 technique.

According to the SCS Soil Surveys of Strafford County this site contains Windsor loamy sand (WdA, WdB), Hinckley (HaB), Elmwood (EaA), Windsor clay subsoil variant (WfB) and Swanton (SwA). Windsor loamy sand consists of excessively drained soils. Hinckley loamy sand consists of excessively drained soils that formed in thick deposits of stratified sand and gravel. Elmwood fine sandy loam consists of moderately well drained soils. Windsor loamy fine sand, clay subsoil variant consists of well drained soils. Swanton fine sandy loam consists of poorly drained soils. Even though these soils offer varying permeability's, it can be concluded that a portion of the stormwater flows infiltrate on-site.

The site's watershed was analyzed as nine (9) distinct drainage area basins which were split along slight ridgelines located in various sections of the site or they were created to more accurately compare pre and post development flows. Stormwater runoff from the northeasterly and easterly portion of the site (Subcatchment 1) generally develops from the crown of Mast Road which is conveyed through sheet and shallow concentrated flow courses along Mast Road to the Durham Road (NH Route 108) (Subcatchment 13) intersection and into the ditch line along Durham Road (NH Route 108) which outlets into the easterly side of a wetland area referenced as Wetland Area 1 (Subcatchment 12).

Wetland Area 1 is located in the southeast corner of the property adjacent to Durham Road (NH Route 108) and the existing 165' wide P.S.N.H. easement with overhead electrical transmission lines. Wetland Area 1 is primarily an open field that was once used for agriculture. This open area was actively being cut during the spring, summer and fall months, prior to 2006. The remainder of the wetland is forested and lies adjacent to the PSNH easement. The total area of this wetland on the development lot is approximately greater than 1.0 acre. This wetland area continues in a southerly direction onto the abutting property to the south. The abutting land use surrounding this wetland is a mixture of forested and open space areas. Vegetation noted in the open area was primarily a mixture of various types of grasses. This is a result of being continually mowed. Wetland Area 1 is also unique in that as runoff from multiple subcatchments reaches this wetland area, which is the lowest elevation on the development lot, runoff accumulates because it is not able to flow freely through the lowest of three natural watercourses across the PSNH easement. The natural watercourses convey the runoff across the PSNH Easement onto Lot H-2 where they eventually converge into an existing channel.

Runoff from the middle of the property (Subcatchment 2) is conveyed across the property through sheet and shallow concentrated flow courses into the westerly side of Wetland Area 1 (Subcatchment 11). Runoff from the middle section of the development lot (Subcatchment 3)

starts form the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to a small isolated wetland area referenced as Wetland Area 2.

Wetland Area 2 is a small isolated wet area lying along the southern boundary of the property and within the existing P.S.N.H. easement approximately 900 linear feet west of Durham Road (NH Route 108). The adjacent land use surrounding this wetland is a mixture of forested and open space associated with the P.S.N.H. easement.

Runoff from the central western portion of the development lot (Subcatchment 4) starts from the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to a larger wetland area referenced as Wetland Area 3. Wetland Area 3 lies along the southern boundary of the property and within the existing P.S.N.H. easement approximately 1,200 linear feet west of Durham Road (NH Route 108). Runoff from the westerly portion of the development lot (Subcatchment 5) starts from the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to abutting lot H-2A where it enters into Wetland Area 3.

Wetland Area 3 slowly drains easterly toward Durham Road (NH Route 108) where it crosses an all-terrain vehicle (ATV)/Snowmobile trail. Wetland Area 2 slowly drains southerly toward Freshet Road where it flows along the ATV/Snowmobile trail. As these flows converge, they create a small stream that flows southeasterly toward Durham Road (NH Route 108). As this stream flows toward Durham Road (NH Route 108), a few more water courses enter this stream from the north, specifically from the westerly end of Wetland Area 1. This stream eventually converges with the easterly water courses of Wetland Area 1 which flows to an existing 48" Reinforced Concrete Pipe (RCP) that crosses Durham Road (NH Route 108). This stream continues easterly where it intersects with Johnson's Creek. Johnson's Creek flows in a southerly direction into the tidal flats of the Oyster River. From here, the Oyster River flows in an easterly direction into Little Bay, Little Bay outlets into the Piscataqua River near Dover Point before continuing on to Portsmouth.

In addition to reviewing the SCS Soil Survey of Strafford County, TFM also performed several test pits to more accurately classify the types of soils on this property. TFM was able to determine that there were mainly two types of soils on the property by performing the test pits in various locations throughout the development lot. On the eastern third of the lot, the underlying soils are composed of silt, silty clay loam and clay. As such, the rates of runoff are higher in this area because stormwater is more likely to flow along the surface rather than percolate through the deeper soils. However, on the westerly two-thirds of the lot, the underlying soils are composed of sand and sandy loam. As such, the rates of runoff are minimal as most of the stormwater percolates easily into the deeper sandy soils. This theory is further supported as this site is in close proximity to the sand pit operations that abut this project.

TFM also reviewed the entire watershed for the existing 48" RCP culvert that crosses Durham Road (NH Route 108). Additional subcatchments (Subcatchments 14 and 15) were added to the pre-development model to complete the culvert's watershed. The culvert was analyzed with its entire watershed to ensure that the culvert has sufficient capacity in the pre-development condition. This information will also be used in the post-development condition to verify that the post-development hydrology would not adversely impact the existing culvert.

Rainfall

A previous project on this site (conversion of the medical office building to a congregate care facility at Unit 5) was constructed in 2010 and was the first project on this site to use newer NRCC rainfall amounts. At that time, like most projects in the State of New Hampshire at that time, was still relying on NRCS Technical Paper 60 for rainfall data. In the intervening years newer and more rigorous sourced from the Northeast Regional Climate Center at Cornell University has come into common use and is now recommended by NH DES Stormwater Management Manual, Volume 2, Appendix A and required by City of Dover Site Review Regulations 149-14.A.(3)(b)(iii). This project reuses existing BMP's designed for full buildout of all Units under the old rainfall data, but checked in this report using the new rainfall data. A rainfall comparison follows:

Storm Average Recurrence Interval	Old NRCS TP-60 24- Hr. Rainfall (No longer used) (in.)	NRCC 24- Hr. Rainfall (in.)	NOAA Atlas 14 24- Hr. Rainfall (Not Used) (in.)
2-Year	3.0	3.14	3.28
10-Year	4.3	4.74	5.26
25 -Year	5.2	6.01	6.50
50-Year	5.7	7.18	7.41
100 -Year	6.4	8.59	8.41

The NCRS Type III rainfall distribution curves are still used per Volume 1 Section 2.1 of the NH Stormwater Manual, consistent with the original thru 2023 projects on this site.

Post-Development Conditions

The objectives for the post-development drainage design are to manage stormwater in a manner consistent with the systems designed and approved for the proposed mixed use residential and retail building, while also meeting the requirements of the City of Dover and NHDES Alteration of Terrain Bureau.

The stormwater design for the McDonald's site proposes a closed drainage system, consistent with the design for the previously approved smaller fast restaurant on Unit 4. There are some minor changes to the impervious areas. The 1.91-acre Unit 4 McDonald's site is proposed to have 34,010 SF of impervious surface or 40.8% impervious. This drainage analysis includes 2,000 SF of added impervious area in subcatchment 310S to account for proposed widening of Grapevine Drive. This drainage analysis includes 15,128 SF of impervious area on Unit 3 which has not yet been constructed. When the Unit 2 site gets constructed, it will have an impervious area of 71,747 sf (including existing road surface) which is included in this analysis. The total proposed paved and gravel area in this study area is 24.377. The total paved and gravel area in the original study area is 23.254 acres. Thus 48,920 sf (1.123 acres) of additional impervious areas are proposed (including previously approved surfaces on Units 2 and 5) which represent an increase of 4.8% of the impervious area originally (2007) approved, compared to a 2.9% increase in the previously approved 2023 AoT amendment.

The current proposal fills over the northeast forebay area of basin 100P, reducing available the storage volume in the basin. The forebay is proposed to be reconstructed further into the basin.

This fill is required to move the proposed driveway for the proposed McDonald's westward (compared to the original 2007 design) further from Route 108 to allow for more traffic queuing space for the turning movements onto Route 108, as recommended by NH DOT staff in Driveway permitting discussions. TFM looked at compensatory excavation, including moving the berm embankment of basin 100P to restore its volume. However, enlarging the proposed StormTech under the McDonalds parking area, and modifying the outlet structure of basin 100AP were found to be more effective options, compared to compensatory storage excavation.

The area being developed for this phase of the project drains to the approved stormwater treatment and detention system that was previously constructed for the overall mixed-use project. This system includes sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. Since the constructed system substantially meets the intent of the current criteria, and has the capacity to accept the flow from the additional impervious area, we do not recommend making any changes to the system.

The post-development drainage model represents the site divided into multiple subcatchments based on the layout of the proposed stormwater collection system. Pre-development discharge points previously analyzed as part of the original report have been re-analyzed in post-development conditions with the proposed revisions.

The freeboard at each detention basin for the 50-year storm event is given below in Table 1. The minimum required freeboard is 1.0'. Without alterations to the outlet control structure, the freeboard at basin at 100AP would be 0.80 feet. which is less than the required 1.0 feet, primarily due to the increased rainfall volume relative to the previously designed rainfall volume. The previous AoT permit Amendment for this site requested a waiver of this requirement for reduced freeboard at basin 100AP. This amendment finds that fixing the freeboard issue also improves stormwater attenuation rates in basin 100AP and 100P.

Basin Freeboard Summary (50-Year):

Basin ID	Top of berm	Water Surface Elevation	**Freeboard**	Check
100P	106.0	104.94	1.06	Okay
100AP	104.0	102.99	1.01	Okay
801P	105.0	102.95	2.05	Okay
600P	101.0	99.96	1.04	Okay

Stormwater Treatment

Stormwater treatment will be accomplished downstream of the Mixed Use Development Unit sites within the Best Management Practices constructed for the overall development on common land, including the wet basins on site. Within the McDonald's development itself, 4' deep catch basin sumps and outlet hoods allow sediment to settle out of the stormwater and floatables to be captured within the structure, providing required pretreatment. In addition the proposed StormTech system has an isolator row which provides additional sediment and floatable trash capture and storage capacity.

Erosion Control Measures

Erosion Control Measures are found on the Storm Water Management Plan within the plan set. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Compost filter socks are proposed along the edges of downstream site work to prevent sediment from leaving the project area. Stabilized construction entrances are proposed at the driveways along Grapevine Drive and Route 108 to keep sediment from being tracked onto the street during construction. Catch Basin Erosion Protection is also proposed to keep sediment out of the closed drainage system until the site reaches final stabilization. Blanket slope protection is proposed on slopes greater than 3:1.

Permanent Erosion Control Measures

A combination of an open and closed drainage system is proposed on the site to capture the runoff from the project. Slope stabilizations measures are also proposed to prevent erosion on slopes greater than 3:1.

Flood Protection

Examination of the Flood Insurance Rate Map for Strafford County, New Hampshire, Panel 320 of 405, Map Number 33017C0320D, Effective Date: May 17, 2005, indicates that the subject parcel is not located within a Flood Hazard Area.

No Infiltration Model

At the request of the City of Dover, Section 6 of this report contains output from a duplicate post development model, assuming zero infiltration at BMP-1 (McDonald's StormTech system, Node BMP-1). This demonstrates that the drainage system still works if the infiltration component of this BMP should fail for any reason in the future.

Conclusion

1. 48,920 sf (1.123 acres) of additional impervious areas are proposed (including previously approved surfaces on Units 2 and 5) which represent an increase of 4.8% of the impervious area originally approved (compared to a 2.9% increase in the previously approved 2023 AoT amendment).

2. Stormwater is being discharged to the constructed stormwater detention and treatment system, maintaining similar peak discharge flow rates and volumes for all design storms in comparison to the previously approved project.

3. There is a reduction in the peak rate of runoff leaving the site for the 10, 25, and 50 year storm events in comparison to the pre-development conditions. The peak rate of runoff leaving the site is matched for the two year storm event.

4. The constructed stormwater treatment and detention system includes deep sump hooded catch basins, sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. Since the constructed system substantially meets the intent of the current criteria, and has the capacity to accept the flow from the additional impervious area, we do not recommend making any changes to the system.

5. The site redevelopment will maintain the quality of the runoff proposed by the previous project.

Discharge Point Summary

Discharge	**PRE-DEVELOPMENT**				**POST-DEVELOPMENT (proposed 2025)**			
Point	**2-yr**	**10-yr**	**25-yr**	**50-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
10P								
Qout (cfs)	7.0	24.8	56.6	93.3	6.8	15.7	39.3	67.8
Volume (af)	1.42	5.23	9.86	15.14	2.79	7.07	12.02	17.69

*** NOTE: This chart does not match originally approved report charts because we are using different rainfall amounts. As noted above, previous projects on the site used NRCS Technical Paper 60 Rainfall data. This project is using more recent NRCC rainfall data.

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

April 26, 2023

VC Dover Investments, LLC
Attn: Dylan Cruess
48 Constitution Drive
Bedford, NH 03110

Re: Dover Fields - Mixed Use Development
Tax Map H, Lot 4-3, Unit 2, Dover, NH

Permit: WPS-7657F
Original Permit Issuance: November 22, 2006

Dear Applicant:

Based upon a recent request, we are hereby amending RSA 485-A:17 Alteration of Terrain Permit WPS-7657E. **The amendment consists of plan modifications for development of a parcel identified as Unit 2 for construction of 49 apartment units, a fitness center, coffee shop, and associated access and parking facilities, as shown on plans by TFMoran, Inc., entitled "Mixed Use Development, Residential Phase, Dover Fields", dated October 18, 2022, latest revision dated February 28, 2023 .** As part of the processing of this amendment, DES granted approval to waiving specific requirements of Env-Wq 1503.22(c)(4), finding the increase in project impervious area of greater than 10,000 square feet could be addressed through the permit amendment process, and finding that granting the waiver would not have an adverse impact on the environment, public health, public safety, or abutting properties, and that granting the request is consistent with the intent and purpose of the rules waived. Additional documentation relative to the waiver request is contained within the file. The amended permit number is WPS-7657F and is subject to the following conditions:

1. Activities shall not cause or contribute to violations of the surface water quality standards established in Administrative Rule Env-Wq 1700.

2. Revised plans shall be submitted for permit amendment prior to any changes in construction details or sequences. The Department must be notified in writing within ten days of a change in ownership.

3. You must notify the Department in writing upon completion of construction. Forms are available at: https://www.des.nh.gov/land/land-development.

4. The approved plans and supporting documentation in the permit file are a part of this approval.

5. This permit expires on **November 22, 2025**. No earth moving activities shall occur on the project after this expiration date unless the permit has been extended by the Department. If requesting an extension, the request must be received by the department before the permit expires. The Amendment Request form is available at: https://www.des.nh.gov/land/land-development.

6. **All stormwater practices shall be inspected and maintained in accordance with Env-Wq 1507.08 and the project Inspection and Maintenance (I&M) Manual**. All record keeping required by the I&M Manual shall be maintained by the identified responsible party and be made available to the department upon request.

7. **Upon completion of construction, a written notice signed by the permit holder and a qualified engineer shall be submitted to the Department, in accordance with Env-Wq 1503.21(c)(1), stating that the project was completed in accordance with the approved plans and specifications**. If deviations were made, the permit holder shall review the requirements in Env-Wq 1503.21(c)(2).

8. This permit does not relieve the applicant from the obligation to obtain other local, state or federal permits that may be required (e.g. from US EPA, US Army Corps of Engineers, etc.) Projects disturbing over 1 acre require a federal stormwater permit from EPA. Information regarding this permitting process can be obtained through the following e-mail address: https://www.epa.gov/npdes/2022-construction-general-permit-cgp

9. This project has been screened for potential impact to known occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

Sincerely,



Ridgely Mauck, P.E.
Alteration of Terrain Bureau

cc: Dover Planning Board
ec: TFMoran, Inc.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

July 3, 2012

Ridgely Mauck, P.E.
NHDES – Alteration of Terrain
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Re: NHDES Amended Alteration of Terrain Application
WPS-7657B
Senior Housing Project
Grapevine Drive, Dover, NH

Dear Ridge:

On behalf of our client, Housing Initiatives of New England Corp., and the property owner, VC Dover Investments, LLC, of 48 Constitution Drive, Bedford, NH 03110, we respectfully request the following waivers from the following Administrative Rules:

- Env-Wq 1503.22(c)(4) for increase in total impervious area >10,000 sf
- Env-Wq 1504.14(b) for field measurement of infiltration rate in Hinckley soils
- Env-Wq 1507.05(b)(1)(a) for volume increase >0.1 acre-feet
- Env-Wq 1508.06(a)(2) for a filtering practice without a liner in group A soils

Env-Wq 1503.22(c)(4)

A waiver is requested to allow this application to be processed as an amendment to the previous approval. The total increase in impervious area being proposed is 11,282 sf (only slightly more than the 10,000 sf threshold). Of this area, an additional 9,510 sf of roof area is associated with the larger building, with the remaining 1,772 sf being additional sidewalks and parking lot pavement. It is also noted that 3,342 sf of permeable sidewalk is now being proposed, resulting in a net reduction in the amount of non-permeable pavement on the site. Therefore, the intent of the rule is being met in that the amount of impervious area is minimal compared to the size of the development. This increase represents a difference of only 1.1%, where the rule allows up to 10%. Furthermore, the overall mixed-use development is a phased project being constructed by multiple developers, and the intent of the original design is being maintained. There are no changes proposed to the portion of the drainage system that has been constructed.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Env-Wq 1504.14(b)
A waiver is requested from the requirement for field measurement of the infiltration rate for Hinckley soils. A test pit conducted at the site revealed a depth to groundwater of greater than 120" (10'). Given this separation between the filtration practice (permeable pavement) and groundwater, adequate treatment will be provided by the underlying soils prior to intercepting groundwater. The following calculations are provided in support of this request:

Treatment time required: (0.10 hr/in x 12 in/1 ft x 1 ft) = 1.2 hours

"Worst Case" infiltration rate to achieve required treatment time:

Existing elevation 122.0
Groundwater Elevation = 112.0 (based on Test Pit #10)
Proposed surface elevation 117.7
Bottom of practice elevation = 115.95
Separation to groundwater proposed = 115.95 – 112.0 = 3.95'
Infiltration rate required = 1.2 hr/(12 in/1 ft x 3.95 ft) = 0.025 hr/in = 40 in/hr

As shown in the soils report, this infiltration rate can easily be met by the Hinckley soils, which are expected to be between 6 and 20 in/hr.

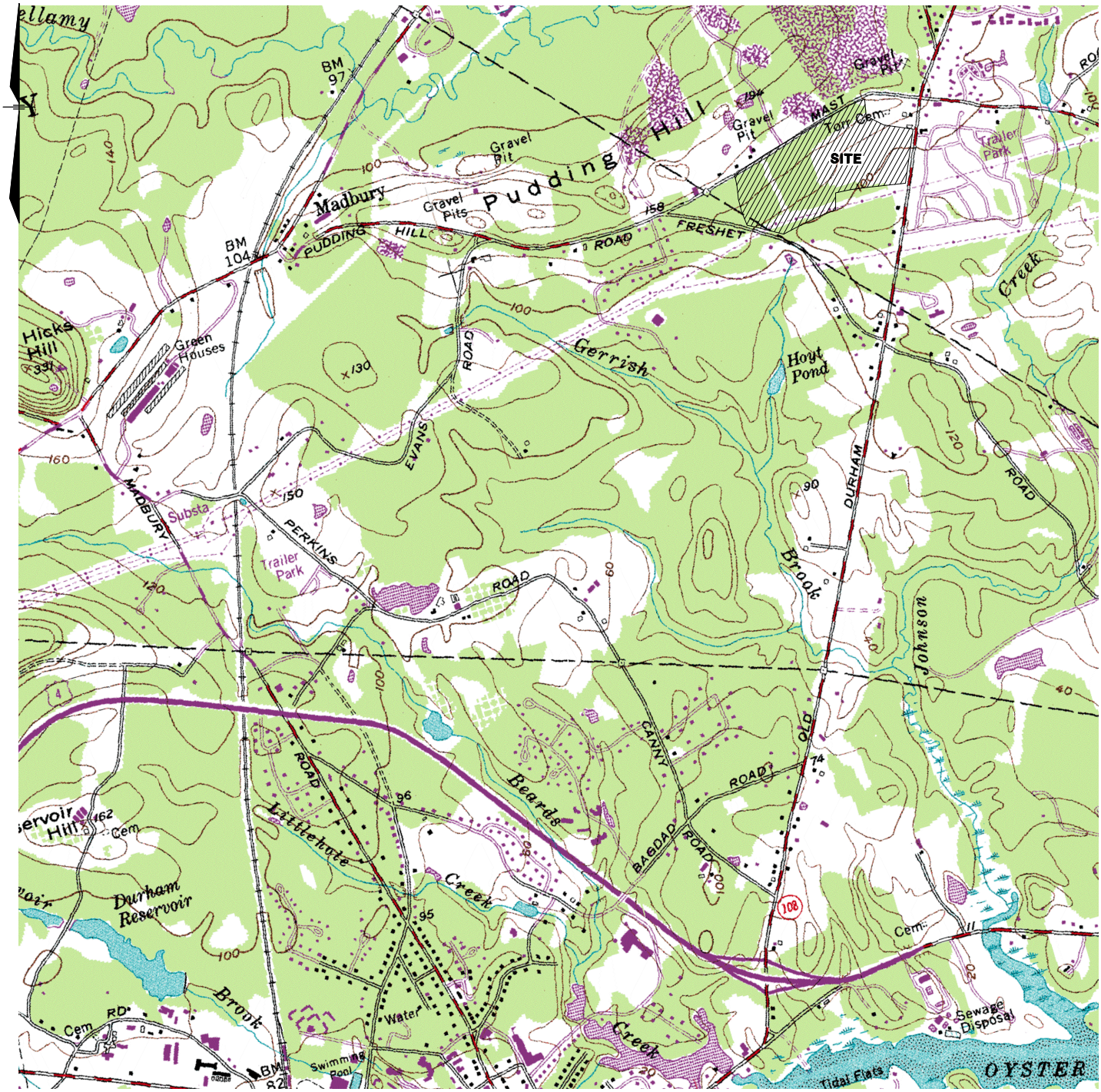
Env-Wq 1507.05(b)(1)(a)
A waiver is requested to allow a 2 year, 24 hour volume increase greater than 0.1 acre-feet. The original approval was granted prior to the current version of the rules being adopted. The approved application included a volume increase from 1.195 af to 2.522 af. The design that is currently proposed maintains the intent of the original design and its associated detention and treatment systems, and proposes a volume increase of 0.066 af, which is less than 0.1 af compared to the approved design. In addition, the peak runoff rates are matched or are significantly reduced in each of the three storms compared to pre-development conditions.

Env-Wq 1508.06(a)(2)
A waiver is requested to allow a filtering practice to be constructed in an area of group A soils without a sidewall liner. Based on the calculations provided above, adequate treatment will be accomplished prior to the stormwater intercepting groundwater; thus, the sidewall liner is unnecessary in this instance.

If you have any questions, please contact either myself or Jeff Kevan at 472-4488.

Sincerely,
TFMORAN INC.

Michael T. O'Donnell, P.E.
Project Manager



U.S.G.S. LOCUS MAP

SCALE: 1"=2,000'

TFM

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects

48 Constitution Dr
Bedford, NH 03110
Phone (603) 472-4488

www.tfmoran.com

Bedford, NH

TAX MAP H LOT 4

MIXED USE DEVELOPMENT

DOVER, NH

PREPARED FOR:

VC DOVER INVESTMENTS LLC

FILE	46001.31	DATE	10/24/22	SHEET 1 OF 1
		CADFILE	USGS	

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **Stormtech SC-800 Underground Infiltration System (BMP-1)**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← **yes**
0.96	ac	A = Area draining to the practice	
0.75	ac	A_I = Impervious area draining to the practice	
0.78	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.75	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.72	ac-in	WQV= 1" x Rv x A	
2,624	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
656	cf	25% x WQV (check calc for sediment forebay volume)	
Isolator Row		Method of pretreatment? (not required for clean or roof runoff)	
-	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ **25%WQV**
3,231	cf	V = Volume[1] (attach a stage-storage table)	≥ **WQV**
2,035	sf	A_{SA} = Surface area of the bottom of the pond	
0.27	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
57.3	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ **72-hrs**
101.85	feet	E_{BTM} = Elevation of the bottom of the basin	
96.00	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
95.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
5.85	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
6.8	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
N/A	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ **24"**
N/A	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
Yes	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←**yes**
No		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	← **yes**
No	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← **yes**
No	:1	If a basin is proposed, pond side slopes.	≥**3:1**
104.98	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
105.15	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
105.60	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← **yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← **yes**

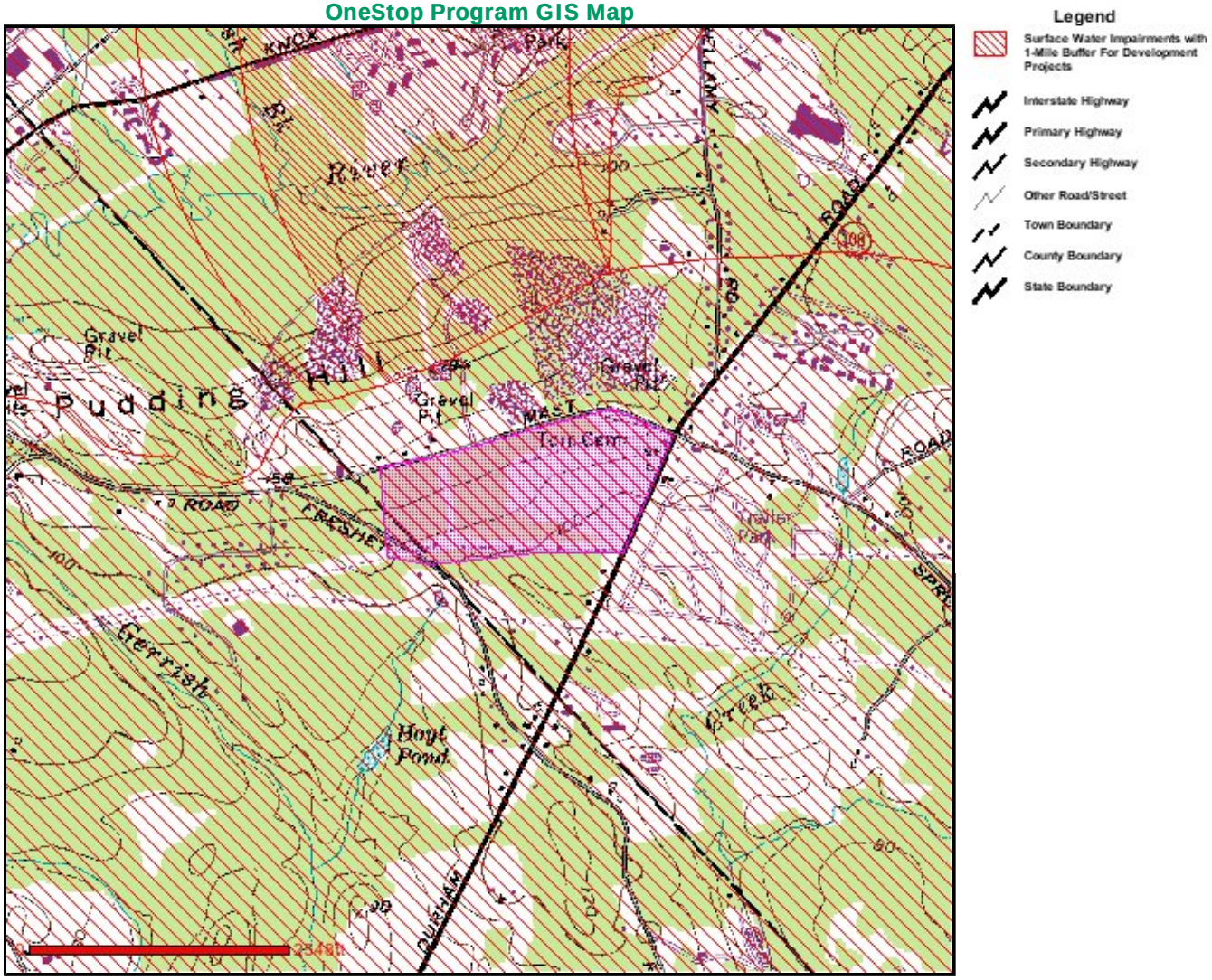
1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

New Hampshire Department of Environmental Services

OneStop Program GIS

OneStop Program GIS Map



Map Scale = 1 : 22888 (1" = 1907 feet or 0.4 miles)

The information contained in the OneStop Program GIS is the best available according to the procedures and standards of each of the contributing programs and of the GIS. The different programs are regularly maintaining the information in their databases. As a result, the GIS may not always provide access to all existing information, and it may occasionally contain unintentional inaccuracies. The Department can not be responsible for the misuse or misinterpretation of the information presented by this system.

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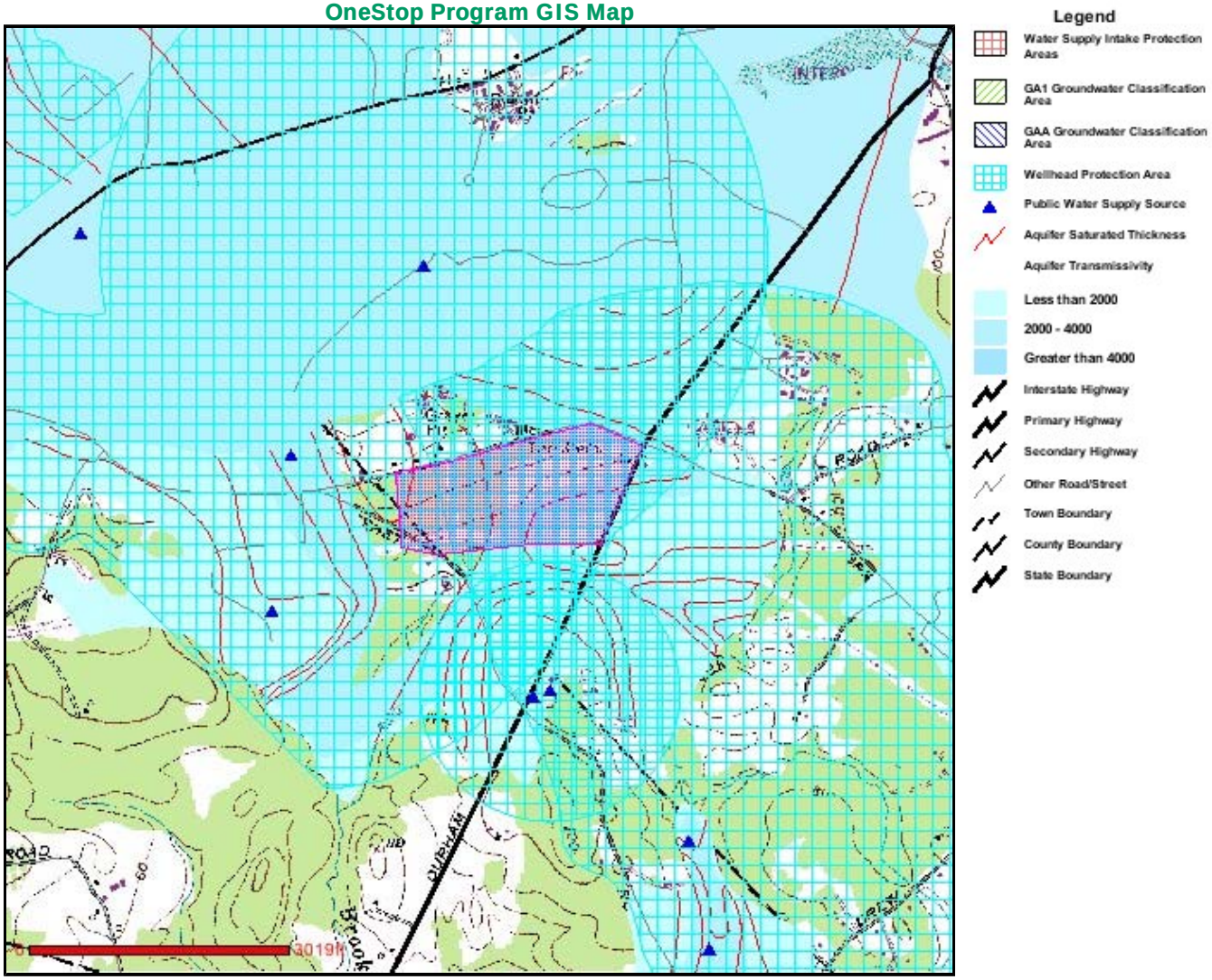
GRANIT Complex Systems Research Center

Developed in cooperation with NH GRANIT

New Hampshire Department of Environmental Services

OneStop Program GIS

OneStop Program GIS Map



Map Scale = 1 : 27126 (1" = 2261 feet or 0.4 miles)

The information contained in the OneStop Program GIS is the best available according to the procedures and standards of each of the contributing programs and of the GIS. The different programs are regularly maintaining the information in their databases. As a result, the GIS may not always provide access to all existing information, and it may occasionally contain unintentional inaccuracies. The Department can not be responsible for the misuse or misinterpretation of the information presented by this system.

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GRANIT Complex Systems Research Center

Developed in cooperation with NH GRANIT

United States Department of Agriculture

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



August 23, 2010

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://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

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 Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the 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

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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: 1:6,260 if printed on A size (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1,200 1,800

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

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
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,260 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

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 10, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

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

Strafford County, New Hampshire (NH017)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BzB	Buxton silt loam, 3 to 8 percent slopes	0.7	0.6%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	10.8	9.5%
HaB	Hinckley loamy sand, 3 to 8 percent slopes	41.9	36.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.7	0.7%
SwA	Swanton fine sandy loam, 0 to 3 percent slopes	7.9	6.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	8.4	7.3%
WdB	Windsor loamy sand, 3 to 8 percent slopes	31.5	27.6%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	12.2	10.7%
Totals for Area of Interest		**114.1**	**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 Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent

Description of Buxton

Setting

Parent material: Glaciomarine

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
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

Interpretive groups

Land capability (nonirrigated): 2e

Minor Components

Elmwood

Percent of map unit: 10 percent

Not named

Percent of map unit: 5 percent

EaA—Elmwood fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Elmwood and similar soils: 85 percent
Minor components: 15 percent

Description of Elmwood

Setting

Parent material: Glaciomarine

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 2w

Minor Components

Deerfield
Percent of map unit: 5 percent

Not named
Percent of map unit: 5 percent

Swanton
Percent of map unit: 5 percent
Landform: Marine terraces

HaB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting
Elevation: 0 to 1,000 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 200 days

Map Unit Composition
Hinckley and similar soils: 85 percent
Minor components: 15 percent

Description of Hinckley

Setting
Parent material: Stratified sandy and gravelly outwash

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Not named
Percent of map unit: 10 percent

Windsor
Percent of map unit: 5 percent

ScA—Scantic silt loam, 0 to 3 percent slopes

Map Unit Composition
Scantic and similar soils: 85 percent
Minor components: 15 percent

Description of Scantic

Setting
Landform: Marine terraces

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 4w

Minor Components

Biddeford
Percent of map unit: 5 percent
Landform: Marine terraces

Not named wet
Percent of map unit: 5 percent
Landform: Marine terraces

Swanton
Percent of map unit: 5 percent
Landform: Marine terraces

SwA—Swanton fine sandy loam, 0 to 3 percent slopes

Map Unit Composition

Swanton and similar soils: 85 percent
Minor components: 15 percent

Description of Swanton

Setting

Landform: Marine terraces

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 4w

Minor Components

Not named wet

Percent of map unit: 10 percent
Landform: Marine terraces

Scantic

Percent of map unit: 5 percent
Landform: Marine terraces

WdA—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 3s

Minor Components

Deerfield

Percent of map unit: 5 percent

Hinckley

Percent of map unit: 5 percent

Not named

Percent of map unit: 5 percent

WdB—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Deerfield
Percent of map unit: 5 percent

Hinckley
Percent of map unit: 5 percent

Not named
Percent of map unit: 5 percent

WfB—Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes

Map Unit Composition
Windsor variant and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor Variant

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Not named
Percent of map unit: 15 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

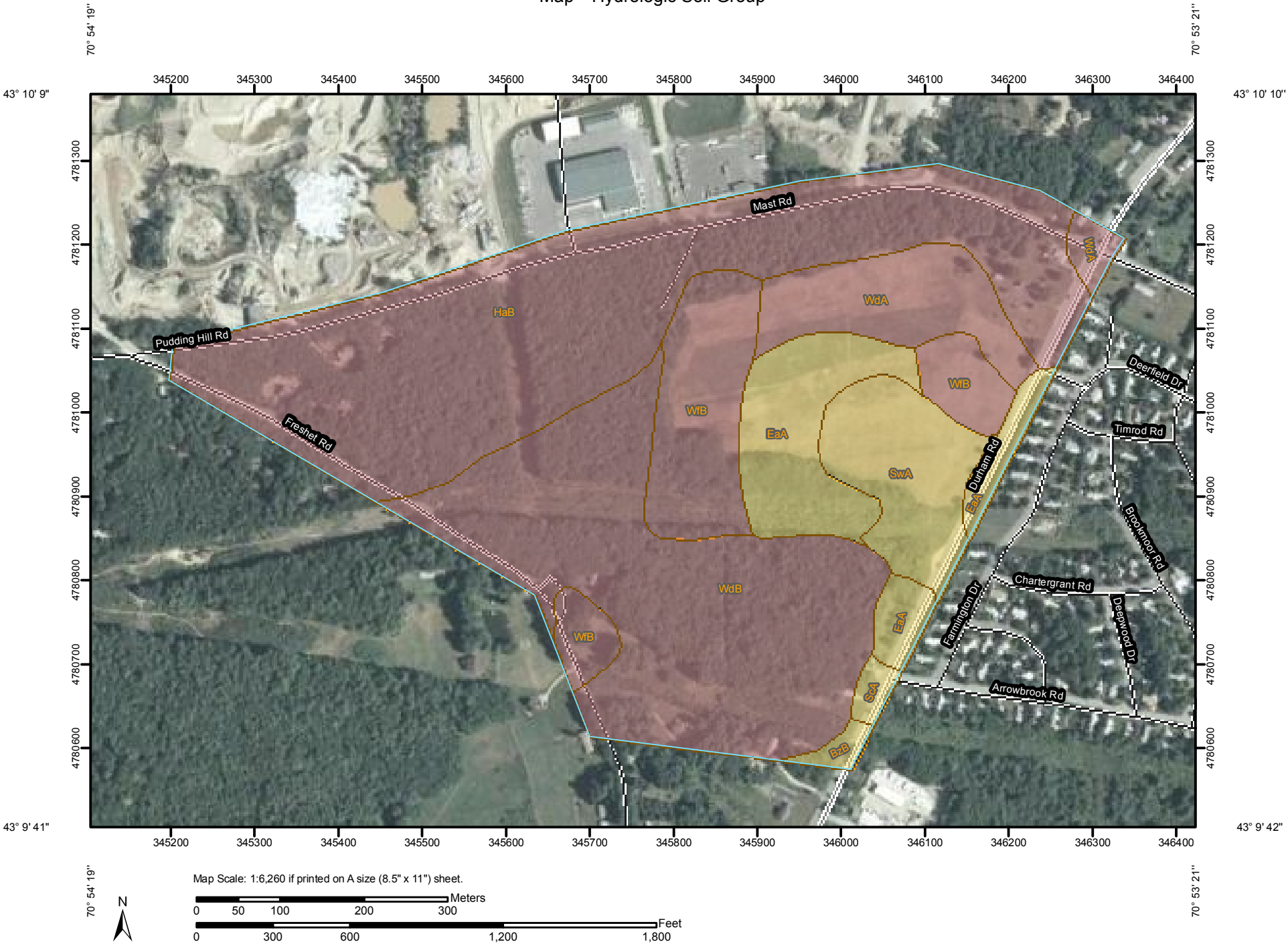
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,260 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

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 10, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Strafford County, New Hampshire				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BzB	Buxton silt loam, 3 to 8 percent slopes	C	0.7	0.6%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	C	10.8	9.5%
HaB	Hinckley loamy sand, 3 to 8 percent slopes	A	41.9	36.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	C	0.7	0.7%
SwA	Swanton fine sandy loam, 0 to 3 percent slopes	C	7.9	6.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	A	8.4	7.3%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	31.5	27.6%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	A	12.2	10.7%
Totals for Area of Interest			**114.1**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

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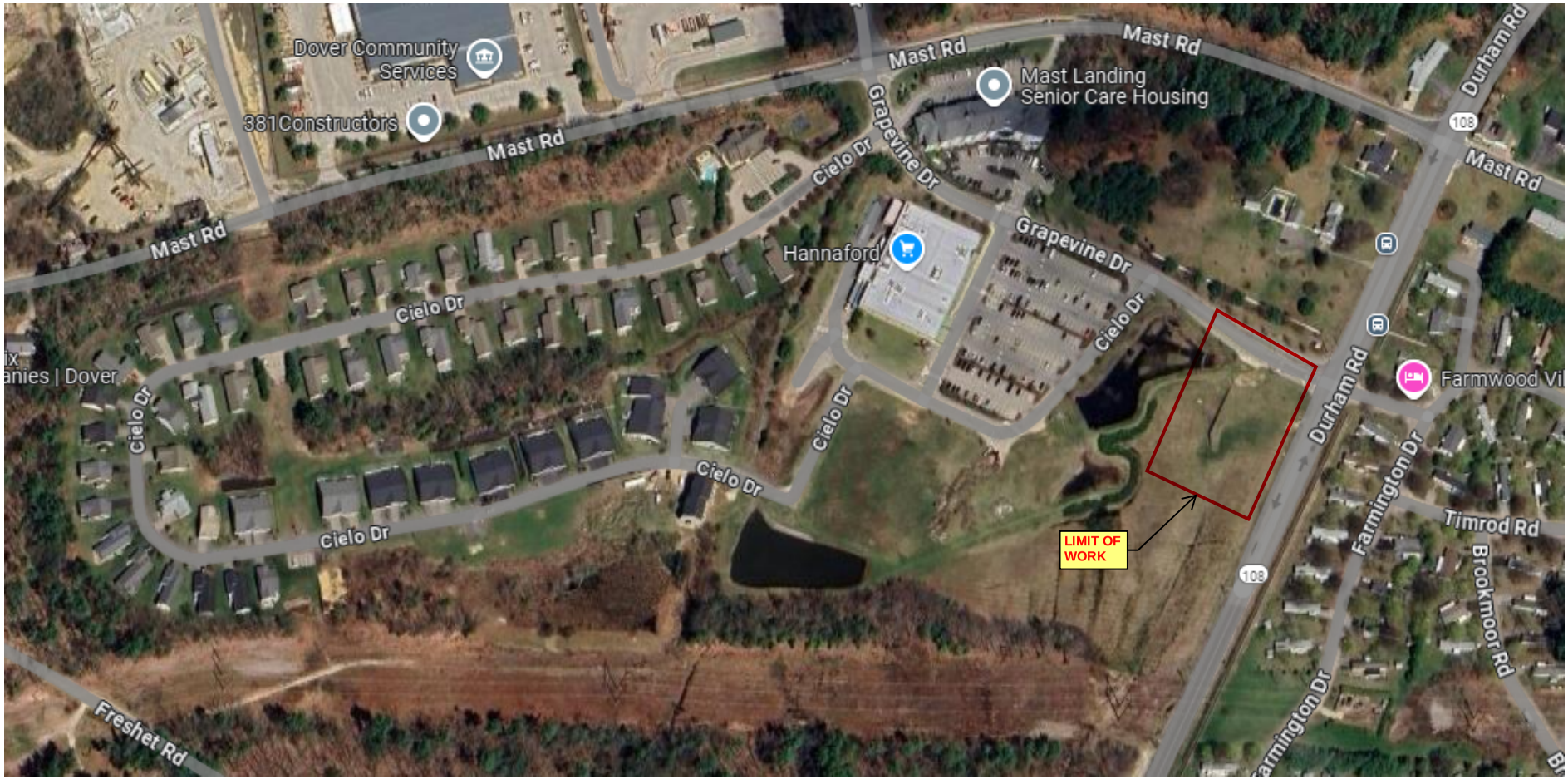
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Dover Community Services
381Constructors
Mast Rd
Mast Landing Senior Care Housing
Durham Rd
108
Cielo Dr
Grapevine Dr
Hannaford
Farmwood Vi
Durham Rd
Farmington Dr
Timrod Rd
Brookmoor Rd
LIMIT OF WORK
Freshet Rd

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Project #46001.33

Site Photos

Of

Dover Fields - Unit 4
McDonald's Site

Photo #1 – Looking west across site and Grapevine Drive and Durham Road (Route 108) intersection.



© credits Google Street View Image 2024

Photo #2 – Looking northwest across site from Durham Road (Route 108).



© credits Google Street View Image 2024

` Photo #3 – Looking north across site from Durham Road (Route 108).



© credits Google Street View Image 2024

Photo #4 – Looking north along site’s Durham Road (Route 108).frontage.



© credits Google Street View Image 2024

Photo #5 - Looking northeast across main wet basin (100P) at Grapevine Drive.



Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED NOV 0 3 2022

DHR Use Only	
R&C #	14388
Log In Date	11/3/22
Response Date	11/17/22
Sent Date	11/29/22

Request for Project Review by the New Hampshire Division of Historical Resources

RECEIVED DEC 0 1 2022

☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Mixed Use Development

Project Location Grapevine Dr and Mast Road

City/Town Dover Tax Map H Lot # 4-3

NH State Plane - Feet Geographic Coordinates: Easting 1190165 Northing 243725
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact *(if applicable)*
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference #

State Agency and Contact *(if applicable)* NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name VC Dover Investments, LLC c/o Alex Vailas

Mailing Address 48 Constituiton Dr Phone Number 603-472-4488

City Bedford State NH Zip 03310 Email alexvailasllc@aol.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company James Robinson, TF Moran, Inc.

Mailing Address 48 Constituiton Phone Number 6034724488

City Bedford State NH Zip 03310 Email jrobinson@tfmoran.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review Instructions for direction on completing this form.* Submit one copy of this project review form for each project for which review is requested. Please include a self-addressed stamped envelope. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.s.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping ***using EMMIT or relevant portion of a 7.5' USGS Map.*** *(See RPR Instructions and R&C FAQs for guidance.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1**. *(Blank table forms are available on the DHR website.)* Please note, using EMMIT Guest View for an RPR records search does not provide the necessary information needed for DHR review.
  EMMIT or in-house records search conducted on 10/24/2022.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☒ Photographs of ***each*** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☐ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.

☐ No Potential to cause Effects ☑ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: Jamie Nucci, DSHPO Date: 11/17/22

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Jonathan Devine
48 constitutional dr
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 11/1/2022 (valid until 11/01/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Dover, NHDES - Alteration of Terrain Permit, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-3411** Town: Dover Location: Grapevine Drive
Description: The project is a mixed-use development next to the Hannaford's. Constuction start contingent of permitting schedule.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: Please provide representative photos of all proposed impact areas during the growing season. Please provide aerial overlay with proposed limits of disturbance.**
F&G: No comments at this time.

Plant species	State[1]	Federal	Notes
greater fringed-gentian (*Gentianopsis crinita*)*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
lopsided rush (*Juncus secundus*)*	E	--	Occurs on talus slopes, cliffs/ledges, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

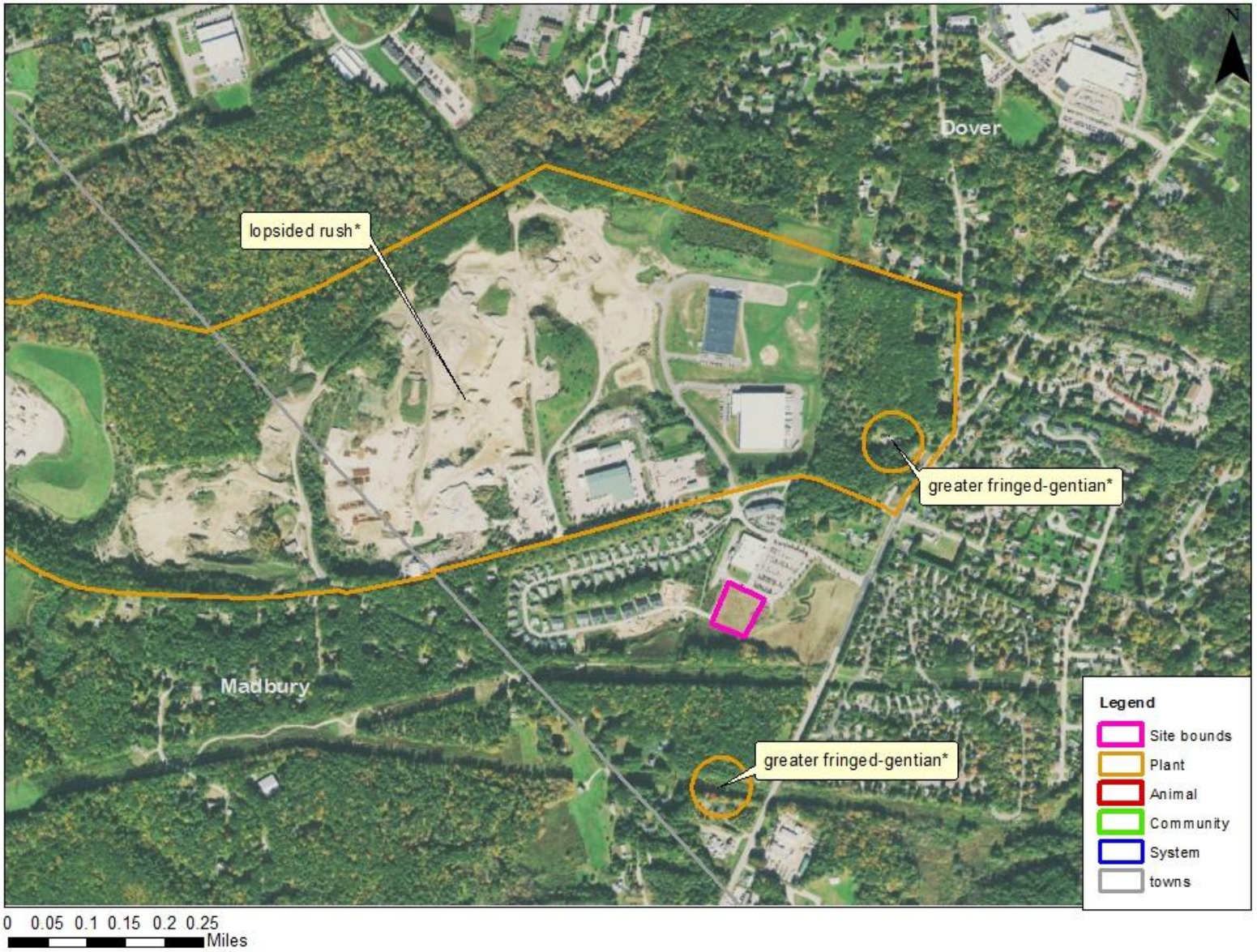
Contact NH Fish & Game at (603) 271-0467 with questions.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB22-3411



New Hampshire Natural Heritage Bureau - Plant Record

greater fringed-gentian (*Gentianopsis crinita*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1985: Between 51-100 plants in leaf, bud, flower, fruit, and seed dispersing. Population area full of large, mature specimens at every stage of growth. Specimen collected.
General Area: 1985: Moist, flat, open light. Associated species include *Aster umbellatus* (tall flat-topped white aster) and *Aster novae-angliae* (New England aster).
General Comments: --
Management Comments: --

Location

Survey Site Name: Dover Gentian
Managed By:

County: Strafford
Town(s): Dover
Size: 2.8 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Southwest of Dover, north of Rte. 108.

Dates documented

First reported: 1985
Last reported: 1985

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

greater fringed-gentian (*Gentianopsis crinita*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:	Excellent population and site.
Detailed Description:	1987: ca. 1,000 vigorous flowering, fruiting and vegetative plants. Specimen collected.
General Area:	1987: Field: moist, flat, and open. With *Spiranthes cernua* (nodding ladies'-tresses), Eriophorum sp. (cotton-grass), *Pycnanthemum tenuifolium* (narrow-leaved mountain mint), and other wet meadow plants.
General Comments:	--
Management Comments:	1987: Needs periodic mowing.

Location

Survey Site Name: Rte. 108 Powerline
Managed By:

County: Strafford
Town(s): Dover
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: At junction of Rte. 108 and powerline, ca. 0.5 miles northeast of Hoyt Pond.

Dates documented

First reported: 1987-09-01 Last reported: 1987-09-01

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

lopsided rush (*Juncus secundus*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1966: Specimen collected.
General Area: 1966: Gravel pit.
General Comments: --
Management Comments: --

Location

Survey Site Name: Madbury Gravel Pit
Managed By: Griffin Well

County: Strafford
Town(s): Dover
Size: 348.5 acres
Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Madbury. Gravel pit.

Dates documented

First reported: 1966-08-09
Last reported: 1966-08-09

CONFIDENTIAL – NH Dept. of Environmental Services review

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	70.894 degrees West
Latitude	43.167 degrees North
Elevation	0 feet
Date/Time	Fri, 01 Jul 2022 08:46:21 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.55	2.00	2.60	2.85	**1yr**	2.30	2.75	3.14	3.87	4.44	**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	3.14	3.49	**2yr**	2.78	3.36	3.85	4.58	5.22	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.07	3.97	4.47	**5yr**	3.52	4.30	4.92	5.79	6.55	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.84	**10yr**	1.22	1.69	2.18	2.82	3.66	4.74	5.40	**10yr**	4.20	5.19	5.92	6.92	7.79	**10yr**
25yr	0.46	0.74	0.94	1.29	1.72	2.26	**25yr**	1.48	2.09	2.69	3.52	4.60	6.01	6.92	**25yr**	5.32	6.66	7.56	8.75	9.79	**25yr**
50yr	0.51	0.83	1.06	1.48	1.99	2.66	**50yr**	1.72	2.46	3.17	4.18	5.49	7.18	8.36	**50yr**	6.36	8.04	9.11	10.47	11.65	**50yr**
100yr	0.58	0.93	1.20	1.70	2.31	3.11	**100yr**	2.00	2.88	3.74	4.95	6.53	8.59	10.11	**100yr**	7.60	9.72	10.98	12.52	13.87	**100yr**
200yr	0.64	1.04	1.35	1.94	2.69	3.66	**200yr**	2.32	3.39	4.41	5.88	7.79	10.28	12.22	**200yr**	9.10	11.75	13.23	14.98	16.51	**200yr**
500yr	0.75	1.24	1.61	2.34	3.28	4.52	**500yr**	2.83	4.21	5.48	7.36	9.82	13.04	15.71	**500yr**	11.54	15.10	16.94	18.99	20.82	**500yr**

Lower Confidence Limits

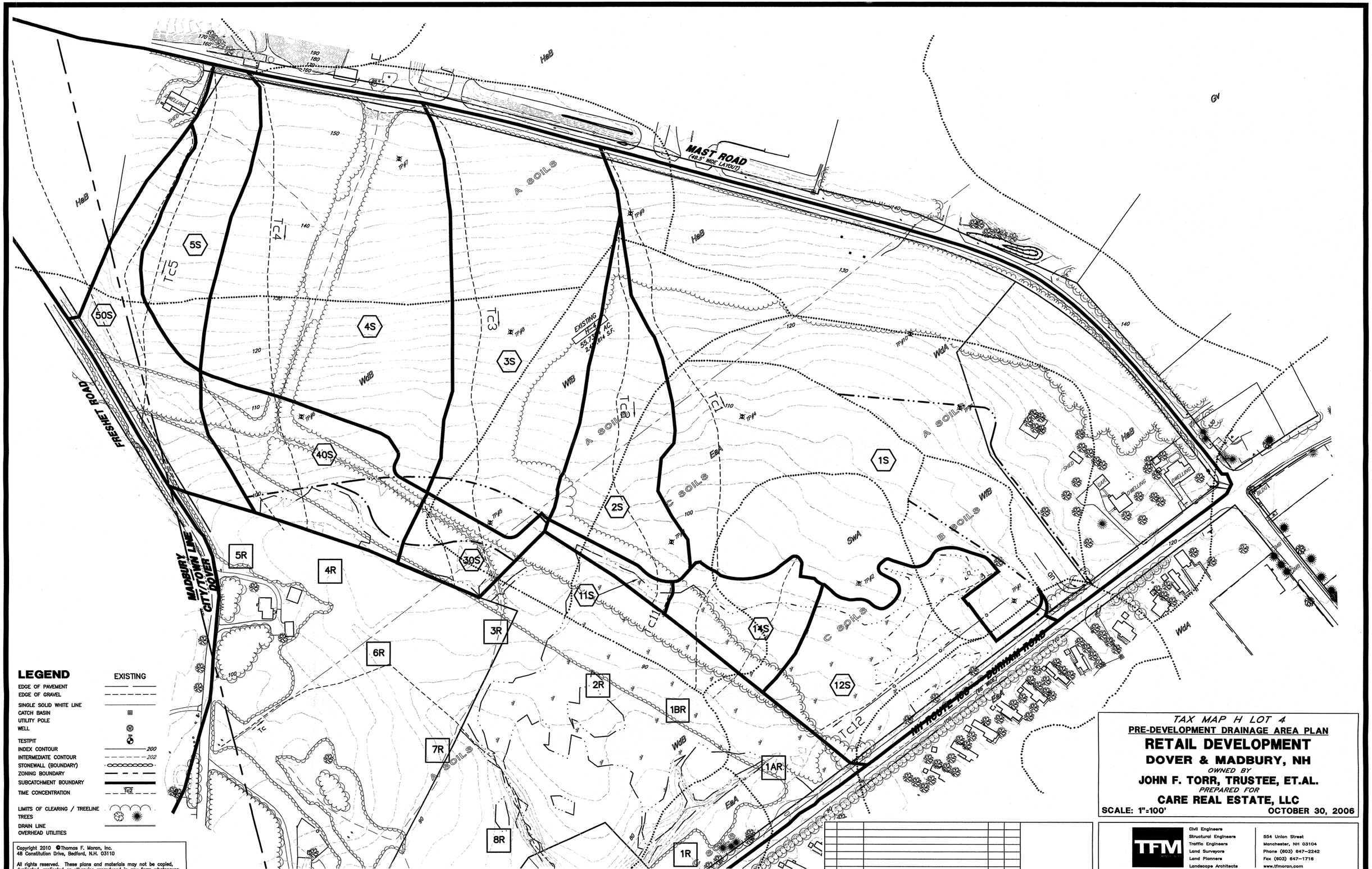
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.91	1.26	1.57	2.08	2.48	**1yr**	1.84	2.38	2.90	3.32	4.02	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.36	3.04	3.39	**2yr**	2.69	3.26	3.74	4.46	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.71	4.12	**5yr**	3.28	3.96	4.60	5.41	6.11	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.82	2.45	3.13	4.27	4.79	**10yr**	3.78	4.60	5.31	6.25	7.02	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.85	3.66	4.98	5.80	**25yr**	4.41	5.58	6.49	7.58	8.45	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.19	**50yr**	1.52	2.14	2.35	3.20	4.11	5.69	6.70	**50yr**	5.04	6.44	7.54	8.76	9.71	**50yr**
100yr	0.54	0.81	1.01	1.47	2.01	2.50	**100yr**	1.74	2.45	2.63	3.59	4.59	6.50	7.74	**100yr**	5.75	7.44	8.77	10.12	11.13	**100yr**
200yr	0.59	0.90	1.13	1.64	2.29	2.86	**200yr**	1.98	2.80	2.94	4.01	5.13	7.41	8.93	**200yr**	6.56	8.59	10.19	11.71	12.79	**200yr**
500yr	0.69	1.03	1.33	1.93	2.74	3.45	**500yr**	2.37	3.37	3.40	4.65	5.96	8.79	10.79	**500yr**	7.78	10.38	12.43	14.21	15.31	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.24	1.74	2.22	2.86	3.06	**1yr**	2.53	2.94	3.40	4.20	4.79	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.48	1.96	2.51	3.27	3.60	**2yr**	2.90	3.46	3.97	4.73	5.42	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.55	1.85	2.50	3.20	4.23	4.82	**5yr**	3.74	4.63	5.25	6.20	6.96	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.92	**10yr**	1.35	1.88	2.23	3.05	3.85	5.21	6.01	**10yr**	4.61	5.78	6.58	7.60	8.49	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.47	**25yr**	1.70	2.42	2.88	3.96	4.95	7.04	8.06	**25yr**	6.23	7.75	8.78	10.01	11.06	**25yr**
50yr	0.64	0.97	1.21	1.74	2.34	2.99	**50yr**	2.02	2.92	3.49	4.83	6.01	8.70	10.09	**50yr**	7.70	9.70	10.94	12.30	13.53	**50yr**
100yr	0.74	1.12	1.41	2.03	2.79	3.61	**100yr**	2.41	3.53	4.23	5.91	7.30	10.76	12.62	**100yr**	9.52	12.14	13.62	15.15	16.55	**100yr**
200yr	0.86	1.30	1.64	2.38	3.32	4.38	**200yr**	2.86	4.28	5.15	7.24	8.86	13.34	15.82	**200yr**	11.81	15.21	16.96	18.64	20.28	**200yr**
500yr	1.05	1.57	2.01	2.93	4.16	5.62	**500yr**	3.59	5.50	6.65	9.47	11.47	17.76	21.32	**500yr**	15.71	20.50	22.70	24.55	26.55	**500yr**

Powered by ACIS Northeast Regional Climate Center

4


MAST ROAD
(48.5' WIDE LAYOUT)
FRESHET ROAD
WORTH TOWN LINE
DOVER
MADBURY
DWELLING
SHED
GAR
BLDG
HeB
WaB
WaA
EbA
SwA
WbB
GV
A SOILS
B SOILS
C SOILS
TC1
TC2
TC3
TC4
TC5
Tc2
TC
EXISTING
H-4
55,739 AC.
2,427,614 S.F.
1S
2S
3S
4S
5S
40S
50S
30S
1AR
1BR
2R
3R
4R
5R
6R
7R
8R
11S
12S
14S
1R
TP#1
TP#2
TP#3
TP#4
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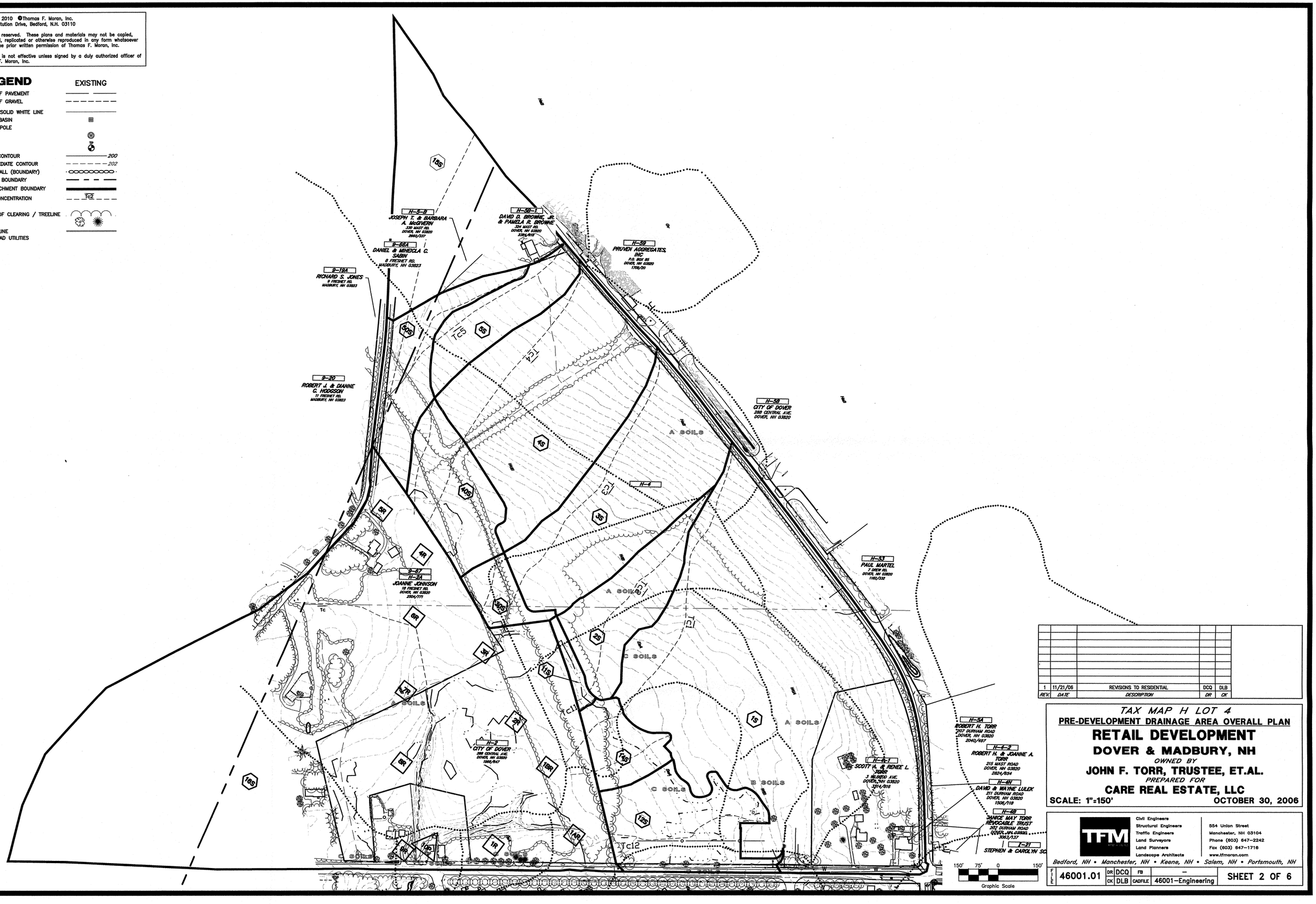
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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of Thomas F. Moran, Inc.

LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	
TESTPIT	
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	



REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

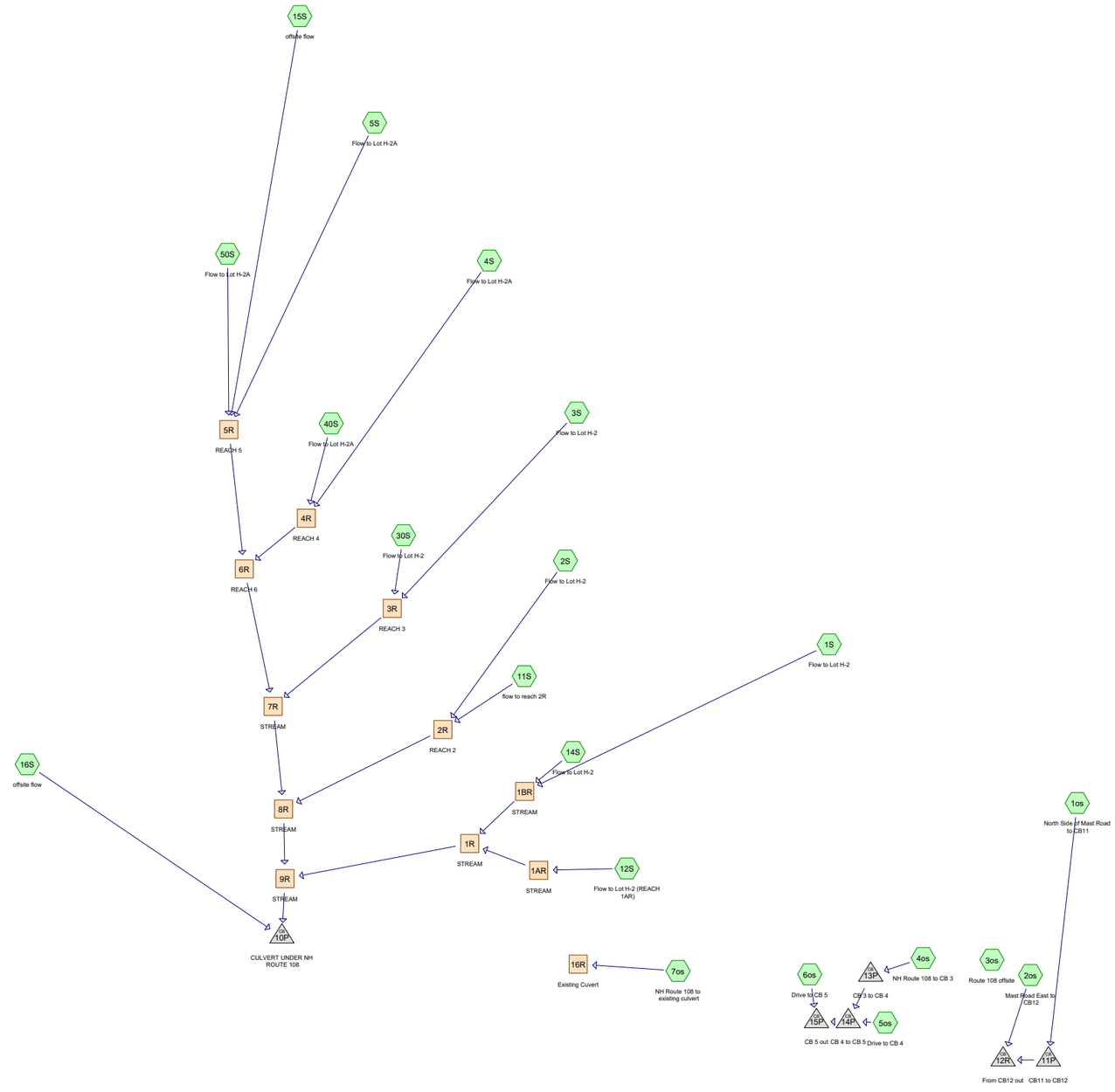
PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=150' OCTOBER 30, 2006

TFM Moran
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects
554 Union Street
Manchester, NH 03104
Phone (603) 647-2242
Fax (603) 647-1716
www.tfmoran.com
Bedford, NH • Manchester, NH • Keene, NH • Salem, NH • Portsmouth, NH

FILE	DR	CK	FB	CADFILE		
46001.01	DCQ	DLB	–	46001-Engineering	SHEET 2 OF 6	

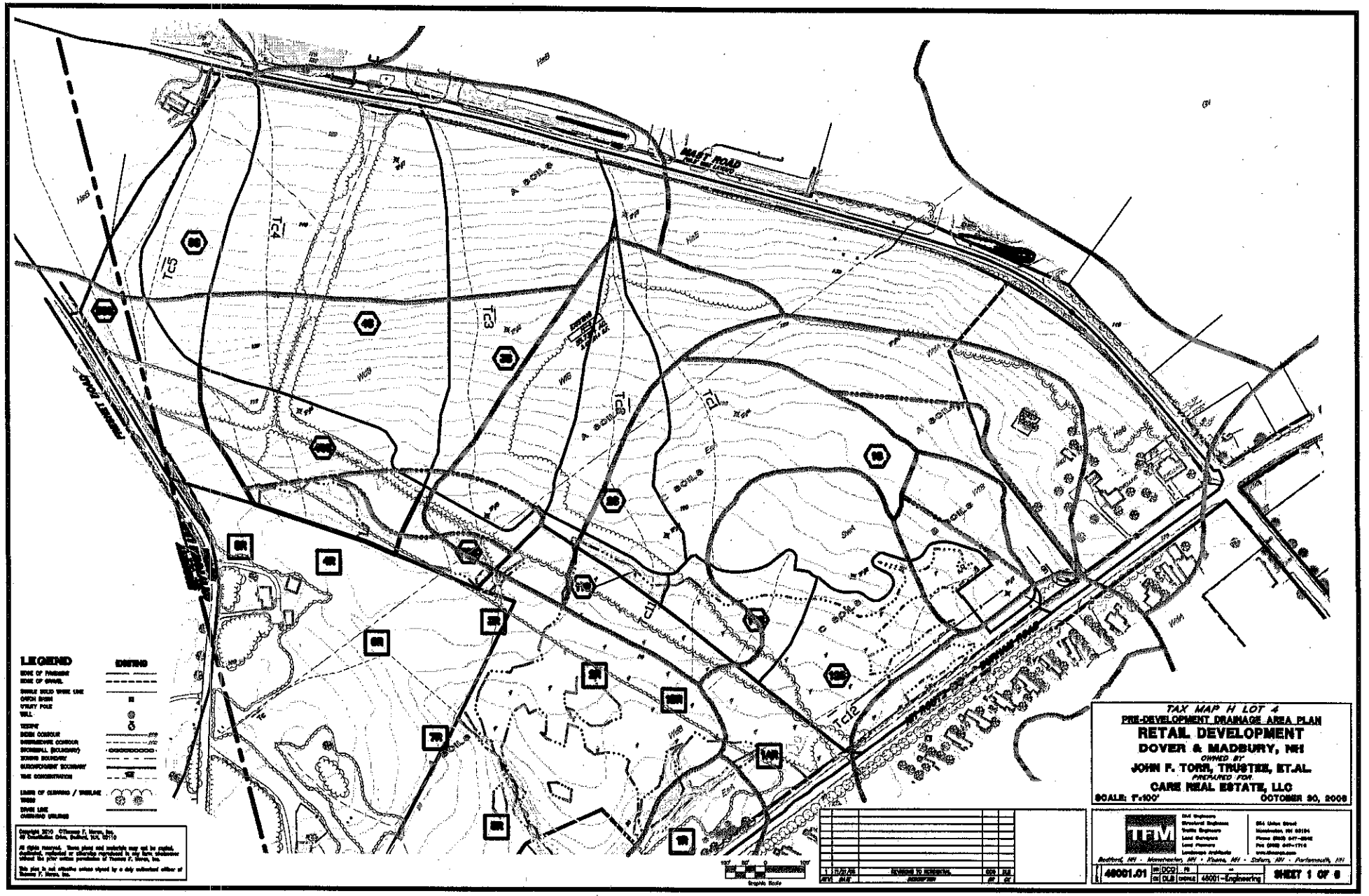


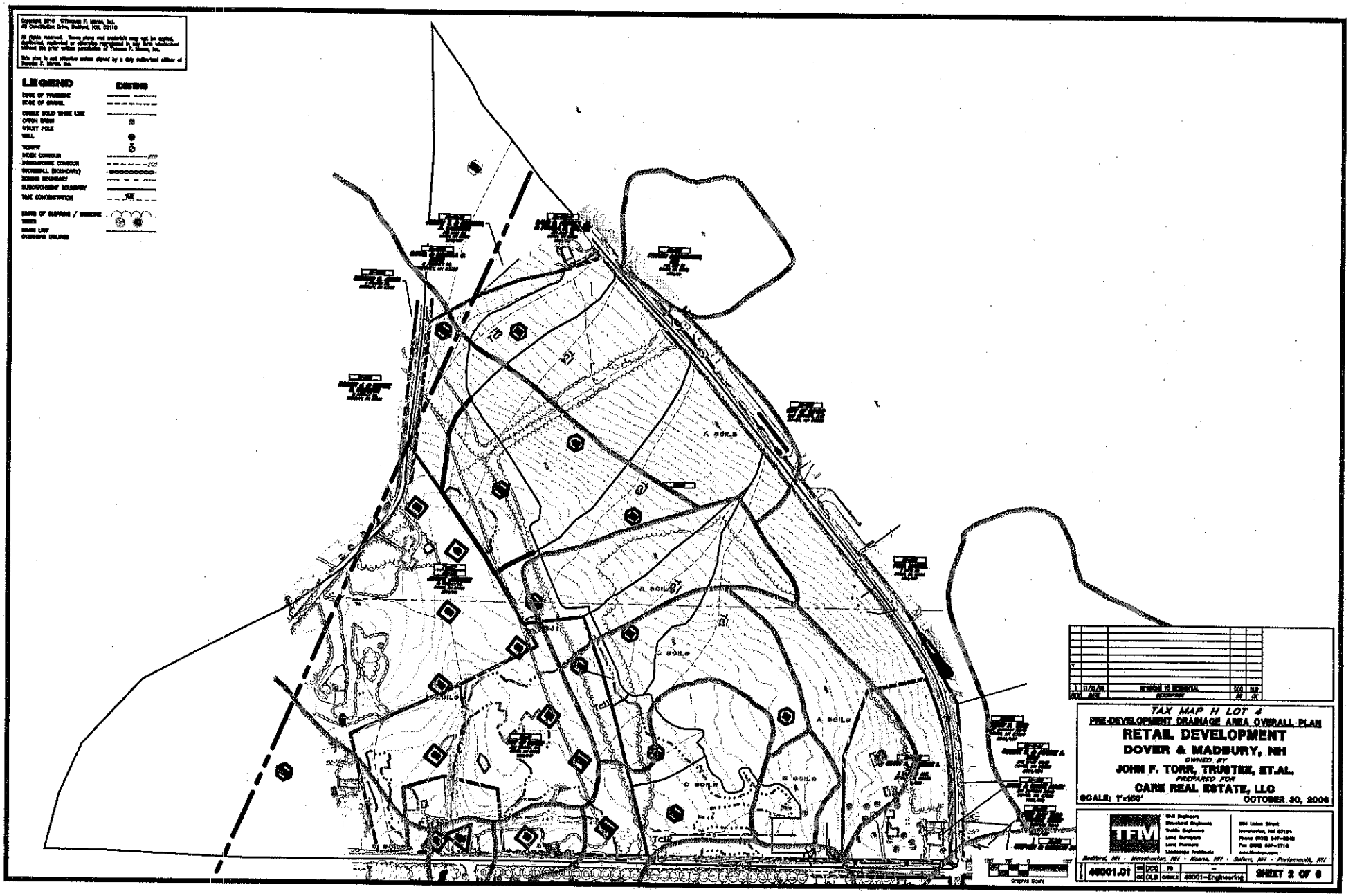
Subcat Reach Pond Link

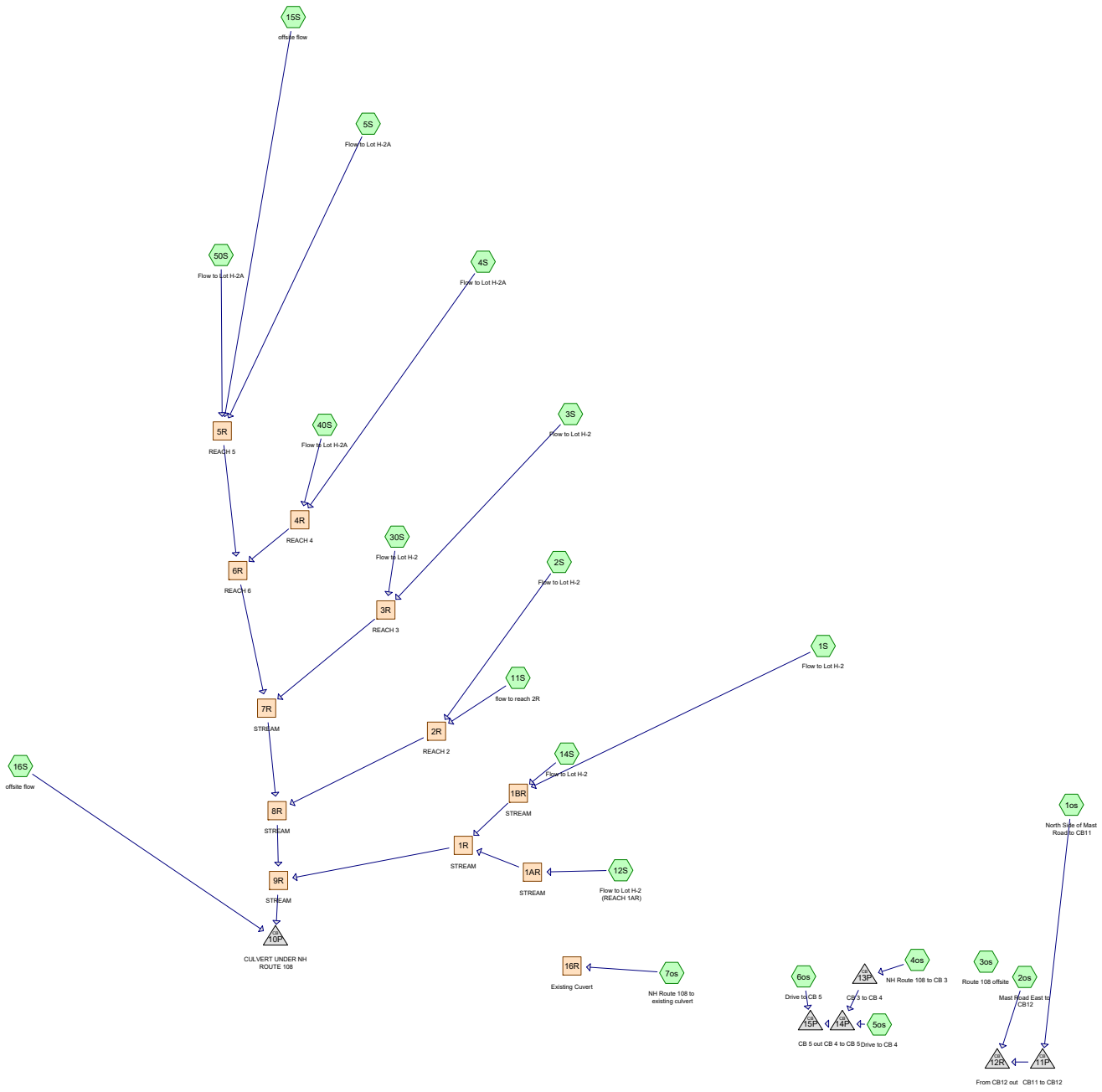
Routing Diagram for 46001.31 Pre Dev

Prepared by TF Moran, Inc., Printed 12/5/2022

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MAST ROAD
TC-1
TC-2
TC-3
TC-4
TC-5
A SOILS
B SOILS
C SOILS
LEGEND
EXISTING
TAX MAP H LOT 4
PRE-DEVELOPMENT DRAINAGE AREA PLAN
RETAIL DEVELOPMENT
DOVER & MADBURY, NH
OWNED BY
JOHN F. TORR, TRUSTEE, ET.AL.
PREPARED FOR
CARE REAL ESTATE, LLC
SCALE: 1"=100'
OCTOBER 30, 2008
46001.01
46001-Engineering
SHEET 1 OF 8


LEGEND
EXISTING
A SOILS
B SOILS
C SOILS
D SOILS
TAX MAP H LOT 4
PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN
RETAIL DEVELOPMENT
DOVER & MADBURY, NH
OWNED BY
JOHN F. TORR, TRUSTEE, ET.AL.
PREPARED FOR
CARR REAL ESTATE, LLC
SCALE: 1"=100'
OCTOBER 30, 2006
TFM
Bedford, NH · Manchester, NH · Keene, NH · Salem, NH · Portsmouth, NH
46001.01
SHEET 2 OF 6



Routing Diagram for 46001.31 Pre Dev
Prepared by TF Moran, Inc., Printed 12/5/2022
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.013	39	>75% Grass cover, Good, HSG A (1os, 2os, 3os, 4os, 15S, 16S)
1.814	74	>75% Grass cover, Good, HSG C (4os, 7os, 16S)
0.374	80	>75% Grass cover, Good, HSG D (16S)
3.397	35	Brush, Fair, HSG A (4S, 16S, 40S, 50S)
0.645	56	Brush, Fair, HSG B (30S, 40S)
1.516	70	Brush, Fair, HSG C (16S, 30S, 40S)
0.933	77	Brush, Fair, HSG D (12S, 16S)
0.343	76	Gravel roads, HSG A (4S, 40S, 50S)
0.067	85	Gravel roads, HSG B (30S, 40S)
0.025	89	Gravel roads, HSG C (30S)
1.143	98	Impervious (1S, 3S, 4S, 5S, 12S, 50S)
0.702	79	Pasture/grassland/range, Fair, HSG C (16S)
9.303	39	Pasture/grassland/range, Good, HSG A (1S, 2S, 3S)
2.443	61	Pasture/grassland/range, Good, HSG B (1S)
8.169	74	Pasture/grassland/range, Good, HSG C (1S, 2S, 12S, 14S)
6.200	80	Pasture/grassland/range, Good, HSG D (1S, 12S, 14S, 16S)
4.511	98	Paved parking & roofs (1S, 15S, 16S)
1.375	98	Paved roads w/curbs & sewers (1os, 2os, 3os, 4os, 5os, 6os, 7os)
59.619	30	Woods, Good, HSG A (1os, 1S, 2S, 3S, 4S, 5S, 11S, 15S, 16S, 30S, 40S, 50S)
0.789	55	Woods, Good, HSG B (1S, 3S, 4S, 30S, 40S)
8.714	70	Woods, Good, HSG C (2S, 11S, 12S, 14S, 16S, 30S, 40S)
0.800	77	Woods, Good, HSG D (12S, 14S, 16S)
121.897	**47**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
81.675	HSG A	1os, 1S, 2os, 2S, 3os, 3S, 4os, 4S, 5S, 11S, 15S, 16S, 30S, 40S, 50S
3.944	HSG B	1S, 3S, 4S, 30S, 40S
20.941	HSG C	1S, 2S, 4os, 7os, 11S, 12S, 14S, 16S, 30S, 40S
8.308	HSG D	1S, 12S, 14S, 16S
7.029	Other	1os, 1S, 2os, 3os, 3S, 4os, 4S, 5os, 5S, 6os, 7os, 12S, 15S, 16S, 50S
121.897		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=67 Runoff=0.68 cfs 0.057 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=0.16"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=0.82 cfs 0.338 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.71 cfs 0.053 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=0.16"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=0.12 cfs 0.046 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.12 cfs 0.008 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.00"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.00 cfs 0.000 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.42 cfs 0.030 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.00"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.00"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.087 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.10 cfs 0.014 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=1.29"
Flow Length=645' Tc=10.0 min CN=79 Runoff=5.71 cfs 0.474 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=1.11"
Flow Length=416' Tc=10.4 min CN=76 Runoff=1.88 cfs 0.162 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.00"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.08"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=0.50 cfs 0.315 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=0.53"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=0.36 cfs 0.049 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.03 cfs 0.018 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.00"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.00 cfs 0.000 af

Reach 1AR: STREAM Avg. Flow Depth=0.42' Max Vel=2.57 fps Inflow=5.71 cfs 0.474 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=5.52 cfs 0.474 af

Reach 1BR: STREAM Avg. Flow Depth=0.21' Max Vel=1.90 fps Inflow=1.88 cfs 0.500 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=1.81 cfs 0.500 af

Reach 1R: STREAM Avg. Flow Depth=0.58' Max Vel=2.22 fps Inflow=7.33 cfs 0.974 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=7.02 cfs 0.974 af

Reach 2R: REACH 2 Avg. Flow Depth=0.06' Max Vel=0.61 fps Inflow=0.17 cfs 0.060 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.14 cfs 0.060 af

Reach 3R: REACH 3 Avg. Flow Depth=0.08' Max Vel=0.78 fps Inflow=0.36 cfs 0.049 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=0.33 cfs 0.049 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.018 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.03 cfs 0.018 af

Reach 5R: REACH 5 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.00 cfs 0.000 af

Reach 6R: REACH 6 Avg. Flow Depth=0.03' Max Vel=0.22 fps Inflow=0.03 cfs 0.018 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.03 cfs 0.018 af

Reach 7R: STREAM Avg. Flow Depth=0.08' Max Vel=0.93 fps Inflow=0.33 cfs 0.067 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=0.33 cfs 0.067 af

Reach 8R: STREAM Avg. Flow Depth=0.10' Max Vel=0.97 fps Inflow=0.43 cfs 0.127 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=0.40 cfs 0.127 af

Reach 9R: STREAM Avg. Flow Depth=0.56' Max Vel=2.33 fps Inflow=7.03 cfs 1.100 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=7.01 cfs 1.100 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.35' Max Vel=4.53 fps Inflow=1.27 cfs 0.087 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=1.27 cfs 0.087 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.91' Inflow=7.01 cfs 1.415 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=7.01 cfs 1.415 af

Pond 11P: CB11 to CB12 Peak Elev=105.59' Inflow=0.68 cfs 0.057 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=0.68 cfs 0.057 af

Pond 12R: From CB12 out Peak Elev=105.36' Inflow=1.38 cfs 0.110 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=1.38 cfs 0.110 af

Pond 13P: CB 3 to CB 4 Peak Elev=106.95' Inflow=0.42 cfs 0.030 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.42 cfs 0.030 af

Pond 14P: CB 4 to CB 5 Peak Elev=105.98' Inflow=0.54 cfs 0.039 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=0.54 cfs 0.039 af

Pond 15P: CB 5 out Peak Elev=104.86' Inflow=0.81 cfs 0.060 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=0.81 cfs 0.060 af

Total Runoff Area = 121.897 ac Runoff Volume = 1.680 af Average Runoff Depth = 0.17"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Summary for Subcatchment 1os: North Side of Mast Road to CB11

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
21,973	98	Paved roads w/curbs & sewers
5,800	30	Woods, Good, HSG A
17,293	39	>75% Grass cover, Good, HSG A
45,066	67	Weighted Average
23,093		51.24% Pervious Area
21,973		48.76% Impervious Area

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

Summary for Subcatchment 1S: Flow to Lot H-2

Runoff = 0.82 cfs @ 12.71 hrs, Volume= 0.338 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
23,422	98	Impervious
335,880	30	Woods, Good, HSG A
215,930	39	Pasture/grassland/range, Good, HSG A
148,379	74	Pasture/grassland/range, Good, HSG C
41,694	80	Pasture/grassland/range, Good, HSG D
71,102	74	Pasture/grassland/range, Good, HSG C
70,496	80	Pasture/grassland/range, Good, HSG D
25,455	39	Pasture/grassland/range, Good, HSG A
106,398	61	Pasture/grassland/range, Good, HSG B
470	55	Woods, Good, HSG B
44,985	39	Pasture/grassland/range, Good, HSG A
274	74	Pasture/grassland/range, Good, HSG C
24,572	98	Paved parking & roofs
2,930	30	Woods, Good, HSG A
1,111,987	52	Weighted Average
1,063,993		95.68% Pervious Area
47,994		4.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.97		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
5.0	30	0.0730	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
4.3	325	0.0630	1.25		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
10.3	833	0.0370	1.35		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
4.3	224	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.2	1,432	Total			

Summary for Subcatchment 2os: Mast Road East to CB12

Runoff = 0.71 cfs @ 12.07 hrs, Volume= 0.053 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,731	98	Paved roads w/curbs & sewers
199	39	>75% Grass cover, Good, HSG A
9,930	97	Weighted Average
199		2.00% Pervious Area
9,731		98.00% Impervious Area

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

Summary for Subcatchment 2S: Flow to Lot H-2

Runoff = 0.12 cfs @ 12.65 hrs, Volume= 0.046 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10,946	30	Woods, Good, HSG A
77,737	39	Pasture/grassland/range, Good, HSG A
259	30	Woods, Good, HSG A
53,984	74	Pasture/grassland/range, Good, HSG C
8,032	70	Woods, Good, HSG C
150,958	52	Weighted Average
150,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0540	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
1.2	101	0.0790	1.41		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
8.7	744	0.0417	1.43		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
2.1	115	0.0322	0.90		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
20.6	1,010	Total			

Summary for Subcatchment 3os: Route 108 offsite

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.008 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,104	98	Paved roads w/curbs & sewers
830	39	>75% Grass cover, Good, HSG A
2,934	81	Weighted Average
830		28.29% Pervious Area
2,104		71.71% Impervious Area

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

Summary for Subcatchment 3S: Flow to Lot H-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
41,153	39	Pasture/grassland/range, Good, HSG A
4,922	98	Impervious
20,887	55	Woods, Good, HSG B
293,867	30	Woods, Good, HSG A
360,829	33	Weighted Average
355,907		98.64% Pervious Area
4,922		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	14	0.0200	0.90		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
10.0	36	0.0190	0.06		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
12.9	910	0.0550	1.17		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	147	0.0270	0.82		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	122	0.0189	0.69		**Shallow Concentrated Flow, FLOW THROUGH BRUSH** Woodland Kv= 5.0 fps
29.2	1,229	Total			

Summary for Subcatchment 4os: NH Route 108 to CB 3

Runoff = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,244	98	Paved roads w/curbs & sewers
2,648	74	>75% Grass cover, Good, HSG C
4,040	39	>75% Grass cover, Good, HSG A
13,932	76	Weighted Average
6,688		48.00% Pervious Area
7,244		52.00% Impervious Area

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

Summary for Subcatchment 4S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
384,995	30	Woods, Good, HSG A
7,520	76	Gravel roads, HSG A
4,607	98	Impervious
1,641	55	Woods, Good, HSG B
53,918	35	Brush, Fair, HSG A
452,681	32	Weighted Average
448,074		98.98% Pervious Area
4,607		1.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0200	0.92		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
6.8	34	0.0440	0.08		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
10.7	731	0.0520	1.14		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
4.5	302	0.0510	1.13		**Shallow Concentrated Flow, FLOW THROUGH BRUSH** Woodland Kv= 5.0 fps
1.5	83	0.0360	0.95		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
23.8	1,166	Total			

Summary for Subcatchment 5os: Drive to CB 4

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,717	98	Paved roads w/curbs & sewers
1,717		100.00% Impervious Area

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

Summary for Subcatchment 5S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
670	98	Impervious
107,090	30	Woods, Good, HSG A
107,760	30	Weighted Average
107,090		99.38% Pervious Area
670		0.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.73		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
8.9	45	0.0400	0.08		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
11.1	739	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
26.8	1,116	Total			

Summary for Subcatchment 6os: Drive to CB 5

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,747	98	Paved roads w/curbs & sewers
3,747		100.00% Impervious Area

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

Summary for Subcatchment 7os: NH Route 108 to existing culvert

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,369	98	Paved roads w/curbs & sewers
11,049	74	>75% Grass cover, Good, HSG C
24,418	87	Weighted Average
11,049		45.25% Pervious Area
13,369		54.75% Impervious Area

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

Summary for Subcatchment 11S: flow to reach 2R

Runoff = 0.10 cfs @ 12.20 hrs, Volume= 0.014 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,803	30	Woods, Good, HSG A
13,564	70	Woods, Good, HSG C
17,367	61	Weighted Average
17,367		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	29	0.0241	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.3	79	Total			

Summary for Subcatchment 12S: Flow to Lot H-2 (REACH 1AR)

Runoff = 5.71 cfs @ 12.14 hrs, Volume= 0.474 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
551	70	Woods, Good, HSG C
37,556	74	Pasture/grassland/range, Good, HSG C
701	70	Woods, Good, HSG C
19,528	74	Pasture/grassland/range, Good, HSG C
7,813	74	Pasture/grassland/range, Good, HSG C
8,566	77	Woods, Good, HSG D
120	77	Brush, Fair, HSG D
82,531	80	Pasture/grassland/range, Good, HSG D
23,565	80	Pasture/grassland/range, Good, HSG D
10,706	98	Impervious
191,637	79	Weighted Average
180,931		94.41% Pervious Area
10,706		5.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0800	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
3.6	263	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	332	0.0250	3.59	334.67	**Parabolic Channel,** W=140.00' D=1.00' Area=93.3 sf Perim=140.0' n= 0.050
10.0	645	Total			

Summary for Subcatchment 14S: Flow to Lot H-2

Runoff = 1.88 cfs @ 12.15 hrs, Volume= 0.162 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
17,221	74	Pasture/grassland/range, Good, HSG C
36,737	80	Pasture/grassland/range, Good, HSG D
18,706	70	Woods, Good, HSG C
3,459	77	Woods, Good, HSG D
76,123	76	Weighted Average
76,123		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0220	0.10		**Sheet Flow, FLOW THROUGH PASTURE** Grass: Dense n= 0.240 P2= 3.00"
0.8	74	0.0439	1.47		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.7	152	0.0310	3.44	220.23	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
0.8	140	0.0236	3.00	192.15	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
10.4	416	Total			

Summary for Subcatchment 15S: offsite flow

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
308,398	30	Woods, Good, HSG A
6,100	98	Paved parking & roofs
43,560	39	>75% Grass cover, Good, HSG A
358,058	32	Weighted Average
351,958		98.30% Pervious Area
6,100		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
7.6	38	0.0420	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
19.7	1,210	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.5	1,260	Total			

Summary for Subcatchment 16S: offsite flow

Runoff = 0.50 cfs @ 15.05 hrs, Volume= 0.315 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,858	30	Woods, Good, HSG A
13,459	35	Brush, Fair, HSG A
25,519	70	Woods, Good, HSG C
28,002	70	Brush, Fair, HSG C
40,537	77	Brush, Fair, HSG D
15,070	80	Pasture/grassland/range, Good, HSG D
12,170	77	Woods, Good, HSG D
4,441	98	Paved parking & roofs
32,048	70	Woods, Good, HSG C
30,577	79	Pasture/grassland/range, Fair, HSG C
5,334	98	Paved parking & roofs
16,304	80	>75% Grass cover, Good, HSG D
10,644	77	Woods, Good, HSG D
9,584	98	Paved parking & roofs
58,128	98	Paved parking & roofs
65,340	74	>75% Grass cover, Good, HSG C
260,648	70	Woods, Good, HSG C
999,761	30	Woods, Good, HSG A
326,700	39	>75% Grass cover, Good, HSG A
88,350	98	Paved parking & roofs
2,052,474	48	Weighted Average
1,886,637		91.92% Pervious Area
165,837		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.9	100	0.0150	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
7.6	370	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	136	0.0126	6.06	262.50	**Parabolic Channel,** W=50.00' D=1.30' Area=43.3 sf Perim=50.1' n= 0.025
0.3	194	0.0284	9.61	153.83	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.030
0.9	512	0.0258	9.08	163.39	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
0.2	100	0.0190	7.79	140.22	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
34.3	1,412	Total			

Summary for Subcatchment 30S: Flow to Lot H-2

Runoff = 0.36 cfs @ 12.31 hrs, Volume= 0.049 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
215	30	Woods, Good, HSG A
1,600	85	Gravel roads, HSG B
1,110	89	Gravel roads, HSG C
10,188	55	Woods, Good, HSG B
1,310	70	Woods, Good, HSG C
22,056	70	Brush, Fair, HSG C
11,719	56	Brush, Fair, HSG B
48,198	64	Weighted Average
48,198		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0200	0.07		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
4.7	200	0.0200	0.71		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
17.4	250	Total			

Summary for Subcatchment 40S: Flow to Lot H-2A

Runoff = 0.03 cfs @ 15.06 hrs, Volume= 0.018 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,496	70	Woods, Good, HSG C
15,979	70	Brush, Fair, HSG C
16,386	56	Brush, Fair, HSG B
1,188	55	Woods, Good, HSG B
1,320	85	Gravel roads, HSG B
30,854	30	Woods, Good, HSG A
5,490	76	Gravel roads, HSG A
1,978	30	Woods, Good, HSG A
52,548	35	Brush, Fair, HSG A
144,239	47	Weighted Average
144,239		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0560	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
6.1	402	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
14.5	452	Total			

Summary for Subcatchment 50S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
100,348	30	Woods, Good, HSG A
5,456	98	Impervious
1,920	76	Gravel roads, HSG A
28,063	35	Brush, Fair, HSG A
135,787	34	Weighted Average
130,331		95.98% Pervious Area
5,456		4.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0500	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
9.3	610	0.0479	1.09		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.8	987	Total			

Summary for Reach 1AR: STREAM

Inflow Area = 4.399 ac, 5.59% Impervious, Inflow Depth = 1.29" for 2 YR event
Inflow = 5.71 cfs @ 12.14 hrs, Volume= 0.474 af
Outflow = 5.52 cfs @ 12.17 hrs, Volume= 0.474 af, Atten= 3%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.57 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 7.6 min

Peak Storage= 794 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 108.07 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 370.0' Slope= 0.0314 '/'
Inlet Invert= 87.70', Outlet Invert= 76.10'



Summary for Reach 1BR: STREAM

Inflow Area = 27.275 ac, 4.04% Impervious, Inflow Depth = 0.22" for 2 YR event
Inflow = 1.88 cfs @ 12.15 hrs, Volume= 0.500 af
Outflow = 1.81 cfs @ 12.18 hrs, Volume= 0.500 af, Atten= 4%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.90 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 5.2 min

Peak Storage= 296 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 119.58 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 310.0' Slope= 0.0384 '/'
Inlet Invert= 88.00', Outlet Invert= 76.10'



Summary for Reach 1R: STREAM

[62] Hint: Exceeded Reach 1AR OUTLET depth by 0.18' @ 12.26 hrs
[62] Hint: Exceeded Reach 1BR OUTLET depth by 0.37' @ 12.22 hrs

Inflow Area = 31.675 ac, 4.25% Impervious, Inflow Depth = 0.37" for 2 YR event
Inflow = 7.33 cfs @ 12.17 hrs, Volume= 0.974 af
Outflow = 7.02 cfs @ 12.21 hrs, Volume= 0.974 af, Atten= 4%, Lag= 2.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.22 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 7.5 min

Peak Storage= 1,199 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 78.59 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 380.0' Slope= 0.0166 '/'
Inlet Invert= 76.10', Outlet Invert= 69.80'



Summary for Reach 2R: REACH 2

Inflow Area = 3.864 ac, 0.00% Impervious, Inflow Depth = 0.19" for 2 YR event
Inflow = 0.17 cfs @ 12.56 hrs, Volume= 0.060 af
Outflow = 0.14 cfs @ 12.76 hrs, Volume= 0.060 af, Atten= 13%, Lag= 12.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.61 fps, Min. Travel Time= 15.4 min
Avg. Velocity = 0.37 fps, Avg. Travel Time= 24.9 min

Peak Storage= 134 cf @ 12.76 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.50' Flow Area= 10.5 sf, Capacity= 42.77 cfs

4.00' x 1.50' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 10.00'
Length= 560.0' Slope= 0.0193 '/'
Inlet Invert= 93.80', Outlet Invert= 83.00'



Summary for Reach 3R: REACH 3

Inflow Area = 9.390 ac, 1.20% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.36 cfs @ 12.31 hrs, Volume= 0.049 af
Outflow = 0.33 cfs @ 12.42 hrs, Volume= 0.049 af, Atten= 8%, Lag= 6.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.78 fps, Min. Travel Time= 7.3 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 18.4 min

Peak Storage= 145 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 24.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 340.0' Slope= 0.0200 '/'
Inlet Invert= 95.30', Outlet Invert= 88.50'



‡

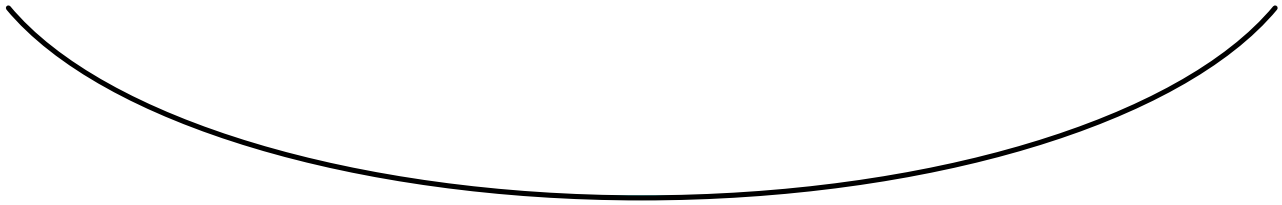
Summary for Reach 4R: REACH 4

Inflow Area = 13.703 ac, 0.77% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.03 cfs @ 15.06 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 15.23 hrs, Volume= 0.018 af, Atten= 1%, Lag= 10.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.23 fps, Min. Travel Time= 18.6 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 20.5 min

Peak Storage= 31 cf @ 15.23 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 468.29 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050
Length= 255.0' Slope= 0.0149 '/'
Inlet Invert= 95.80', Outlet Invert= 92.00'



‡

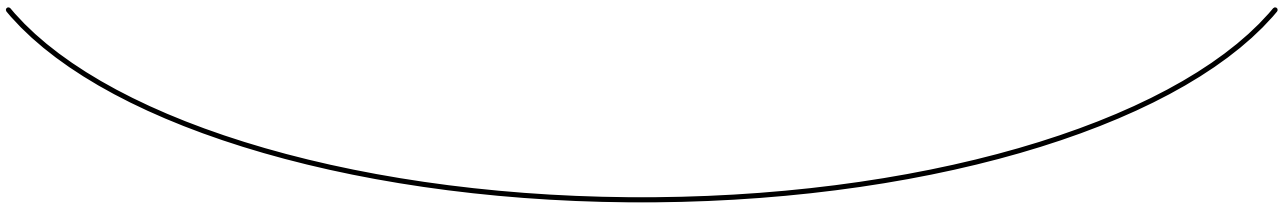
Summary for Reach 5R: REACH 5

Inflow Area = 13.811 ac, 2.03% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.30' Flow Area= 99.7 sf, Capacity= 409.57 cfs

115.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 540.0' Slope= 0.0231 '/'
Inlet Invert= 104.50', Outlet Invert= 92.00'



‡

Summary for Reach 6R: REACH 6

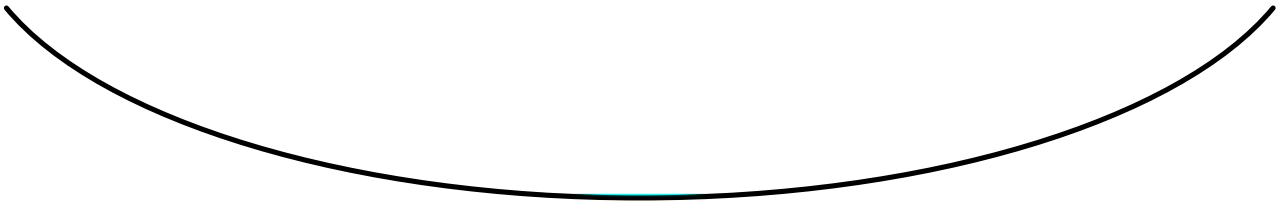
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.01' @ 24.76 hrs
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.03' @ 15.51 hrs

Inflow Area = 27.514 ac, 1.40% Impervious, Inflow Depth = 0.01" for 2 YR event
Inflow = 0.03 cfs @ 15.23 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 15.51 hrs, Volume= 0.018 af, Atten= 1%, Lag= 16.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.22 fps, Min. Travel Time= 20.6 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 24.9 min

Peak Storage= 34 cf @ 15.51 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 1.30' Flow Area= 43.3 sf, Capacity= 131.20 cfs

50.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 278.0' Slope= 0.0126 '/'
Inlet Invert= 92.00', Outlet Invert= 88.50'



‡

Summary for Reach 7R: STREAM

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.01' @ 15.71 hrs
[62] Hint: Exceeded Reach 6R OUTLET depth by 0.08' @ 12.47 hrs

Inflow Area = 36.904 ac, 1.35% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.33 cfs @ 12.42 hrs, Volume= 0.067 af
Outflow = 0.33 cfs @ 12.47 hrs, Volume= 0.067 af, Atten= 1%, Lag= 2.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.93 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.45 fps, Avg. Travel Time= 7.1 min

Peak Storage= 68 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 92.22 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 194.0' Slope= 0.0284 '/'
Inlet Invert= 88.50', Outlet Invert= 83.00'



Summary for Reach 8R: STREAM

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.04' @ 12.60 hrs
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.03' @ 12.96 hrs

Inflow Area = 40.769 ac, 1.23% Impervious, Inflow Depth = 0.04" for 2 YR event
Inflow = 0.43 cfs @ 12.55 hrs, Volume= 0.127 af
Outflow = 0.40 cfs @ 12.67 hrs, Volume= 0.127 af, Atten= 6%, Lag= 7.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 8.8 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 16.1 min

Peak Storage= 212 cf @ 12.67 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 98.00 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 512.0' Slope= 0.0258 '/'
Inlet Invert= 83.00', Outlet Invert= 69.80'



Summary for Reach 9R: STREAM

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.02' @ 12.74 hrs
[62] Hint: Exceeded Reach 8R OUTLET depth by 0.55' @ 12.21 hrs

Inflow Area = 72.443 ac, 2.55% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 7.03 cfs @ 12.21 hrs, Volume= 1.100 af
Outflow = 7.01 cfs @ 12.22 hrs, Volume= 1.100 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.33 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 1.9 min

Peak Storage= 301 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 84.13 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 100.0' Slope= 0.0190 '/'
Inlet Invert= 69.80', Outlet Invert= 67.90'



Summary for Reach 16R: Existing Cuvert

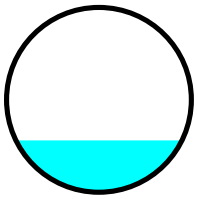
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.561 ac, 54.75% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.53 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 13 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.45 cfs

15.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 45.0' Slope= 0.0113 '/'
Inlet Invert= 90.05', Outlet Invert= 89.54'



Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.46' @ 12.22 hrs

Inflow Area = 119.561 ac, 4.73% Impervious, Inflow Depth = 0.14" for 2 YR event
Inflow = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af
Outflow = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af, Atten= 0%, Lag= 0.0 min
Primary = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Peak Elev= 68.91' @ 12.22 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=7.01 cfs @ 12.22 hrs HW=68.91' (Free Discharge)
↑**1=Culvert** (Barrel Controls 7.01 cfs @ 4.21 fps)

Summary for Pond 11P: CB11 to CB12

[57] Hint: Peaked at 105.59' (Flood elevation advised)

Inflow Area = 1.035 ac, 48.76% Impervious, Inflow Depth = 0.66" for 2 YR event
Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.11'	**12.0" Round Culvert** L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 105.11' / 104.86' S= 0.0132 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.09 hrs HW=105.58' TW=105.35' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.69 cfs @ 2.73 fps)

Summary for Pond 12R: From CB12 out

Inflow Area = 1.263 ac, 57.65% Impervious, Inflow Depth = 1.04" for 2 YR event
Inflow = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af
Outflow = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.36' @ 12.08 hrs
Flood Elev= 109.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.63'	**12.0" Round Culvert** L= 20.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 104.63' / 104.53' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.37 cfs @ 12.08 hrs HW=105.36' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.37 cfs @ 3.14 fps)

Summary for Pond 13P: CB 3 to CB 4

[57] Hint: Peaked at 106.95' (Flood elevation advised)

Inflow Area = 0.320 ac, 52.00% Impervious, Inflow Depth = 1.11" for 2 YR event
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af
Outflow = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 106.95' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	106.63'	**12.0" Round Culvert** L= 98.0' Ke= 0.500 Inlet / Outlet Invert= 106.63' / 105.64' S= 0.0101 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.08 hrs HW=106.95' TW=105.98' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.41 cfs @ 2.81 fps)

Summary for Pond 14P: CB 4 to CB 5

[57] Hint: Peaked at 105.98' (Flood elevation advised)

Inflow Area = 0.359 ac, 57.26% Impervious, Inflow Depth = 1.31" for 2 YR event
Inflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af
Outflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.98' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.61'	**12.0" Round Culvert** L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 105.61' / 104.40' S= 0.0484 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.54 cfs @ 12.07 hrs HW=105.98' TW=104.86' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.54 cfs @ 2.06 fps)

Summary for Pond 15P: CB 5 out

[57] Hint: Peaked at 104.86' (Flood elevation advised)

Inflow Area = 0.445 ac, 65.52% Impervious, Inflow Depth = 1.62" for 2 YR event
Inflow = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Peak Elev= 104.86' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	104.33'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 104.33' / 104.23' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.07 hrs HW=104.86' (Free Discharge)
1=Culvert (Barrel Controls 0.81 cfs @ 2.81 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=67 Runoff=1.96 cfs 0.140 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=0.69"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=8.88 cfs 1.469 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=1.09 cfs 0.083 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=0.69"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=1.27 cfs 0.199 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.23 cfs 0.015 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.02"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.02 cfs 0.015 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.90 cfs 0.062 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.01"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.02 cfs 0.010 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.00"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=2.23 cfs 0.155 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.44 cfs 0.040 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=2.58"
Flow Length=645' Tc=10.0 min CN=79 Runoff=11.63 cfs 0.946 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=2.32"
Flow Length=416' Tc=10.4 min CN=76 Runoff=4.09 cfs 0.338 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.01"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.02 cfs 0.008 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.49"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=8.26 cfs 1.939 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=1.21 cfs 0.130 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.45"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.64 cfs 0.124 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.04"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.01 cfs 0.009 af

Reach 1AR: STREAM Avg. Flow Depth=0.63' Max Vel=3.21 fps Inflow=11.63 cfs 0.946 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=11.36 cfs 0.946 af

Reach 1BR: STREAM Avg. Flow Depth=0.58' Max Vel=3.38 fps Inflow=10.69 cfs 1.808 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=10.66 cfs 1.808 af

Reach 1R: STREAM Avg. Flow Depth=0.94' Max Vel=2.90 fps Inflow=17.68 cfs 2.753 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=17.42 cfs 2.753 af

Reach 2R: REACH 2 Avg. Flow Depth=0.23' Max Vel=1.43 fps Inflow=1.54 cfs 0.240 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=1.46 cfs 0.240 af

Reach 3R: REACH 3 Avg. Flow Depth=0.17' Max Vel=1.24 fps Inflow=1.21 cfs 0.146 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.16 cfs 0.146 af

Reach 4R: REACH 4 Avg. Flow Depth=0.09' Max Vel=0.57 fps Inflow=0.64 cfs 0.133 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.60 cfs 0.133 af

Reach 5R: REACH 5 Avg. Flow Depth=0.01' Max Vel=0.22 fps Inflow=0.03 cfs 0.017 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.03 cfs 0.017 af

Reach 6R: REACH 6 Avg. Flow Depth=0.10' Max Vel=0.56 fps Inflow=0.60 cfs 0.150 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.54 cfs 0.150 af

Reach 7R: STREAM Avg. Flow Depth=0.20' Max Vel=1.58 fps Inflow=1.36 cfs 0.296 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=1.36 cfs 0.296 af

Reach 8R: STREAM Avg. Flow Depth=0.30' Max Vel=1.93 fps Inflow=2.82 cfs 0.536 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=2.78 cfs 0.536 af

Reach 9R: STREAM Avg. Flow Depth=0.95' Max Vel=3.13 fps Inflow=19.05 cfs 3.289 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=19.05 cfs 3.289 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.47' Max Vel=5.30 fps Inflow=2.23 cfs 0.155 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.23 cfs 0.155 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.95' Inflow=24.79 cfs 5.228 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=24.79 cfs 5.228 af

Pond 11P: CB11 to CB12 Peak Elev=106.21' Inflow=1.96 cfs 0.140 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.96 cfs 0.140 af

Pond 12R: From CB12 out Peak Elev=105.94' Inflow=3.04 cfs 0.223 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.04 cfs 0.223 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.13' Inflow=0.90 cfs 0.062 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.90 cfs 0.062 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.15' Inflow=1.09 cfs 0.077 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.09 cfs 0.077 af

Pond 15P: CB 5 out Peak Elev=105.09' Inflow=1.50 cfs 0.109 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.50 cfs 0.109 af

Total Runoff Area = 121.897 ac Runoff Volume = 5.732 af Average Runoff Depth = 0.56"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=2.54"
Tc=5.0 min CN=67 Runoff=3.15 cfs 0.219 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=1.29"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=20.18 cfs 2.754 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=1.38 cfs 0.107 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=1.29"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=2.91 cfs 0.374 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=0.32 cfs 0.022 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.17"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.19 cfs 0.118 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=1.32 cfs 0.090 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.13"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.19 cfs 0.117 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.07"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.02 cfs 0.015 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=2.99 cfs 0.211 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.01"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.77 cfs 0.067 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=3.69"
Flow Length=645' Tc=10.0 min CN=79 Runoff=16.59 cfs 1.352 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=3.39"
Flow Length=416' Tc=10.4 min CN=76 Runoff=6.00 cfs 0.493 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.13"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.15 cfs 0.092 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.01"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=22.36 cfs 3.952 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=2.27"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=2.03 cfs 0.209 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=452' Tc=14.5 min CN=47 Runoff=1.92 cfs 0.259 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.21"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.09 cfs 0.055 af

Reach 1AR: STREAM Avg. Flow Depth=0.77' Max Vel=3.57 fps Inflow=16.59 cfs 1.352 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=16.28 cfs 1.352 af

Reach 1BR: STREAM Avg. Flow Depth=0.88' Max Vel=4.25 fps Inflow=23.10 cfs 3.247 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=23.07 cfs 3.247 af

Reach 1R: STREAM Avg. Flow Depth=1.29' Max Vel=3.44 fps Inflow=32.27 cfs 4.599 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=32.24 cfs 4.599 af

Reach 2R: REACH 2 Avg. Flow Depth=0.37' Max Vel=1.89 fps Inflow=3.40 cfs 0.441 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=3.29 cfs 0.441 af

Reach 3R: REACH 3 Avg. Flow Depth=0.24' Max Vel=1.51 fps Inflow=2.03 cfs 0.327 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.97 cfs 0.327 af

Reach 4R: REACH 4 Avg. Flow Depth=0.15' Max Vel=0.79 fps Inflow=1.92 cfs 0.375 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=1.78 cfs 0.375 af

Reach 5R: REACH 5 Avg. Flow Depth=0.04' Max Vel=0.43 fps Inflow=0.25 cfs 0.162 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.25 cfs 0.162 af

Reach 6R: REACH 6 Avg. Flow Depth=0.17' Max Vel=0.79 fps Inflow=1.78 cfs 0.537 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=1.68 cfs 0.537 af

Reach 7R: STREAM Avg. Flow Depth=0.33' Max Vel=2.16 fps Inflow=3.38 cfs 0.865 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=3.37 cfs 0.865 af

Reach 8R: STREAM Avg. Flow Depth=0.49' Max Vel=2.54 fps Inflow=6.66 cfs 1.305 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=6.55 cfs 1.305 af

Reach 9R: STREAM Avg. Flow Depth=1.36' Max Vel=3.79 fps Inflow=38.21 cfs 5.904 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=38.21 cfs 5.904 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.55' Max Vel=5.74 fps Inflow=2.99 cfs 0.211 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.99 cfs 0.211 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.28' Inflow=56.60 cfs 9.856 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=56.60 cfs 9.856 af

Pond 11P: CB11 to CB12 Peak Elev=107.25' Inflow=3.15 cfs 0.219 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=3.15 cfs 0.219 af

Pond 12R: From CB12 out Peak Elev=106.56' Inflow=4.53 cfs 0.326 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=4.53 cfs 0.326 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.26' Inflow=1.32 cfs 0.090 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.32 cfs 0.090 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.28' Inflow=1.56 cfs 0.109 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.56 cfs 0.109 af

Pond 15P: CB 5 out Peak Elev=105.27' Inflow=2.08 cfs 0.151 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.08 cfs 0.151 af

Total Runoff Area = 121.897 ac Runoff Volume = 10.566 af Average Runoff Depth = 1.04"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=3.45"
Tc=5.0 min CN=67 Runoff=4.33 cfs 0.298 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=1.95"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=32.85 cfs 4.155 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=1.66 cfs 0.130 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=1.95"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=4.76 cfs 0.564 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=0.40 cfs 0.028 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.42"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.77 cfs 0.287 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=1.71 cfs 0.118 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.36"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.73 cfs 0.307 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.24"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.08 cfs 0.050 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.63 cfs 0.050 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=3.70 cfs 0.264 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.83"
Flow Length=79' Tc=10.3 min CN=61 Runoff=1.12 cfs 0.094 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=4.75"
Flow Length=645' Tc=10.0 min CN=79 Runoff=21.25 cfs 1.741 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=4.42"
Flow Length=416' Tc=10.4 min CN=76 Runoff=7.80 cfs 0.643 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.36"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.55 cfs 0.243 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.59"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=39.62 cfs 6.228 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=3.14"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=2.86 cfs 0.289 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=452' Tc=14.5 min CN=47 Runoff=3.62 cfs 0.413 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.48"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.42 cfs 0.124 af

Reach 1AR: STREAM Avg. Flow Depth=0.88' Max Vel=3.84 fps Inflow=21.25 cfs 1.741 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=20.90 cfs 1.741 af

Reach 1BR: STREAM Avg. Flow Depth=1.12' Max Vel=4.84 fps Inflow=36.84 cfs 4.799 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=36.80 cfs 4.799 af

Reach 1R: STREAM Avg. Flow Depth=1.59' Max Vel=3.85 fps Inflow=48.78 cfs 6.540 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=48.71 cfs 6.540 af

Reach 2R: REACH 2 Avg. Flow Depth=0.49' Max Vel=2.21 fps Inflow=5.49 cfs 0.658 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=5.35 cfs 0.658 af

Reach 3R: REACH 3 Avg. Flow Depth=0.29' Max Vel=1.71 fps Inflow=2.89 cfs 0.576 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=2.82 cfs 0.576 af

Reach 4R: REACH 4 Avg. Flow Depth=0.21' Max Vel=0.97 fps Inflow=3.62 cfs 0.721 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=3.43 cfs 0.721 af

Reach 5R: REACH 5 Avg. Flow Depth=0.08' Max Vel=0.62 fps Inflow=0.98 cfs 0.418 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.87 cfs 0.418 af

Reach 6R: REACH 6 Avg. Flow Depth=0.24' Max Vel=0.97 fps Inflow=3.43 cfs 1.139 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=3.28 cfs 1.139 af

Reach 7R: STREAM Avg. Flow Depth=0.46' Max Vel=2.60 fps Inflow=5.95 cfs 1.715 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=5.94 cfs 1.715 af

Reach 8R: STREAM Avg. Flow Depth=0.66' Max Vel=2.98 fps Inflow=11.28 cfs 2.373 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=11.13 cfs 2.373 af

Reach 9R: STREAM Avg. Flow Depth=1.69' Max Vel=4.26 fps Inflow=59.37 cfs 8.913 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=59.36 cfs 8.913 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.62' Max Vel=6.06 fps Inflow=3.70 cfs 0.264 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=3.70 cfs 0.264 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=72.79' Inflow=93.34 cfs 15.141 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=93.34 cfs 15.141 af

Pond 11P: CB11 to CB12 Peak Elev=108.93' Inflow=4.33 cfs 0.298 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=4.33 cfs 0.298 af

Pond 12R: From CB12 out Peak Elev=107.63' Inflow=5.98 cfs 0.427 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=5.98 cfs 0.427 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.37' Inflow=1.71 cfs 0.118 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.71 cfs 0.118 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.40' Inflow=2.00 cfs 0.141 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=2.00 cfs 0.141 af

Pond 15P: CB 5 out Peak Elev=105.45' Inflow=2.63 cfs 0.190 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.63 cfs 0.190 af

Total Runoff Area = 121.897 ac Runoff Volume = 16.050 af Average Runoff Depth = 1.58"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac



LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- (5) SUBCATCHMENT
- (1) POND
- (9) REACH
- (A) DISCHARGE POINT

Graphic Scale 30 15 0 30

TAX MAP H LOT 4–3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD	*AND*	*APPLICANT/DEVELOPER*
n/f VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE BEDFORD, NH 03110		BOHLER ENGINEERING, LLC 352 TURNPIKE RD, 3RD FLOOR SOUTHBOROUGH, MA 01772

SCALE: 1"=100' **DECEMBER 5, 2024**

REV.	DATE	DESCRIPTION	DR	CK

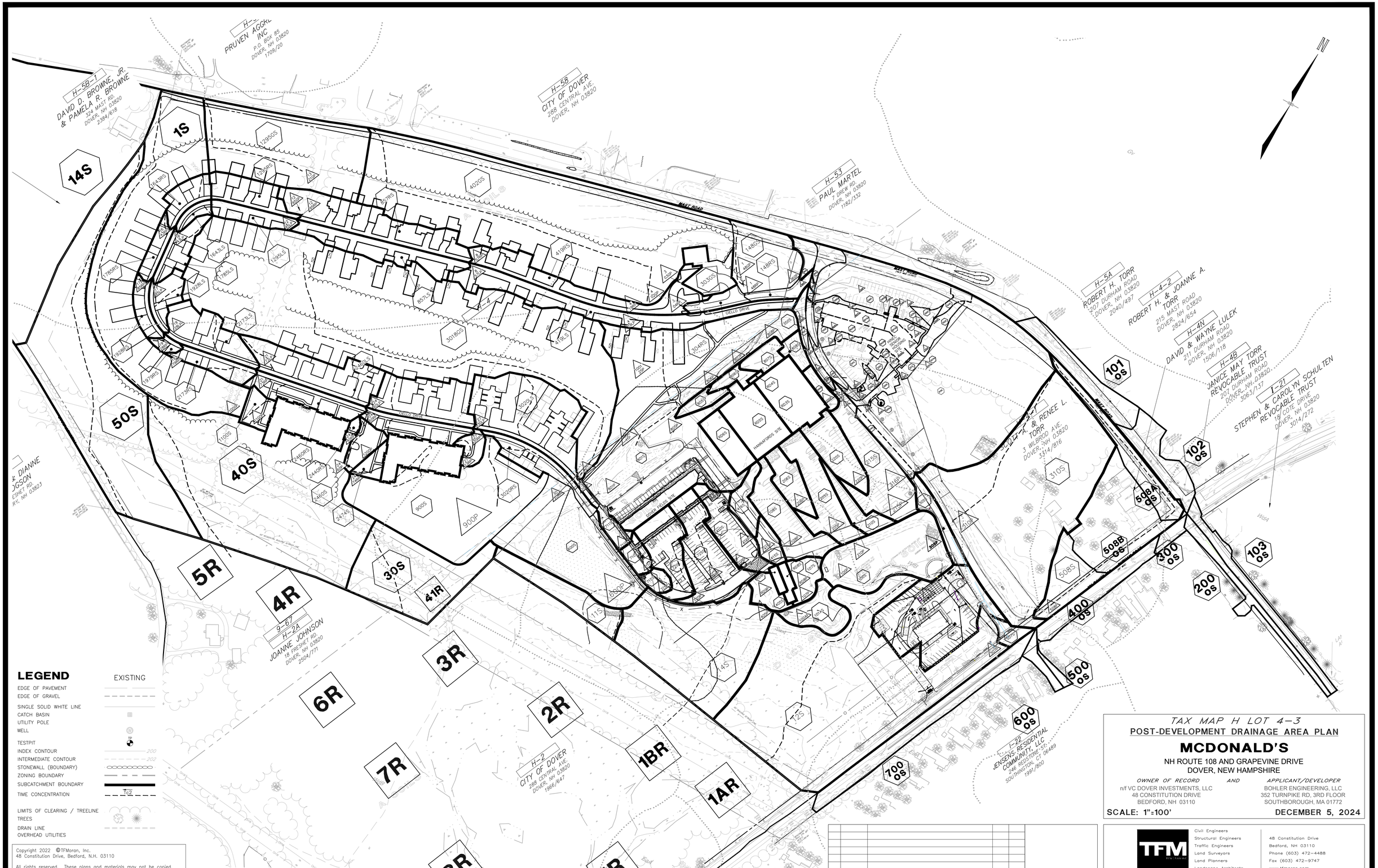
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Bedford, NH • Portsmouth, NH

FILE	46001.33	DR	JMR	FB	–	SHEET 3 OF 4
		CK	RED	CADFILE	46001.33 DRAINAGE	



LEGEND

EXISTING

- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- SINGLE SOLID WHITE LINE
- CATCH BASIN
- UTILITY POLE
- WELL
- TESTPIT
- INDEX CONTOUR — 200
- INTERMEDIATE CONTOUR — 202
- STONEWALL (BOUNDARY)
- ZONING BOUNDARY
- SUBCATCHMENT BOUNDARY
- TIME CONCENTRATION — Tc2
- LIMITS OF CLEARING / TREELINE
- TREES
- DRAIN LINE
- OVERHEAD UTILITIES

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100' 50' 0 100'
Graphic Scale

REV.	DATE	DESCRIPTION	DR	CK

TAX MAP H LOT 4–3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

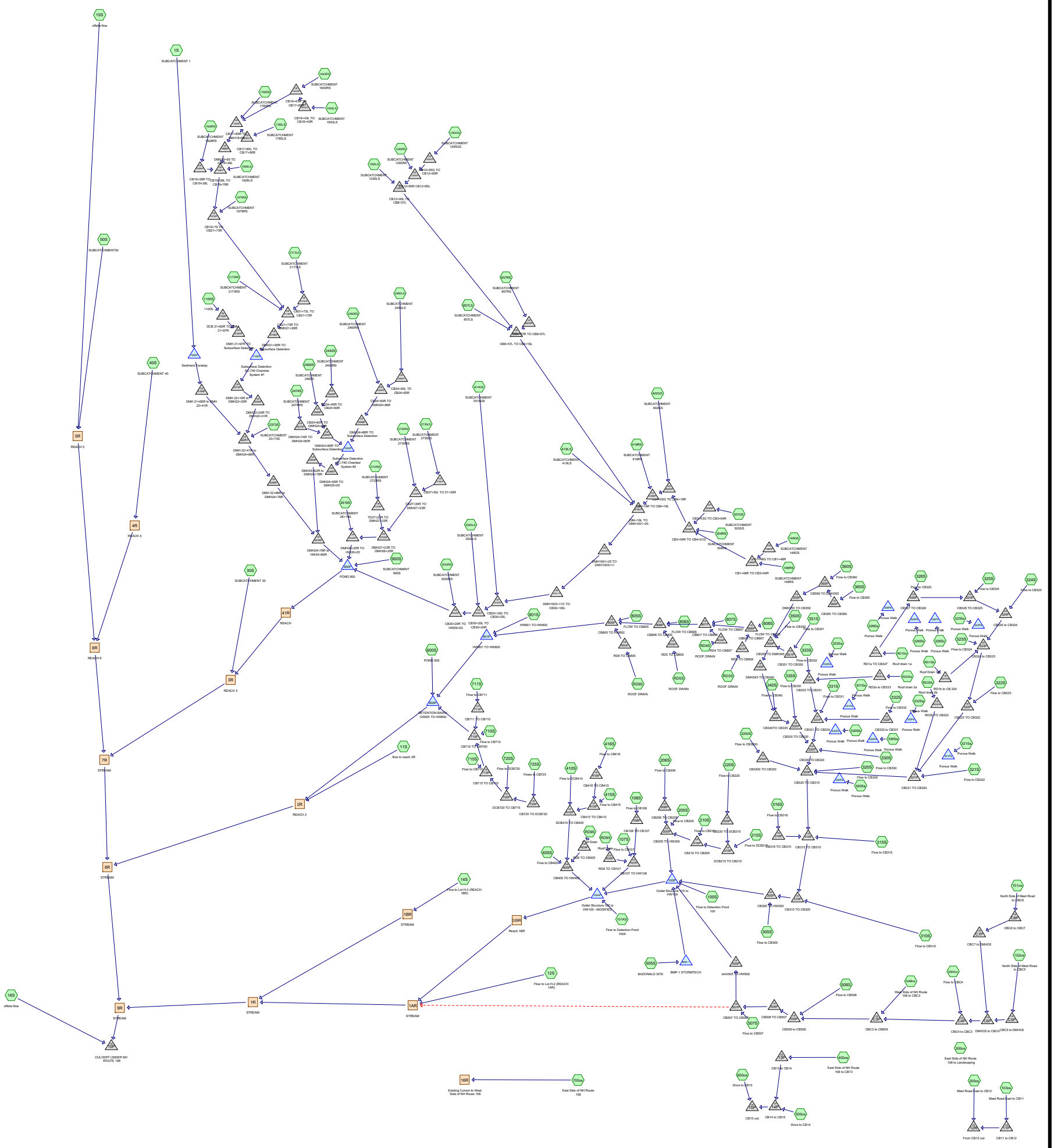
NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

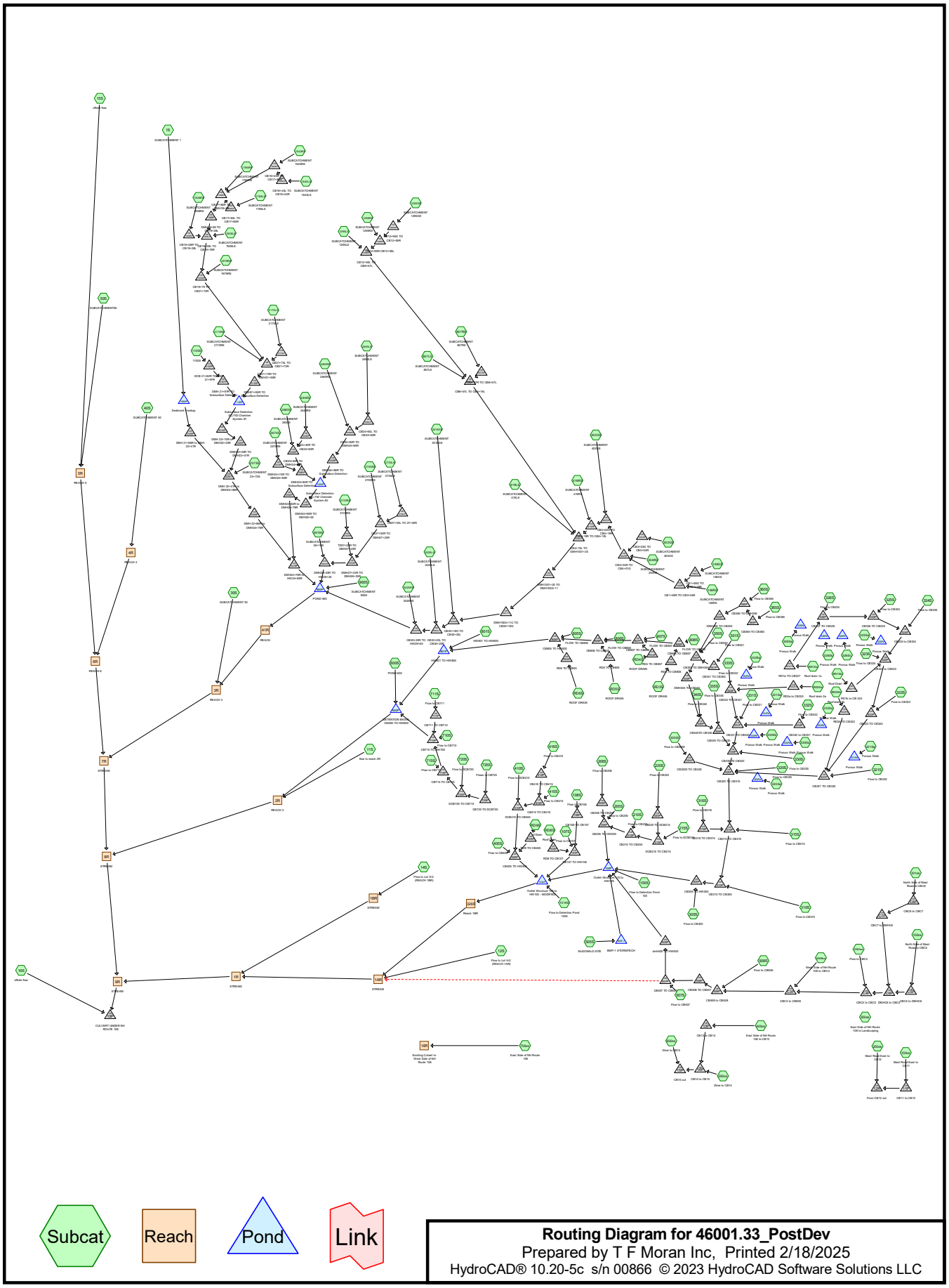
OWNER OF RECORD	*AND*	*APPLICANT/DEVELOPER*
n/f VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE BEDFORD, NH 03110		BOHLER ENGINEERING, LLC 352 TURNPIKE RD, 3RD FLOOR SOUTHBOROUGH, MA 01772

SCALE: 1"=100' **DECEMBER 5, 2024**

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PROJ. #	46001.33	DR	JMR	FB	–	SHEET 4 OF 4
		CK	RED	CADFILE	46001.33 DRAINAGE	


1SS
offsite flow
1S
SUBCATCHMENT 1
50S
SUBCATCHMENT50
5R
REACH 5
40S
SUBCATCHMENT 40
4R
REACH 4
6R
REACH 6
30S
SUBCATCHMENT 30
41R
REACH
3R
REACH 3
7R
STREAM
2R
REACH 2
8R
STREAM
1R
STREAM
1AR
STREAM
1BR
STREAM
9R
STREAM
16S
offsite flow
16R
CULVERT UNDER NH ROUTE 108
Existing Culvert to West Side of NH Route 108
East Side of NH Route 108
12S
Flow to Lot H-2 (REACH 1AR)
14S
Flow to Lot H-2 (REACH 1BR)
Reach 1BR
Sediment Forebay
Subsurface Detention 57-740 Chamber System #1
Subsurface Detention 57-740 Chamber System #2
POND 900
RETENTION BASIN OS605 TO HW600
Outlet Structure 100 to HW100 - MODIFIED
Outlet Structure 100 to HW106
Flow to Detention Pond 100A
Flow to Detention Pond 100
McDONALD SITE
BMP-1 STORMTECH
dmh500 to HW500
CB507 TO CB508
CB508 TO CB507
CB509 TO CB508
CB3 to CB509
CBC4 to CBC3
DMH05 to CBC4
CBC5 to DMH05
CBC6 to CBC7
CBC7 to DMH05
CB15 out
CB14 to CB15
CB13 to CB14
From CB12 out
CB11 to CB12
East Side of NH Route 108 to CB13
West Side of NH Route 108 to CBC3
East Side of NH Route 108 to Landscaping
Meet Road East to CB12
Meet Road East to CB11
North Side of Meet Road to CBC5
Drive to CB15
Drive to CB14
Flow to CB508
Flow to CB507
Flow to CB305
Flow to CB310
Flow to CB315
Flow to CB320
Flow to CB330
Flow to CB332
Flow to CB333
Flow to CB324
Flow to CB325
Flow to CB323
Flow to CB322
Flow to CB360
Flow to CB365
Flow to CB351
Flow to CB335
Flow to CB340
Flow to CB711
Flow to CB710
Flow to CB720
Flow to CB725
Flow to CB415
Flow to CB410
Flow to CB108
Flow to CB206
Flow to CB205
Flow to CB220
Flow to CB316
Flow to DCB215
Flow to DCB210
Flow to DCB205
Flow to DCB220
Flow to DCB316
Flow to DCB320
Flow to DCB330
Flow to DCB332
Flow to DCB333
Flow to DCB324
Flow to DCB325
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Flow to DCB322
Flow to DCB360
Flow to DCB365
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Flow to DCB335
Flow to DCB340
Flow to DCB711
Flow to DCB710
Flow to DCB720
Flow to DCB725
Flow to DCB415
Flow to DCB410
Flow to DCB108
Flow to DCB206
Flow to DCB205
Flow to DCB220
Flow to DCB316
Flow to DCB320
Flow to DCB330
Flow to DCB332
Flow to DCB333
Flow to DCB324
Flow to DCB325
Flow to DCB323
Flow to DCB322
Flow to DCB360
Flow to DCB365
Flow to DCB351
Flow to DCB335
Flow to DCB340
SUBCATCHMENT 1643RS
SUBCATCHMENT 1643LS
SUBCATCHMENT 1708RS
SUBCATCHMENT 1708LS
SUBCATCHMENT 1928RS
SUBCATCHMENT 1928LS
SUBCATCHMENT 1978RS
SUBCATCHMENT 1978LS
SUBCATCHMENT 2173RS
SUBCATCHMENT 2173LS
SUBCATCHMENT 2273RS
SUBCATCHMENT 2273LS
SUBCATCHMENT 2473RS
SUBCATCHMENT 2473LS
SUBCATCHMENT 2473RS
SUBCATCHMENT 2473LS
SUBCATCHMENT 2573RS
SUBCATCHMENT 2573LS
SUBCATCHMENT 2573RS
SUBCATCHMENT 2573LS
SUBCATCHMENT 2773RS
SUBCATCHMENT 2773LS
SUBCATCHMENT 3073RS
SUBCATCHMENT 3073LS
SUBCATCHMENT 3273RS
SUBCATCHMENT 3273LS
SUBCATCHMENT 3473RS
SUBCATCHMENT 3473LS
SUBCATCHMENT 3673RS
SUBCATCHMENT 3673LS
SUBCATCHMENT 3873RS
SUBCATCHMENT 3873LS
SUBCATCHMENT 4073RS
SUBCATCHMENT 4073LS
SUBCATCHMENT 4273RS
SUBCATCHMENT 4273LS
SUBCATCHMENT 4473RS
SUBCATCHMENT 4473LS
SUBCATCHMENT 4673RS
SUBCATCHMENT 4673LS
SUBCATCHMENT 4873RS
SUBCATCHMENT 4873LS
SUBCATCHMENT



Routing Diagram for 46001.33_PostDev

Prepared by T F Moran Inc, Printed 2/18/2025

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
29.094	39	>75% Grass cover, Good, HSG A (1S, 11S, 12S, 14S, 15S, 16S, 30S, 40S, 101os, 102os, 148GS, 148RS, 215S, 220S, 300os, 303GS, 304RS, 315S, 316S, 320S, 321S, 322S, 323S, 326S, 326Sa, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333S, 333Sa, 335S, 340S, 350S, 351S, 402GS, 419LS, 419RS, 508Aos, 508Bos, 508S, 600S, 801S, 805S, 806S, 807S, 808S, 857LS, 857RS, 900S, 1100S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 1979RS, 2173LS, 2173RS, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, 3200S)
1.833	61	>75% Grass cover, Good, HSG B (12S, 14S, 30S, 40S, 100S, 210S, 215S, 220S, 305S, 310S, 316S, 505S)
4.698	74	>75% Grass cover, Good, HSG C (11S, 12S, 16S, 100S, 108S, 205S, 206S, 210S, 215S, 220S, 310S, 400os, 410S, 416S, 505S, 507S, 508S, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 3018GS, 3020LS, 3020RS)
1.173	80	>75% Grass cover, Good, HSG D (12S, 16S, 100S, 101AS, 107S, 108S, 205S, 206S, 405S, 410S, 415S, 416S, 715S, 720S, 725S)
2.336	35	Brush, Fair, HSG A (16S, 40S, 50S, 1295GS)
0.630	56	Brush, Fair, HSG B (30S, 40S)
1.521	70	Brush, Fair, HSG C (16S, 30S, 40S)
0.933	77	Brush, Fair, HSG D (12S, 16S)
0.170	76	Gravel roads, HSG A (40S, 50S)
0.068	85	Gravel roads, HSG B (30S, 40S)
0.036	89	Gravel roads, HSG C (30S, 801S)
0.009	91	Gravel roads, HSG D (101AS)
0.020	76	Gravel, HSG A (419LS, 600S, 1295GS, 3020RS)
0.044	85	Gravel, HSG B (100S)
0.026	89	Gravel, HSG C (11S, 100S, 600S)
0.016	91	Gravel, HSG D (12S, 108S)
6.725	98	Impervious (12S, 50S, 101AS, 107S, 148GS, 215S, 303GS, 305S, 402GS, 405S, 419RS, 507S, 600S, 857LS, 857RS, 900S, 1295GS, 1295LS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 2173LS, 2173RS, 2440S, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, RD4S, RD5S, RD6S, RD8S, RD9S)
0.702	79	Pasture/grassland/range, Fair, HSG C (16S)
1.712	39	Pasture/grassland/range, Good, HSG A (310S)
0.076	61	Pasture/grassland/range, Good, HSG B (310S)
1.478	74	Pasture/grassland/range, Good, HSG C (12S, 14S)
2.928	80	Pasture/grassland/range, Good, HSG D (12S, 14S, 16S)
0.577	98	Paved parking (505S)
11.731	98	Paved parking & roofs (15S, 16S, 108S, 148RS, 205S, 206S, 210S, 220S, 300os, 303GS, 304RS, 310S, 320S, 400os, 410S, 415S, 416S, 508Bos, 508S, 710S, 711S, 720S, 725S, 801S, 805S, 806S, 807S, 1295RS, 2460LS, 3020LS, 3020RS, RD1Sa, RD1Sb, RD2Sa, RD2Sb, RD3S)

Area Listing (all nodes) (continued)

Area (acres)	CN	Description (subcatchment-numbers)
0.086	98	Paved parking - Porous Pavement (505S)
0.594	98	Paved parking, HSG A (1S, 320S, 330S, 1100S, 1979RS)
2.429	98	Paved roads w/curbs & sewers (101os, 102os, 103os, 200os, 316S, 325S, 335S, 340S, 350S, 351S, 360S, 365S, 419LS, 500os, 508Aos, 600os, 700os, 715S)
1.010	98	Paved roads w/curbs & sewers, HSG A (315S, 320S, 320Sa, 321Sa, 323Sa, 324S, 326S, 326Sa, 326Sb, 326Sc, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333Sa)
0.085	98	Roofs (505S)
0.718	98	Roofs, HSG A (320Sa, 2373S, 2619S)
39.264	30	Woods, Good, HSG A (1S, 11S, 15S, 16S, 40S, 50S, 101os, 148GS, 303GS, 310S, 315S, 402GS, 508Aos, 508Bos, 600S, 900S, 1295GS, 3018GS)
0.029	55	Woods, Good, HSG B (30S, 310S)
8.357	70	Woods, Good, HSG C (11S, 12S, 14S, 16S, 30S, 40S)
0.788	77	Woods, Good, HSG D (12S, 14S, 16S)
121.896	**55**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
74.920	HSG A	1S, 11S, 12S, 14S, 15S, 16S, 30S, 40S, 50S, 101os, 102os, 148GS, 148RS, 215S, 220S, 300os, 303GS, 304RS, 310S, 315S, 316S, 320S, 320Sa, 321S, 321Sa, 322S, 323S, 323Sa, 324S, 326S, 326Sa, 326Sb, 326Sc, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333S, 333Sa, 335S, 340S, 350S, 351S, 402GS, 419LS, 419RS, 508Aos, 508Bos, 508S, 600S, 801S, 805S, 806S, 807S, 808S, 857LS, 857RS, 900S, 1100S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 1979RS, 2173LS, 2173RS, 2373S, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2619S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, 3200S
2.680	HSG B	12S, 14S, 30S, 40S, 100S, 210S, 215S, 220S, 305S, 310S, 316S, 505S
16.818	HSG C	11S, 12S, 14S, 16S, 30S, 40S, 100S, 108S, 205S, 206S, 210S, 215S, 220S, 310S, 400os, 410S, 416S, 505S, 507S, 508S, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 3018GS, 3020LS, 3020RS
5.846	HSG D	12S, 14S, 16S, 100S, 101AS, 107S, 108S, 205S, 206S, 405S, 410S, 415S, 416S, 715S, 720S, 725S
21.633	Other	12S, 15S, 16S, 50S, 101AS, 101os, 102os, 103os, 107S, 108S, 148GS, 148RS, 200os, 205S, 206S, 210S, 215S, 220S, 300os, 303GS, 304RS, 305S, 310S, 316S, 320S, 325S, 335S, 340S, 350S, 351S, 360S, 365S, 400os, 402GS, 405S, 410S, 415S, 416S, 419LS, 419RS, 500os, 505S, 507S, 508Aos, 508Bos, 508S, 600os, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 806S, 807S, 857LS, 857RS, 900S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 2173LS, 2173RS, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, RD1Sa, RD1Sb, RD2Sa, RD2Sb, RD3S, RD4S, RD5S, RD6S, RD8S, RD9S
121.896		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.06"
Flow Length=928' Tc=34.5 min CN=47 Runoff=0.02 cfs 0.014 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.15 cfs 0.016 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=1.29"
Flow Length=645' Tc=9.0 min CN=79 Runoff=5.42 cfs 0.435 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=416' Tc=9.0 min CN=72 Runoff=1.52 cfs 0.131 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.00"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.08"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=0.50 cfs 0.315 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=0.36 cfs 0.053 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.03 cfs 0.019 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.00"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.00 cfs 0.000 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=0.79"
Tc=5.0 min CN=70 Runoff=0.84 cfs 0.065 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.48 cfs 0.033 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=0.18"
Tc=5.0 min CN=53 Runoff=0.02 cfs 0.006 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.28 cfs 0.022 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.87 cfs 0.067 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=0.50 cfs 0.037 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.38 cfs 0.100 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.03"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.00 cfs 0.001 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.17 cfs 0.012 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.72 cfs 0.055 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=1.51 cfs 0.114 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.72 cfs 0.054 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=2.20"
Tc=5.0 min CN=91 Runoff=0.47 cfs 0.033 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=93 Runoff=1.83 cfs 0.130 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=1.05 cfs 0.077 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=0.15 cfs 0.010 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=1.56"
Tc=5.0 min CN=83 Runoff=0.46 cfs 0.031 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.09 cfs 0.007 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=2.29"
Tc=5.0 min CN=92 Runoff=0.50 cfs 0.035 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.06"
Flow Length=469' Tc=13.1 min CN=47 Runoff=0.03 cfs 0.018 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.00"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.25 cfs 0.018 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.22 cfs 0.017 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.03 cfs 0.003 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=1.00"
Tc=5.0 min CN=74 Runoff=0.90 cfs 0.066 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=0.57"
Tc=5.0 min CN=65 Runoff=0.02 cfs 0.002 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.00 cfs 0.000 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.00 cfs 0.000 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.22 cfs 0.016 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=63 Runoff=0.00 cfs 0.000 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=63 Runoff=0.00 cfs 0.000 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=78 Runoff=0.34 cfs 0.024 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=0.57"
Tc=5.0 min CN=65 Runoff=0.01 cfs 0.001 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=1.56"
Tc=5.0 min CN=83 Runoff=0.07 cfs 0.005 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.05 cfs 0.003 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=0.32"
Tc=5.0 min CN=58 Runoff=0.00 cfs 0.001 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.13 cfs 0.009 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=1.49"
Tc=5.0 min CN=82 Runoff=0.11 cfs 0.007 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=1.94"
Tc=5.0 min CN=88 Runoff=0.17 cfs 0.012 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.17 cfs 0.012 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=0.72 cfs 0.050 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.01"
Flow Length=919' Tc=16.0 min CN=42 Runoff=0.01 cfs 0.004 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.42 cfs 0.030 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=1.17 cfs 0.086 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.35 cfs 0.025 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.49 cfs 0.035 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=1.00"
Tc=5.0 min CN=74 Runoff=0.85 cfs 0.062 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=68 Runoff=0.45 cfs 0.036 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=2.20"
Tc=0.0 min CN=91 Runoff=2.96 cfs 0.176 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.32 cfs 0.026 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=0.29"
Tc=5.0 min CN=57 Runoff=0.12 cfs 0.022 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=0.53"
Tc=5.0 min CN=64 Runoff=0.17 cfs 0.016 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=0.46"
Tc=5.0 min CN=62 Runoff=0.49 cfs 0.051 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.087 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.31 cfs 0.022 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.30 cfs 0.022 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=2.11"
Tc=5.0 min CN=90 Runoff=0.19 cfs 0.013 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.21 cfs 0.088 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.88 cfs 0.136 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=67 Runoff=2.28 cfs 0.189 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=0.29 cfs 0.021 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=93 Runoff=0.25 cfs 0.017 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=1.63"
Tc=5.0 min CN=84 Runoff=0.25 cfs 0.017 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.51 cfs 0.036 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=0.14"
Tc=5.0 min CN=51 Runoff=0.02 cfs 0.008 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.00"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=0.79"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.13 cfs 0.009 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=0.26"
Flow Length=466' Tc=10.6 min CN=56 Runoff=0.18 cfs 0.035 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=78 Runoff=0.27 cfs 0.019 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.23 cfs 0.018 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=0.39"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.01 cfs 0.001 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=0.84"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.16 cfs 0.013 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=0.26"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.02 cfs 0.005 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=0.75"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.11 cfs 0.009 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=0.53"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.08 cfs 0.008 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=0.75"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.12 cfs 0.009 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=0.66"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.03 cfs 0.003 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=0.49"
Flow Length=205' Tc=6.3 min CN=63 Runoff=0.17 cfs 0.018 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=0.89"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.18 cfs 0.015 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.13 cfs 0.087 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=0.53"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.02 cfs 0.001 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=0.66"
Flow Length=378' Tc=10.9 min CN=67 Runoff=0.33 cfs 0.033 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=0.75"
Flow Length=261' Tc=3.4 min CN=69 Runoff=0.27 cfs 0.020 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=1.56"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.33 cfs 0.020 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=0.53"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.05 cfs 0.004 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.13 cfs 0.087 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=1.05"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.13 cfs 0.009 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=0.70"
Flow Length=462' Tc=10.0 min CN=68 Runoff=0.33 cfs 0.032 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=0.79"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.25 cfs 0.018 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.04"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=0.03 cfs 0.019 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=0.79"
Flow Length=349' Tc=10.3 min CN=70 Runoff=0.70 cfs 0.065 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=1.23"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.32 cfs 0.024 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.029 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.31 cfs 0.024 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.30 cfs 0.023 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.32 cfs 0.102 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.35 cfs 0.104 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.70 cfs 0.054 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.11 cfs 0.009 af

Reach 1AR: STREAM Avg. Flow Depth=0.43' Max Vel=2.59 fps Inflow=5.81 cfs 1.839 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=5.61 cfs 1.839 af

Reach 1BR: STREAM Avg. Flow Depth=0.18' Max Vel=1.75 fps Inflow=1.52 cfs 0.131 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=1.44 cfs 0.131 af

Reach 1R: STREAM Avg. Flow Depth=0.57' Max Vel=2.20 fps Inflow=7.05 cfs 1.969 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=6.74 cfs 1.969 af

Reach 2R: REACH 2 Avg. Flow Depth=0.06' Max Vel=0.61 fps Inflow=0.18 cfs 0.437 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.15 cfs 0.435 af

Reach 3R: REACH 3 Avg. Flow Depth=0.08' Max Vel=0.79 fps Inflow=0.36 cfs 0.053 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=0.34 cfs 0.053 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.019 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.03 cfs 0.019 af

Reach 5R: REACH 5 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.00 cfs 0.000 af

Reach 6R: REACH 6 Avg. Flow Depth=0.03' Max Vel=0.23 fps Inflow=0.03 cfs 0.019 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.03 cfs 0.019 af

Reach 7R: STREAM Avg. Flow Depth=0.09' Max Vel=0.95 fps Inflow=0.34 cfs 0.071 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=0.34 cfs 0.071 af

Reach 8R: STREAM Avg. Flow Depth=0.10' Max Vel=1.01 fps Inflow=0.48 cfs 0.507 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=0.45 cfs 0.505 af

Reach 9R: STREAM Avg. Flow Depth=0.55' Max Vel=2.30 fps Inflow=6.76 cfs 2.474 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=6.75 cfs 2.473 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.35' Max Vel=4.53 fps Inflow=1.27 cfs 0.087 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=1.27 cfs 0.087 af

Reach 41R: REACH Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.00 cfs 0.000 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.16' Max Vel=1.15 fps Inflow=0.86 cfs 1.404 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=0.86 cfs 1.404 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.89' Inflow=6.75 cfs 2.789 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=6.75 cfs 2.789 af

Pond 11P: CB11 to CB12 Peak Elev=105.66' Inflow=0.87 cfs 0.067 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=0.87 cfs 0.067 af

Pond 12R: From CB12 out Peak Elev=105.43' Inflow=1.59 cfs 0.122 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=1.59 cfs 0.122 af

Pond 13P: CB13 to CB14 Peak Elev=107.07' Inflow=0.72 cfs 0.050 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.72 cfs 0.050 af

Pond 14P: CB14 to CB15 Peak Elev=106.08' Inflow=0.85 cfs 0.059 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=0.85 cfs 0.059 af

Pond 15P: CB15 out Peak Elev=104.97' Inflow=1.12 cfs 0.080 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.12 cfs 0.080 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.56' Storage=19,935 cf Inflow=5.85 cfs 1.430 af
Outflow=0.86 cfs 1.404 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=102.27' Storage=19,822 cf Inflow=12.61 cfs 1.063 af
Outflow=1.04 cfs 1.063 af

Pond 107P: CB107 TO HW106 Peak Elev=101.73' Inflow=2.05 cfs 0.150 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=2.05 cfs 0.150 af

Pond 108P: CB108 TO CB107 Peak Elev=102.21' Inflow=1.38 cfs 0.100 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=1.38 cfs 0.100 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.47' Inflow=0.00 cfs 0.001 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.00 cfs 0.001 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.46' Inflow=0.17 cfs 0.013 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.17 cfs 0.013 af

Pond 205P: CB205 TO HW200 Peak Elev=103.59' Inflow=5.59 cfs 0.407 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=5.59 cfs 0.407 af

Pond 206P: CB206 TO CB205 Peak Elev=104.12' Inflow=0.72 cfs 0.054 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=0.72 cfs 0.054 af

Pond 210P: CB210 TO CB205 Peak Elev=104.25' Inflow=3.35 cfs 0.240 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=3.35 cfs 0.240 af

Pond 215P: DCB215 TO CB210 Peak Elev=104.74' Inflow=2.88 cfs 0.207 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=2.88 cfs 0.207 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.10' Inflow=1.05 cfs 0.077 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=1.05 cfs 0.077 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.45' Inflow=0.46 cfs 0.031 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=0.46 cfs 0.031 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.05' Inflow=0.72 cfs 0.052 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=0.72 cfs 0.052 af

Pond 305P: CB305 TO HW300 Peak Elev=104.40' Inflow=5.13 cfs 0.396 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=5.13 cfs 0.396 af

Pond 310P: CB310 TO CB305 Peak Elev=104.72' Inflow=4.64 cfs 0.362 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=4.64 cfs 0.362 af

Pond 315P: CB315 TO CB310 Peak Elev=106.23' Inflow=4.64 cfs 0.344 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=4.64 cfs 0.344 af

Pond 316P: CB316 TO CB315 Peak Elev=106.24' Inflow=0.25 cfs 0.018 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.25 cfs 0.018 af

Pond 320P: CB320 TO CB315 Peak Elev=108.64' Inflow=4.39 cfs 0.326 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=4.39 cfs 0.326 af

Pond 320Pa: Porous Walk Peak Elev=111.86' Storage=1 cf Inflow=0.03 cfs 0.002 af
Outflow=0.03 cfs 0.002 af

Pond 321P: CB321 TO CB320 Peak Elev=113.00' Inflow=2.12 cfs 0.160 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=2.12 cfs 0.160 af

Pond 321Pa: Porous Walk Peak Elev=116.65' Storage=0 cf Inflow=0.03 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 322P: CB323 TO CB322 Peak Elev=118.63' Inflow=1.83 cfs 0.137 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=1.83 cfs 0.137 af

Pond 323P: CB324 to CB323 Peak Elev=121.82' Inflow=1.83 cfs 0.137 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=1.83 cfs 0.137 af

Pond 323Pa: Porous Walk Peak Elev=129.25' Storage=0 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 324P: CB325 to CB324 Peak Elev=122.39' Inflow=1.56 cfs 0.116 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=1.56 cfs 0.116 af

Pond 325P: CB326 TO CB325 Peak Elev=123.25' Inflow=1.40 cfs 0.104 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=1.40 cfs 0.104 af

Pond 326P: CB327 TO CB326 Peak Elev=124.42' Inflow=1.28 cfs 0.095 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=1.28 cfs 0.095 af

Pond 326Pa: Porous Walk Peak Elev=127.95' Storage=0 cf Inflow=0.02 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 326Pb: Porous Walk Peak Elev=129.05' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 326Pc: Porous Walk Peak Elev=129.65' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330P: CB330 T0 CB320 Peak Elev=109.51' Inflow=2.04 cfs 0.149 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=2.04 cfs 0.149 af

Pond 330Pa: Porous Walk Peak Elev=114.25' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330Pb: Porous Walk Peak Elev=112.65' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 331P: CB331 TO CB330 Peak Elev=110.49' Inflow=0.72 cfs 0.052 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=0.72 cfs 0.052 af

Pond 331Pa: Porous Walk Peak Elev=116.25' Storage=0 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 332P: CB332 to CB331 Peak Elev=111.09' Inflow=0.07 cfs 0.005 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.07 cfs 0.005 af

Pond 332Pa: Porous Walk Peak Elev=116.35' Storage=0 cf Inflow=0.05 cfs 0.003 af
Outflow=0.05 cfs 0.003 af

Pond 333P: CB333 TO CB331 Peak Elev=113.01' Inflow=0.31 cfs 0.024 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.31 cfs 0.024 af

Pond 333Pa: Porous Walk Peak Elev=128.65' Storage=0 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 335P: CB335 TO CB330 Peak Elev=110.37' Inflow=1.10 cfs 0.081 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=1.10 cfs 0.081 af

Pond 340P: CB340TO CB335 Peak Elev=111.93' Inflow=0.97 cfs 0.072 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=0.97 cfs 0.072 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.10' Inflow=0.87 cfs 0.064 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=0.87 cfs 0.064 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.10' Inflow=0.87 cfs 0.064 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=0.87 cfs 0.064 af

Pond 351P: CB351 TO CB350 Peak Elev=120.71' Inflow=0.17 cfs 0.012 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.17 cfs 0.012 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.18' Inflow=0.52 cfs 0.040 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=0.52 cfs 0.040 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.68' Inflow=0.52 cfs 0.040 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=0.52 cfs 0.040 af

Pond 365P: CB365 TO CB360 Peak Elev=132.92' Inflow=0.27 cfs 0.021 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.27 cfs 0.021 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=123.19' Inflow=0.72 cfs 0.056 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=0.72 cfs 0.056 af

Pond 405P: CB405 TO HW400 Peak Elev=102.11' Inflow=2.53 cfs 0.185 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=2.53 cfs 0.185 af

Pond 410P: DCB410 TO CB405 Peak Elev=102.90' Inflow=2.00 cfs 0.146 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=2.00 cfs 0.146 af

Pond 415P: CB415 TO CB410 Peak Elev=103.09' Inflow=0.83 cfs 0.060 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=0.83 cfs 0.060 af

Pond 416P: CB416 TO CB415 Peak Elev=103.28' Inflow=0.49 cfs 0.035 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=0.49 cfs 0.035 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=117.73' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=3.04 cfs 0.271 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.01' Inflow=1.17 cfs 0.092 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=1.17 cfs 0.092 af

Pond 505P: dmh505 TO HW500 Peak Elev=104.19' Inflow=1.10 cfs 0.111 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=1.10 cfs 0.111 af

Pond 507P: CB507 TO CB505 Peak Elev=105.23' Inflow=1.10 cfs 0.111 af
Primary=1.10 cfs 0.111 af Secondary=0.00 cfs 0.000 af Outflow=1.10 cfs 0.111 af

Pond 508P: CB508 TO CB507 Peak Elev=107.47' Inflow=0.87 cfs 0.092 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=0.87 cfs 0.092 af

Pond 509P: CB509 to CB508 Peak Elev=108.81' Inflow=0.87 cfs 0.092 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=0.87 cfs 0.092 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=98.58' Storage=44,079 cf Inflow=7.45 cfs 0.835 af
Outflow=0.14 cfs 0.421 af

Pond 710P: CB710 TO HW700 Peak Elev=100.76' Inflow=3.89 cfs 0.282 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=3.89 cfs 0.282 af

Pond 711P: CB711 TO CB710 Peak Elev=103.45' Inflow=0.30 cfs 0.022 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.30 cfs 0.022 af

Pond 715P: CB715 TO CB710 Peak Elev=101.23' Inflow=3.29 cfs 0.238 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=3.29 cfs 0.238 af

Pond 720P: DCB720 TO CB715 Peak Elev=101.69' Inflow=3.09 cfs 0.224 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=3.09 cfs 0.224 af

Pond 725P: CB725 TO DCB720 Peak Elev=102.15' Inflow=1.88 cfs 0.136 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=1.88 cfs 0.136 af

Pond 801P: HW801 TO HW800 Peak Elev=101.43' Storage=3,062 cf Inflow=6.43 cfs 0.507 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=3.72 cfs 0.502 af

Pond 805P: CB805 TO HW802 Peak Elev=102.17' Inflow=4.20 cfs 0.318 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=4.20 cfs 0.318 af

Pond 806P: CB806 TO CB805 Peak Elev=103.80' Inflow=3.21 cfs 0.243 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=3.21 cfs 0.243 af

Pond 807P: CB807 TO CB806 Peak Elev=105.85' Inflow=1.61 cfs 0.122 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=1.61 cfs 0.122 af

Pond 808P: CB808 TO CB807 Peak Elev=106.73' Inflow=1.32 cfs 0.102 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=1.32 cfs 0.102 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=133.20' Inflow=1.02 cfs 0.117 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=1.02 cfs 0.117 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=133.17' Inflow=0.02 cfs 0.008 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.02 cfs 0.008 af

Pond 900P: POND 900 Peak Elev=98.60' Storage=18,162 cf Inflow=6.72 cfs 0.627 af
Discarded=0.24 cfs 0.554 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.554 af

Pond 1000P: Sediment Forebay Peak Elev=111.50' Storage=6 cf Inflow=0.02 cfs 0.014 af
Outflow=0.02 cfs 0.014 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=117.31' Storage=1,137 cf Inflow=0.95 cfs 0.089 af
Discarded=0.13 cfs 0.089 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.089 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=109.81' Storage=994 cf Inflow=0.79 cfs 0.079 af
Discarded=0.13 cfs 0.079 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.079 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=137.12' Inflow=0.18 cfs 0.035 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=0.18 cfs 0.035 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=136.78' Inflow=0.52 cfs 0.073 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=0.52 cfs 0.073 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=136.98' Inflow=0.28 cfs 0.054 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=0.28 cfs 0.054 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.70' Inflow=0.01 cfs 0.001 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.01 cfs 0.001 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.33' Inflow=0.17 cfs 0.014 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.17 cfs 0.014 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.38' Inflow=0.02 cfs 0.005 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.02 cfs 0.005 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.29' Inflow=0.28 cfs 0.028 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=0.28 cfs 0.028 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.26' Inflow=0.28 cfs 0.028 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=0.28 cfs 0.028 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=123.63' Inflow=0.46 cfs 0.045 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=0.46 cfs 0.045 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.59' Inflow=0.12 cfs 0.009 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.12 cfs 0.009 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=121.95' Inflow=0.50 cfs 0.047 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=0.50 cfs 0.047 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=105.85' Inflow=0.02 cfs 0.014 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=0.02 cfs 0.014 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=118.70' Inflow=0.17 cfs 0.018 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=0.17 cfs 0.018 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=118.33' Inflow=0.85 cfs 0.080 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=0.85 cfs 0.080 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=117.31' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.13 cfs 0.009 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=117.31' Inflow=0.85 cfs 0.080 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=0.85 cfs 0.080 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=117.31' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.13 cfs 0.009 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=116.80' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=108.60' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=0.00 cfs 0.000 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=105.09' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=102.17' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=111.97' Inflow=0.02 cfs 0.001 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.02 cfs 0.001 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=113.69' Inflow=0.33 cfs 0.033 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.33 cfs 0.033 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=110.09' Inflow=0.35 cfs 0.022 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.35 cfs 0.022 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.43' Inflow=0.49 cfs 0.053 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=0.49 cfs 0.053 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=109.81' Inflow=0.49 cfs 0.053 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=0.49 cfs 0.053 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=110.01' Inflow=0.05 cfs 0.004 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.05 cfs 0.004 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=101.29' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=109.81' Inflow=0.38 cfs 0.026 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=0.38 cfs 0.026 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=109.40' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=103.60' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=0.00 cfs 0.000 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=101.52' Inflow=1.73 cfs 0.146 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=1.73 cfs 0.146 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=102.80' Inflow=0.63 cfs 0.059 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=0.63 cfs 0.059 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.77' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.13 cfs 0.009 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=109.70' Inflow=0.33 cfs 0.032 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.33 cfs 0.032 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.44' Inflow=0.51 cfs 0.050 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=0.51 cfs 0.050 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=103.21' Inflow=3.04 cfs 0.290 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=3.04 cfs 0.290 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=102.96' Inflow=3.57 cfs 0.355 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=3.57 cfs 0.355 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=102.54' Inflow=3.89 cfs 0.379 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=3.89 cfs 0.379 af

Pond 3200P: CB3200 TO CB320 Peak Elev=108.63' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=108.33' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=3.04 cfs 0.271 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=104.33' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=3.04 cfs 0.271 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.02' Storage=3,466 cf Inflow=2.96 cfs 0.176 af
Discarded=0.01 cfs 0.056 af Primary=0.95 cfs 0.083 af Outflow=0.96 cfs 0.139 af

Pond C3P: CBC3 to CB509 Peak Elev=114.23' Inflow=0.70 cfs 0.076 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=0.70 cfs 0.076 af

Pond C4P: CBC4 to CBC3 Peak Elev=116.46' Inflow=0.61 cfs 0.054 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=0.61 cfs 0.054 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.25' Inflow=0.28 cfs 0.022 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=0.28 cfs 0.022 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.14' Inflow=0.28 cfs 0.028 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=0.28 cfs 0.028 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.63' Inflow=0.02 cfs 0.006 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.02 cfs 0.006 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.07' Inflow=0.02 cfs 0.006 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.02 cfs 0.006 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.34' Inflow=0.38 cfs 0.029 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.38 cfs 0.029 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.79' Inflow=0.27 cfs 0.021 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.27 cfs 0.021 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.51' Inflow=0.31 cfs 0.024 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.31 cfs 0.024 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=113.50' Inflow=0.30 cfs 0.023 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.30 cfs 0.023 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.20' Inflow=1.32 cfs 0.102 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=1.32 cfs 0.102 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.10' Inflow=0.04 cfs 0.003 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.04 cfs 0.003 af

Pond RD5P: RD5 TO CB806 Peak Elev=106.71' Inflow=1.35 cfs 0.104 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=1.35 cfs 0.104 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.48' Inflow=0.70 cfs 0.054 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=0.70 cfs 0.054 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.05' Inflow=0.17 cfs 0.013 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.17 cfs 0.013 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.51' Inflow=0.11 cfs 0.009 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.11 cfs 0.009 af

Total Runoff Area = 121.896 ac Runoff Volume = 4.442 af Average Runoff Depth = 0.44"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 0.02 cfs @ 15.37 hrs, Volume= 0.014 af, Depth= 0.06"
Routed to Pond 1000P : Sediment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,841	30	Woods, Good, HSG A
82,224	39	>75% Grass cover, Good, HSG A
18,660	98	Paved parking, HSG A
116,725	47	Weighted Average
98,065		84.01% Pervious Area
18,660		15.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0312	0.09		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
11.3	54	0.0312	0.08		**Sheet Flow, Segment 2** Woods: Light underbrush n= 0.400 P2= 3.00"
0.0	20	0.3330	9.29		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.9	390	0.0500	3.35		**Shallow Concentrated Flow, Segment 4** Grassed Waterway Kv= 15.0 fps
2.1	240	0.0168	1.94		**Shallow Concentrated Flow, Segment 5** Grassed Waterway Kv= 15.0 fps
0.6	124	0.0500	3.35		**Shallow Concentrated Flow, Segment 6** Grassed Waterway Kv= 15.0 fps
34.5	928	Total			

Summary for Subcatchment 11S: flow to reach 2R

Runoff = 0.15 cfs @ 12.14 hrs, Volume= 0.016 af, Depth= 0.49"
Routed to Reach 2R : REACH 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,674	39	>75% Grass cover, Good, HSG A
2,356	30	Woods, Good, HSG A
7,731	70	Woods, Good, HSG C
5,518	74	>75% Grass cover, Good, HSG C
88	89	Gravel, HSG C
17,367	63	Weighted Average
17,367		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	4	0.0100	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.7	15	0.3333	0.35		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.2	9	0.0333	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
4.6	22	0.0500	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.5	30	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.0	80	Total			

Summary for Subcatchment 12S: Flow to Lot H-2 (REACH 1AR)

+3420 MPERV FROM MCDONALDS

Runoff = 5.42 cfs @ 12.13 hrs, Volume= 0.435 af, Depth= 1.29"
Routed to Reach 1AR : STREAM

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
661	70	Woods, Good, HSG C
26,644	74	Pasture/grassland/range, Good, HSG C
8,321	61	>75% Grass cover, Good, HSG B
17,674	98	Impervious
120	77	Brush, Fair, HSG D
8,038	77	Woods, Good, HSG D
87,918	80	Pasture/grassland/range, Good, HSG D
1,222	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
1,938	74	>75% Grass cover, Good, HSG C
21,858	74	Pasture/grassland/range, Good, HSG C
447	91	Gravel, HSG D
487	80	>75% Grass cover, Good, HSG D
176,084	79	Weighted Average
158,410		89.96% Pervious Area
17,674		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	3	0.0200	0.66		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	22	0.3333	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
2.8	25	0.0800	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
3.6	263	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	332	0.0250	3.59	334.67	**Parabolic Channel,** W=140.00' D=1.00' Area=93.3 sf Perim=140.0' n= 0.050
9.0	645	Total			

Summary for Subcatchment 14S: Flow to Lot H-2 (REACH 1BR)

Runoff = 1.52 cfs @ 12.13 hrs, Volume= 0.131 af, Depth= 0.89"
Routed to Reach 1BR : STREAM

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
410	39	>75% Grass cover, Good, HSG A
14,327	61	>75% Grass cover, Good, HSG B
15,863	74	Pasture/grassland/range, Good, HSG C
24,534	80	Pasture/grassland/range, Good, HSG D
17,955	70	Woods, Good, HSG C
3,459	77	Woods, Good, HSG D
76,548	72	Weighted Average
76,548		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0125	0.12		**Sheet Flow, FLOW THROUGH GRASS** Grass: Short n= 0.150 P2= 3.00"
0.1	6	0.0125	1.68		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.0	19	0.3333	8.66		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.1	20	0.1000	4.74		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.3	29	0.0690	1.84		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.7	152	0.0310	3.44	220.23	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
0.8	140	0.0236	3.00	192.15	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
9.0	416	Total			

Summary for Subcatchment 15S: offsite flow

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 5R : REACH 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
308,398	30	Woods, Good, HSG A
6,100	98	Paved parking & roofs
43,560	39	>75% Grass cover, Good, HSG A
358,058	32	Weighted Average
351,958		98.30% Pervious Area
6,100		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
7.6	38	0.0420	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
19.7	1,210	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.5	1,260	Total			

Summary for Subcatchment 16S: offsite flow

Runoff = 0.50 cfs @ 15.05 hrs, Volume= 0.315 af, Depth= 0.08"
Routed to Pond 10P : CULVERT UNDER NH ROUTE 108

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,858	30	Woods, Good, HSG A
13,459	35	Brush, Fair, HSG A
25,519	70	Woods, Good, HSG C
28,002	70	Brush, Fair, HSG C
40,537	77	Brush, Fair, HSG D
15,070	80	Pasture/grassland/range, Good, HSG D
12,170	77	Woods, Good, HSG D
4,441	98	Paved parking & roofs
32,048	70	Woods, Good, HSG C
30,577	79	Pasture/grassland/range, Fair, HSG C
5,334	98	Paved parking & roofs
16,304	80	>75% Grass cover, Good, HSG D
10,644	77	Woods, Good, HSG D
9,584	98	Paved parking & roofs
58,128	98	Paved parking & roofs
65,340	74	>75% Grass cover, Good, HSG C
260,648	70	Woods, Good, HSG C
999,761	30	Woods, Good, HSG A
326,700	39	>75% Grass cover, Good, HSG A
88,350	98	Paved parking & roofs
2,052,474	48	Weighted Average
1,886,637		91.92% Pervious Area
165,837		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.9	100	0.0150	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
7.6	370	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	136	0.0126	6.06	262.50	**Parabolic Channel,** W=50.00' D=1.30' Area=43.3 sf Perim=50.1' n= 0.025
0.3	194	0.0284	9.61	153.83	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.030
0.9	512	0.0258	9.08	163.39	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
0.2	100	0.0190	7.79	140.22	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
34.3	1,412	Total			

Summary for Subcatchment 30S: SUBCATCHMENT 30

Runoff = 0.36 cfs @ 12.40 hrs, Volume= 0.053 af, Depth= 0.57"
Routed to Reach 3R : REACH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,130	55	Woods, Good, HSG B
9,811	61	>75% Grass cover, Good, HSG B
1,630	85	Gravel roads, HSG B
11,050	56	Brush, Fair, HSG B
1,080	89	Gravel roads, HSG C
22,291	70	Brush, Fair, HSG C
991	70	Woods, Good, HSG C
215	39	>75% Grass cover, Good, HSG A
48,198	65	Weighted Average
48,198		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	100	0.0200	0.08		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
1.3	54	0.0200	0.71		**Shallow Concentrated Flow, Segment 2** Woodland Kv= 5.0 fps
23.5	154	Total			

Summary for Subcatchment 40S: SUBCATCHMENT 40

Runoff = 0.03 cfs @ 15.06 hrs, Volume= 0.019 af, Depth= 0.06"
Routed to Reach 4R : REACH 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,496	70	Woods, Good, HSG C
15,979	70	Brush, Fair, HSG C
16,386	56	Brush, Fair, HSG B
1,188	61	>75% Grass cover, Good, HSG B
1,320	85	Gravel roads, HSG B
30,854	30	Woods, Good, HSG A
5,490	76	Gravel roads, HSG A
9,949	39	>75% Grass cover, Good, HSG A
52,548	35	Brush, Fair, HSG A
152,210	47	Weighted Average
152,210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0560	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
6.1	402	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
14.5	452	Total			

Summary for Subcatchment 50S: SUBCATCHMENT50

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 5R : REACH 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
88,032	30	Woods, Good, HSG A
5,456	98	Impervious
1,920	76	Gravel roads, HSG A
30,501	35	Brush, Fair, HSG A
125,909	35	Weighted Average
120,453		95.67% Pervious Area
5,456		4.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0500	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
9.3	610	0.0479	1.09		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.8	987	Total			

Summary for Subcatchment 100S: Flow to Detention Pond 100

Runoff = 0.84 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 0.79"
Routed to Pond 100P : Outlet Structure 110 to HW109

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
14,772	74	>75% Grass cover, Good, HSG C
17,373	61	>75% Grass cover, Good, HSG B
416	74	>75% Grass cover, Good, HSG C
6,983	80	>75% Grass cover, Good, HSG D
119	89	Gravel, HSG C
1,899	85	Gravel, HSG B
1,170	80	>75% Grass cover, Good, HSG D
42,732	70	Weighted Average
42,732		100.00% Pervious Area

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

Summary for Subcatchment 101AS: Flow to Detention Pond 100A

Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 1.42"
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
385	91	Gravel roads, HSG D
125	98	Impervious
11,642	80	>75% Grass cover, Good, HSG D
12,152	81	Weighted Average
12,027		98.97% Pervious Area
125		1.03% Impervious Area

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

Summary for Subcatchment 101os: North Side of Mast Road to CBC8

Runoff = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Depth= 0.18"
Routed to Pond C8P : CBC8 to CBC7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,731	98	Paved roads w/curbs & sewers
3,000	30	Woods, Good, HSG A
9,673	39	>75% Grass cover, Good, HSG A
17,404	53	Weighted Average
12,673		72.82% Pervious Area
4,731		27.18% Impervious Area

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

Summary for Subcatchment 102os: North Side of Mast Road to CBC5

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af, Depth= 0.75"
Routed to Pond C5P : CBC5 to DMHC6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
8,084	98	Paved roads w/curbs & sewers
7,577	39	>75% Grass cover, Good, HSG A
15,661	69	Weighted Average
7,577		48.38% Pervious Area
8,084		51.62% Impervious Area

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

Summary for Subcatchment 103os: Mast Road East to CB11

Runoff = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af, Depth= 2.91"
Routed to Pond 11P : CB11 to CB12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
12,002	98	Paved roads w/curbs & sewers
12,002		100.00% Impervious Area

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

Summary for Subcatchment 107S: Flow to CB107

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.037 af, Depth= 2.69"
Routed to Pond 107P : CB107 TO HW106

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
962	80	>75% Grass cover, Good, HSG D
6,198	98	Impervious
7,160	96	Weighted Average
962		13.44% Pervious Area
6,198		86.56% Impervious Area

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

Summary for Subcatchment 108S: Flow to CB108

Runoff = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af, Depth= 2.59"
Routed to Pond 108P : CB108 TO CB107

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,335	80	>75% Grass cover, Good, HSG D
594	74	>75% Grass cover, Good, HSG C
17,088	98	Paved parking & roofs
237	91	Gravel, HSG D
20,254	95	Weighted Average
3,166		15.63% Pervious Area
17,088		84.37% Impervious Area

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

Summary for Subcatchment 148GS: SUBCATCHMENT 148GS

Runoff = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af, Depth= 0.03"
Routed to Pond 148GP : CB1+48G TO CB1+48R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
11,945	30	Woods, Good, HSG A
8,563	39	>75% Grass cover, Good, HSG A
4,000	98	Impervious
24,508	44	Weighted Average
20,508		83.68% Pervious Area
4,000		16.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
4.2	25	0.0800	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
1.7	128	0.0664	1.29		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.3	178	Total			

Summary for Subcatchment 148RS: SUBCATCHMENT 148RS

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 1.42"
Routed to Pond 148RP : CB1+48R TO CB3+04R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
581	39	>75% Grass cover, Good, HSG A
3,056	98	Paved parking & roofs
679	39	>75% Grass cover, Good, HSG A
4,316	81	Weighted Average
1,260		29.19% Pervious Area
3,056		70.81% Impervious Area

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

Summary for Subcatchment 200os: Mast Road East to CB12

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.055 af, Depth= 2.91"
Routed to Pond 12R : From CB12 out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,931	98	Paved roads w/curbs & sewers
9,931		100.00% Impervious Area

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

Summary for Subcatchment 205S: Flow to CB205

Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.114 af, Depth= 2.80"
Routed to Pond 205P : CB205 TO HW200

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
140	74	>75% Grass cover, Good, HSG C
687	74	>75% Grass cover, Good, HSG C
427	80	>75% Grass cover, Good, HSG D
19,983	98	Paved parking & roofs
21,237	97	Weighted Average
1,254		5.90% Pervious Area
19,983		94.10% Impervious Area

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

Summary for Subcatchment 206S: Flow to CB206

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 2.80"
Routed to Pond 206P : CB206 TO CB205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
368	74	>75% Grass cover, Good, HSG C
9,675	98	Paved parking & roofs
52	80	>75% Grass cover, Good, HSG D
10,095	97	Weighted Average
420		4.16% Pervious Area
9,675		95.84% Impervious Area

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

Summary for Subcatchment 210S: Flow to CB210

Runoff = 0.47 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 2.20"
Routed to Pond 210P : CB210 TO CB205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,010	74	>75% Grass cover, Good, HSG C
55	74	>75% Grass cover, Good, HSG C
865	61	>75% Grass cover, Good, HSG B
5,802	98	Paved parking & roofs
7,732	91	Weighted Average
1,930		24.96% Pervious Area
5,802		75.04% Impervious Area

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

Summary for Subcatchment 215S: Flow to DCB215

Runoff = 1.83 cfs @ 12.07 hrs, Volume= 0.130 af, Depth= 2.39"
Routed to Pond 215P : DCB215 TO CB210

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
672	39	>75% Grass cover, Good, HSG A
2,927	61	>75% Grass cover, Good, HSG B
195	74	>75% Grass cover, Good, HSG C
24,605	98	Impervious
28,399	93	Weighted Average
3,794		13.36% Pervious Area
24,605		86.64% Impervious Area

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

Summary for Subcatchment 220S: Flow to CB220

Runoff = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af, Depth= 2.69"
Routed to Pond 220P : CB220 TO DCB215

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
216	39	>75% Grass cover, Good, HSG A
303	74	>75% Grass cover, Good, HSG C
14,293	98	Paved parking & roofs
212	61	>75% Grass cover, Good, HSG B
15,024	96	Weighted Average
731		4.87% Pervious Area
14,293		95.13% Impervious Area

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

Summary for Subcatchment 300os: East Side of NH Route 108 to Landscaping

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
537	39	>75% Grass cover, Good, HSG A
2,396	98	Paved parking & roofs
2,933	87	Weighted Average
537		18.31% Pervious Area
2,396		81.69% Impervious Area

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

Summary for Subcatchment 303GS: SUBCATCHMENT 303GS

Runoff = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 1.56"
Routed to Pond 303GP : CB3+03G TO CB3+04R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,863	39	>75% Grass cover, Good, HSG A
757	30	Woods, Good, HSG A
5,385	98	Paved parking & roofs
2,540	98	Impervious
10,545	83	Weighted Average
2,620		24.85% Pervious Area
7,925		75.15% Impervious Area

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

Summary for Subcatchment 304RS: SUBCATCHMENT 304RS

Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 0.75"
Routed to Pond 304RP : CB3+04R TO CB4+01G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,436	39	>75% Grass cover, Good, HSG A
2,667	98	Paved parking & roofs
1,093	39	>75% Grass cover, Good, HSG A
5,196	69	Weighted Average
2,529		48.67% Pervious Area
2,667		51.33% Impervious Area

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

Summary for Subcatchment 305S: Flow to CB305

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 2.29"
Routed to Pond 305P : CB305 TO HW300

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,267	61	>75% Grass cover, Good, HSG B
6,661	98	Impervious
7,928	92	Weighted Average
1,267		15.98% Pervious Area
6,661		84.02% Impervious Area

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

Summary for Subcatchment 310S: Flow to CB310

CONVERTED 2,000 SF OF B GRASS TO PAVED TO ACCOUNT FOR MECDONALD'S WIDENING OF GRAPEVINE DRIVE

Runoff = 0.03 cfs @ 15.03 hrs, Volume= 0.018 af, Depth= 0.06"
Routed to Pond 310P : CB310 TO CB305

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
74,593	39	Pasture/grassland/range, Good, HSG A
32,172	30	Woods, Good, HSG A
16,280	61	>75% Grass cover, Good, HSG B
1,363	74	>75% Grass cover, Good, HSG C
17,590	98	Paved parking & roofs
150	55	Woods, Good, HSG B
3,325	61	Pasture/grassland/range, Good, HSG B
145,473	47	Weighted Average
127,883		87.91% Pervious Area
17,590		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0600	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
2.0	127	0.0470	1.08		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
2.9	265	0.0490	1.55		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.0	22	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
0.0	5	0.0150	2.49		**Shallow Concentrated Flow, FLOW OVER PAVEMENT** Paved Kv= 20.3 fps
13.1	469	Total			

Summary for Subcatchment 315S: Flow to CB315

Runoff = 0.00 cfs @ 24.05 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 315P : CB315 TO CB310

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,071	98	Paved roads w/curbs & sewers, HSG A
31	39	>75% Grass cover, Good, HSG A
11,960	30	Woods, Good, HSG A
1,455	39	>75% Grass cover, Good, HSG A
10,842	39	>75% Grass cover, Good, HSG A
4,446	98	Paved roads w/curbs & sewers, HSG A
108	98	Paved roads w/curbs & sewers, HSG A
35,478	39	>75% Grass cover, Good, HSG A
4,012	39	>75% Grass cover, Good, HSG A
36,179	30	Woods, Good, HSG A
1,259	30	Woods, Good, HSG A
512	30	Woods, Good, HSG A
690	39	>75% Grass cover, Good, HSG A
1,914	39	>75% Grass cover, Good, HSG A
2,294	98	Paved roads w/curbs & sewers, HSG A
3,240	39	>75% Grass cover, Good, HSG A
314	39	>75% Grass cover, Good, HSG A
520	39	>75% Grass cover, Good, HSG A
116,325	39	Weighted Average
108,406		93.19% Pervious Area
7,919		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.01		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
4.7	25	0.0600	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
2.6	198	0.0660	1.28		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
1.3	143	0.0660	1.80		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.0	19	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
0.9	127	0.0150	2.49		**Shallow Concentrated Flow, FLOW OVER PAVEMENT** Paved Kv= 20.3 fps
9.9	537	Total			

Summary for Subcatchment 316S: Flow to CB316

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.49"
Routed to Pond 316P : CB316 TO CB315

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
47	39	>75% Grass cover, Good, HSG A
3,346	98	Paved roads w/curbs & sewers
383	61	>75% Grass cover, Good, HSG B
3,776	94	Weighted Average
430		11.39% Pervious Area
3,346		88.61% Impervious Area

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

Summary for Subcatchment 320S: Flow to CB320

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 2.80"
Routed to Pond 320P : CB320 TO CB315

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
64	39	>75% Grass cover, Good, HSG A
2,137	98	Paved parking & roofs
365	98	Paved roads w/curbs & sewers, HSG A
35	98	Paved roads w/curbs & sewers, HSG A
526	98	Paved parking, HSG A
3,127	97	Weighted Average
64		2.05% Pervious Area
3,063		97.95% Impervious Area

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

Summary for Subcatchment 320Sa: Porous Walk

Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.002 af, Depth= 2.91"
Routed to Pond 320Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
25	98	Roofs, HSG A
379	98	Paved roads w/curbs & sewers, HSG A
404	98	Weighted Average
404		100.00% Impervious Area

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

Summary for Subcatchment 321S: Flow to CB322

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 321P : CB321 TO CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,903	39	>75% Grass cover, Good, HSG A
1,903		100.00% Pervious Area

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

Summary for Subcatchment 321Sa: Porous Walk

Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond 321Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
456	98	Paved roads w/curbs & sewers, HSG A
456		100.00% Impervious Area

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

Summary for Subcatchment 322S: Flow to CB323

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 322P : CB323 TO CB322

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,155	39	>75% Grass cover, Good, HSG A
98	39	>75% Grass cover, Good, HSG A
4,253	39	Weighted Average
4,253		100.00% Pervious Area

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

Summary for Subcatchment 323S: Flow to CB324

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 323P : CB324 to CB323

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,844	39	>75% Grass cover, Good, HSG A
1,844		100.00% Pervious Area

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

Summary for Subcatchment 323Sa: Porous Walk

Runoff = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond 323Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
498	98	Paved roads w/curbs & sewers, HSG A
498		100.00% Impervious Area

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

Summary for Subcatchment 324S: Flow to CB325

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 2.91"
Routed to Pond 324P : CB325 to CB324

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
815	98	Paved roads w/curbs & sewers, HSG A
323	98	Paved roads w/curbs & sewers, HSG A
1,075	98	Paved roads w/curbs & sewers, HSG A
2,213	98	Weighted Average
2,213		100.00% Impervious Area

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

Summary for Subcatchment 325S: Flow to CB324

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 2.91"
Routed to Pond 325P : CB326 TO CB325

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,665	98	Paved roads w/curbs & sewers
1,665		100.00% Impervious Area

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

Summary for Subcatchment 326S: Flow to CB325

Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.066 af, Depth= 1.00"
Routed to Pond 326P : CB327 TO CB326

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,205	98	Paved roads w/curbs & sewers, HSG A
2,134	39	>75% Grass cover, Good, HSG A
10,791	39	>75% Grass cover, Good, HSG A
2,364	98	Paved roads w/curbs & sewers, HSG A
126	39	>75% Grass cover, Good, HSG A
126	39	>75% Grass cover, Good, HSG A
98	39	>75% Grass cover, Good, HSG A
309	39	>75% Grass cover, Good, HSG A
12,068	98	Paved roads w/curbs & sewers, HSG A
87	39	>75% Grass cover, Good, HSG A
34,308	74	Weighted Average
13,671		39.85% Pervious Area
20,637		60.15% Impervious Area

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

Summary for Subcatchment 326Sa: Porous Walk

Runoff = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af, Depth= 0.57"
Routed to Pond 326Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
937	39	>75% Grass cover, Good, HSG A
790	98	Paved roads w/curbs & sewers, HSG A
60	39	>75% Grass cover, Good, HSG A
1,787	65	Weighted Average
997		55.79% Pervious Area
790		44.21% Impervious Area

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

Summary for Subcatchment 326Sb: Porous Walk

Runoff = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af, Depth= 2.91"
Routed to Pond 326Pb : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
57	98	Paved roads w/curbs & sewers, HSG A
57		100.00% Impervious Area

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

Summary for Subcatchment 326Sc: Porous Walk

Runoff = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af, Depth= 2.91"
Routed to Pond 326Pc : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
53	98	Paved roads w/curbs & sewers, HSG A
53		100.00% Impervious Area

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

Summary for Subcatchment 330S: Flow to CB330

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.016 af, Depth= 2.59"
Routed to Pond 330P : CB330 T0 CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
662	98	Paved roads w/curbs & sewers, HSG A
2,438	98	Paved parking, HSG A
46	39	>75% Grass cover, Good, HSG A
102	39	>75% Grass cover, Good, HSG A
46	39	>75% Grass cover, Good, HSG A
3,294	95	Weighted Average
194		5.89% Pervious Area
3,100		94.11% Impervious Area

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

Summary for Subcatchment 330Sa: Porous Walk

Runoff = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Depth= 0.49"
Routed to Pond 330Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
186	98	Paved roads w/curbs & sewers, HSG A
208	39	>75% Grass cover, Good, HSG A
56	39	>75% Grass cover, Good, HSG A
450	63	Weighted Average
264		58.67% Pervious Area
186		41.33% Impervious Area

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

Summary for Subcatchment 330Sb: Porous Walk

Runoff = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Depth= 0.49"
Routed to Pond 330Pb : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
131	39	>75% Grass cover, Good, HSG A
87	98	Paved roads w/curbs & sewers, HSG A
218	63	Weighted Average
131		60.09% Pervious Area
87		39.91% Impervious Area

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

Summary for Subcatchment 331S: Flow to CB331

Runoff = 0.34 cfs @ 12.07 hrs, Volume= 0.024 af, Depth= 1.23"
Routed to Pond 331P : CB331 TO CB330

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
201	39	>75% Grass cover, Good, HSG A
6,654	98	Paved roads w/curbs & sewers, HSG A
200	39	>75% Grass cover, Good, HSG A
249	39	>75% Grass cover, Good, HSG A
2,283	39	>75% Grass cover, Good, HSG A
433	39	>75% Grass cover, Good, HSG A
10,020	78	Weighted Average
3,366		33.59% Pervious Area
6,654		66.41% Impervious Area

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

Summary for Subcatchment 331Sa: Porous Walk

Runoff = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af, Depth= 0.57"
Routed to Pond 331Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
598	39	>75% Grass cover, Good, HSG A
486	98	Paved roads w/curbs & sewers, HSG A
1,084	65	Weighted Average
598		55.17% Pervious Area
486		44.83% Impervious Area

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

Summary for Subcatchment 332S: Flow to CB332

Runoff = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af, Depth= 1.56"
Routed to Pond 332P : CB332 to CB331

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,255	98	Paved roads w/curbs & sewers, HSG A
296	39	>75% Grass cover, Good, HSG A
128	39	>75% Grass cover, Good, HSG A
1,679	83	Weighted Average
424		25.25% Pervious Area
1,255		74.75% Impervious Area

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

Summary for Subcatchment 332Sa: Porous Walk

Runoff = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 1.11"
Routed to Pond 332Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
701	98	Paved roads w/curbs & sewers, HSG A
34	98	Paved roads w/curbs & sewers, HSG A
214	98	Paved roads w/curbs & sewers, HSG A
126	39	>75% Grass cover, Good, HSG A
451	39	>75% Grass cover, Good, HSG A
1,526	76	Weighted Average
577		37.81% Pervious Area
949		62.19% Impervious Area

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

Summary for Subcatchment 333S: Flow to CB332

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 333P : CB333 TO CB331

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,063	39	>75% Grass cover, Good, HSG A
2,063		100.00% Pervious Area

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

Summary for Subcatchment 333Sa: Porous Walk

Runoff = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af, Depth= 0.32"
Routed to Pond 333Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
252	39	>75% Grass cover, Good, HSG A
325	98	Paved roads w/curbs & sewers, HSG A
1,005	58	Weighted Average
680		67.66% Pervious Area
325		32.34% Impervious Area

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

Summary for Subcatchment 335S: Flow to CB335

Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 1.11"
Routed to Pond 335P : CB335 TO CB330

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,586	39	>75% Grass cover, Good, HSG A
2,677	98	Paved roads w/curbs & sewers
4,263	76	Weighted Average
1,586		37.20% Pervious Area
2,677		62.80% Impervious Area

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

Summary for Subcatchment 340S: Flow to CB340

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.007 af, Depth= 1.49"
Routed to Pond 340P : CB340TO CB335

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
709	39	>75% Grass cover, Good, HSG A
1,907	98	Paved roads w/curbs & sewers
2,616	82	Weighted Average
709		27.10% Pervious Area
1,907		72.90% Impervious Area

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

Summary for Subcatchment 350S: Flow to CB350

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 1.94"
Routed to Pond 350P : CB350 TO DMH345

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
531	39	>75% Grass cover, Good, HSG A
2,607	98	Paved roads w/curbs & sewers
3,138	88	Weighted Average
531		16.92% Pervious Area
2,607		83.08% Impervious Area

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

Summary for Subcatchment 351S: Flow to CB351

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 2.49"
Routed to Pond 351P : CB351 TO CB350

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
178	39	>75% Grass cover, Good, HSG A
2,422	98	Paved roads w/curbs & sewers
2,600	94	Weighted Average
178		6.85% Pervious Area
2,422		93.15% Impervious Area

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

Summary for Subcatchment 360S: Flow to CB360

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 2.91"
Routed to Pond 360P : CB360 TO DMH355

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,507	98	Paved roads w/curbs & sewers
3,507		100.00% Impervious Area

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

Summary for Subcatchment 365S: Flow to CB365

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond 365P : CB365 TO CB360

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,724	98	Paved roads w/curbs & sewers
3,724		100.00% Impervious Area

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

Summary for Subcatchment 400os: East Side of NH Route 108 to CB13

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af, Depth= 1.86"
Routed to Pond 13P : CB13 to CB14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,141	74	>75% Grass cover, Good, HSG C
7,791	98	Paved parking & roofs
13,932	87	Weighted Average
6,141		44.08% Pervious Area
7,791		55.92% Impervious Area

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

Summary for Subcatchment 402GS: SUBCATCHMENT 402GS

Runoff = 0.01 cfs @ 22.20 hrs, Volume= 0.004 af, Depth= 0.01"
Routed to Pond 402GP : CB4+02G TO CB4+19R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
22,451	98	Impervious
71,415	30	Woods, Good, HSG A
102,640	39	>75% Grass cover, Good, HSG A
196,506	42	Weighted Average
174,055		88.57% Pervious Area
22,451		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	21	0.0200	0.97		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
8.1	29	0.0210	0.06		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
1.6	88	0.0341	0.92		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.0	18	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
4.7	616	0.0211	2.18		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
1.2	147	0.0200	2.12		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
16.0	919	Total			

Summary for Subcatchment 405S: Flow to CB405

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 0.030 af, Depth= 2.59"
Routed to Pond 405P : CB405 TO HW400

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,020	80	>75% Grass cover, Good, HSG D
5,060	98	Impervious
6,080	95	Weighted Average
1,020		16.78% Pervious Area
5,060		83.22% Impervious Area

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

Summary for Subcatchment 410S: Flow to DCB410

Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.086 af, Depth= 2.69"
Routed to Pond 410P : DCB410 TO CB405

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
63	74	>75% Grass cover, Good, HSG C
2,135	80	>75% Grass cover, Good, HSG D
14,546	98	Paved parking & roofs
16,744	96	Weighted Average
2,198		13.13% Pervious Area
14,546		86.87% Impervious Area

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

Summary for Subcatchment 415S: Flow to CB415

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 0.025 af, Depth= 2.49"
Routed to Pond 415P : CB415 TO CB410

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,092	80	>75% Grass cover, Good, HSG D
4,113	98	Paved parking & roofs
5,205	94	Weighted Average
1,092		20.98% Pervious Area
4,113		79.02% Impervious Area

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

Summary for Subcatchment 416S: Flow to CB416

Runoff = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 2.49"
Routed to Pond 416P : CB416 TO CB415

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
480	74	>75% Grass cover, Good, HSG C
924	80	>75% Grass cover, Good, HSG D
5,939	98	Paved parking & roofs
7,343	94	Weighted Average
1,404		19.12% Pervious Area
5,939		80.88% Impervious Area

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

Summary for Subcatchment 419LS: SUBCATCHMENT 419LS

Runoff = 0.85 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 1.00"
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
19,001	98	Paved roads w/curbs & sewers
26	76	Gravel, HSG A
13,255	39	>75% Grass cover, Good, HSG A
32,282	74	Weighted Average
13,281		41.14% Pervious Area
19,001		58.86% Impervious Area

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

Summary for Subcatchment 419RS: SUBCATCHMENT 419RS

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 0.70"
Routed to Pond 419RP : CB4+19R TO CB4+19L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,113	98	Impervious
13,906	39	>75% Grass cover, Good, HSG A
27,019	68	Weighted Average
13,906		51.47% Pervious Area
13,113		48.53% Impervious Area

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

Summary for Subcatchment 500os: Drive to CB14

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 2.91"
Routed to Pond 14P : CB14 to CB15

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,717	98	Paved roads w/curbs & sewers
1,717		100.00% Impervious Area

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

Summary for Subcatchment 505S: McDONALD SITE

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af, Depth= 2.20"
Routed to Pond BMP-1 : BMP-1 STORMTECH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	6,880	61	>75% Grass cover, Good, HSG B
	2,300	74	>75% Grass cover, Good, HSG C
*	25,140	98	Paved parking
*	3,726	98	Paved parking - Porous Pavement
*	3,694	98	Roofs
	41,740	91	Weighted Average
	9,180		21.99% Pervious Area
	32,560		78.01% Impervious Area

Summary for Subcatchment 507S: Flow to CB507

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 2.91"
Routed to Pond 507P : CB507 TO CB505

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10	74	>75% Grass cover, Good, HSG C
3,328	98	Impervious
3,338	98	Weighted Average
10		0.30% Pervious Area
3,328		99.70% Impervious Area

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

Summary for Subcatchment 508Aos: Flow to CBC4

Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth= 0.75"
Routed to Pond C4P : CBC4 to CBC3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,324	98	Paved roads w/curbs & sewers
6,858	39	>75% Grass cover, Good, HSG A
1,729	30	Woods, Good, HSG A
17,911	69	Weighted Average
8,587		47.94% Pervious Area
9,324		52.06% Impervious Area

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

Summary for Subcatchment 508Bos: West Side of NH Route 108 to CBC3

Runoff = 0.12 cfs @ 12.27 hrs, Volume= 0.022 af, Depth= 0.29"
Routed to Pond C3P : CBC3 to CB509

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
717	30	Woods, Good, HSG A
26,736	39	>75% Grass cover, Good, HSG A
12,242	98	Paved parking & roofs
39,695	57	Weighted Average
27,453		69.16% Pervious Area
12,242		30.84% Impervious Area

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

Summary for Subcatchment 508S: Flow to CB508

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.016 af, Depth= 0.53"
Routed to Pond 509P : CB509 to CB508

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,086	39	>75% Grass cover, Good, HSG A
212	74	>75% Grass cover, Good, HSG C
6,689	98	Paved parking & roofs
15,987	64	Weighted Average
9,298		58.16% Pervious Area
6,689		41.84% Impervious Area

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

Summary for Subcatchment 600os: Drive to CB15

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond 15P : CB15 out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,747	98	Paved roads w/curbs & sewers
3,747		100.00% Impervious Area

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

Summary for Subcatchment 600S: POND 600

Runoff = 0.49 cfs @ 12.10 hrs, Volume= 0.051 af, Depth= 0.46"
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
36,757	74	>75% Grass cover, Good, HSG C
18,616	39	>75% Grass cover, Good, HSG A
515	98	Impervious
936	89	Gravel, HSG C
72	76	Gravel, HSG A
1,611	30	Woods, Good, HSG A
58,507	62	Weighted Average
57,992		99.12% Pervious Area
515		0.88% Impervious Area

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

Summary for Subcatchment 700os: East Side of NH Route 108

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 1.86"
Routed to Reach 16R : Existing Culvert to West Side of NH Route 108

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,369	98	Paved roads w/curbs & sewers
11,049	74	>75% Grass cover, Good, HSG C
24,418	87	Weighted Average
11,049		45.25% Pervious Area
13,369		54.75% Impervious Area

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

Summary for Subcatchment 710S: Flow to CB710

Runoff = 0.31 cfs @ 12.07 hrs, Volume= 0.022 af, Depth= 2.59"
Routed to Pond 710P : CB710 TO HW700

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
474	74	>75% Grass cover, Good, HSG C
4,068	98	Paved parking & roofs
4,542	95	Weighted Average
474		10.44% Pervious Area
4,068		89.56% Impervious Area

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

Summary for Subcatchment 711S: Flow to CB711

Runoff = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af, Depth= 2.59"
Routed to Pond 711P : CB711 TO CB710

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
522	74	>75% Grass cover, Good, HSG C
3,835	98	Paved parking & roofs
4,357	95	Weighted Average
522		11.98% Pervious Area
3,835		88.02% Impervious Area

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

Summary for Subcatchment 715S: Flow to CB715

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.013 af, Depth= 2.11"
Routed to Pond 715P : CB715 TO CB710

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
835	74	>75% Grass cover, Good, HSG C
432	80	>75% Grass cover, Good, HSG D
2,057	98	Paved roads w/curbs & sewers
3,324	90	Weighted Average
1,267		38.12% Pervious Area
2,057		61.88% Impervious Area

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

Summary for Subcatchment 720S: Flow to DCB720

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.088 af, Depth= 2.59"
Routed to Pond 720P : DCB720 TO CB715

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,188	74	>75% Grass cover, Good, HSG C
1,098	80	>75% Grass cover, Good, HSG D
15,434	98	Paved parking & roofs
17,720	95	Weighted Average
2,286		12.90% Pervious Area
15,434		87.10% Impervious Area

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

Summary for Subcatchment 725S: Flows to CB725

Runoff = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af, Depth= 2.59"
Routed to Pond 725P : CB725 TO DCB720

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
270	74	>75% Grass cover, Good, HSG C
4,030	80	>75% Grass cover, Good, HSG D
23,285	98	Paved parking & roofs
27,585	95	Weighted Average
4,300		15.59% Pervious Area
23,285		84.41% Impervious Area

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

Summary for Subcatchment 801S: HW801 TO HW800

Runoff = 2.28 cfs @ 12.09 hrs, Volume= 0.189 af, Depth= 0.66"
Routed to Pond 801P : HW801 TO HW800

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
60,146	39	>75% Grass cover, Good, HSG A
44,610	74	>75% Grass cover, Good, HSG C
490	89	Gravel roads, HSG C
45,646	98	Paved parking & roofs
150,892	67	Weighted Average
105,246		69.75% Pervious Area
45,646		30.25% Impervious Area

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

Summary for Subcatchment 805S: FLOW TO CB805

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.69"
Routed to Pond 805P : CB805 TO HW802

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
53	39	>75% Grass cover, Good, HSG A
278	74	>75% Grass cover, Good, HSG C
3,762	98	Paved parking & roofs
4,093	96	Weighted Average
331		8.09% Pervious Area
3,762		91.91% Impervious Area

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

Summary for Subcatchment 806S: FLOW TO CB806

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 2.39"
Routed to Pond 806P : CB806 TO CB805

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
301	39	>75% Grass cover, Good, HSG A
3,511	98	Paved parking & roofs
3,812	93	Weighted Average
301		7.90% Pervious Area
3,511		92.10% Impervious Area

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

Summary for Subcatchment 807S: FLOW TO CB807

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 1.63"
Routed to Pond 807P : CB807 TO CB806

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,308	39	>75% Grass cover, Good, HSG A
4,251	98	Paved parking & roofs
5,559	84	Weighted Average
1,308		23.53% Pervious Area
4,251		76.47% Impervious Area

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

Summary for Subcatchment 808S: FLOW TO CB808

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 808P : CB808 TO CB807

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,999	39	>75% Grass cover, Good, HSG A
3,999		100.00% Pervious Area

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

Summary for Subcatchment 857LS: SUBCATCHMENT 857LS

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 1.11"
Routed to Pond 857LP : CB8+57L TO CB4+19L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10,671	98	Impervious
6,310	39	>75% Grass cover, Good, HSG A
16,981	76	Weighted Average
6,310		37.16% Pervious Area
10,671		62.84% Impervious Area

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

Summary for Subcatchment 857RS: SUBCATCHMENT 857RS

Runoff = 0.02 cfs @ 12.43 hrs, Volume= 0.008 af, Depth= 0.14"
Routed to Pond 857RP : CB8+57R TO CB8+57L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,683	98	Impervious
25,286	39	>75% Grass cover, Good, HSG A
31,969	51	Weighted Average
25,286		79.10% Pervious Area
6,683		20.90% Impervious Area

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

Summary for Subcatchment 900S: SUBCATCHMENT 900S

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 900P : POND 900

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	1,920	98	Impervious
	74,022	39	>75% Grass cover, Good, HSG A
	2,207	30	Woods, Good, HSG A
	78,149	40	Weighted Average
	76,229		97.54% Pervious Area
	1,920		2.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0714	0.27		**Sheet Flow, Segment 11** Grass: Short n= 0.150 P2= 3.00"
0.1	35	0.3330	9.29		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
5.8	28	0.0450	0.08		**Sheet Flow, Segment 3** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	8	0.3330	0.31		**Sheet Flow, Segment 4** Grass: Short n= 0.150 P2= 3.00"
12.4	171	Total			

Summary for Subcatchment 1100S: 1100S

Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Depth= 0.79"
Routed to Pond 2182P : DCB 21+82R TO DMH 21+97R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,189	98	Paved parking, HSG A
2,903	39	>75% Grass cover, Good, HSG A
6,092	70	Weighted Average
2,903		47.65% Pervious Area
3,189		52.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	22	0.0454	0.17		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	5	0.0200	0.73		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.3	73	0.0333	3.70		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
2.6	100	Total			

Summary for Subcatchment 1295GS: SUBCATCHMENT 1295GS

Runoff = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af, Depth= 0.26"
Routed to Pond 1295GP : CB12+95G TO CB12+95R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
630	76	Gravel, HSG A
5,236	35	Brush, Fair, HSG A
23,655	98	Impervious
22,746	39	>75% Grass cover, Good, HSG A
18,423	30	Woods, Good, HSG A
70,690	56	Weighted Average
47,035		66.54% Pervious Area
23,655		33.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0200	0.92		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
6.1	34	0.0588	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	61	0.0557	1.18		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.0	12	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
3.3	343	0.0134	1.74		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
10.6	466	Total			

Summary for Subcatchment 1295LS: SUBCATCHMENT 1295LS

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 1.23"
Routed to Pond 1295LP : CB12+95L TO CB8+57L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,302	98	Impervious
2,776	39	>75% Grass cover, Good, HSG A
8,078	78	Weighted Average
2,776		34.36% Pervious Area
5,302		65.64% Impervious Area

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

Summary for Subcatchment 1295RS: SUBCATCHMENT 1295RS

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 0.75"
Routed to Pond 1295RP : CB12+95R CB12+95L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,666	98	Paved parking & roofs
6,289	39	>75% Grass cover, Good, HSG A
12,955	69	Weighted Average
6,289		48.54% Pervious Area
6,666		51.46% Impervious Area

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

Summary for Subcatchment 1643LS: SUBCATCHMENT 1643LS

Runoff = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Depth= 0.39"
Routed to Pond 1643LP : CB16+43L TO CB16+43R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
600	98	Impervious
1,096	39	>75% Grass cover, Good, HSG A
1,696	60	Weighted Average
1,096		64.62% Pervious Area
600		35.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	34	0.0150	0.12		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.4	91	0.0280	3.40		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
5.2	125	Total			

Summary for Subcatchment 1643RS: SUBCATCHMENT 1643RS

Runoff = 0.16 cfs @ 12.12 hrs, Volume= 0.013 af, Depth= 0.84"
Routed to Pond 1643RP : CB16+43R TO CB17+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,445	98	Impervious
3,769	39	>75% Grass cover, Good, HSG A
8,214	71	Weighted Average
3,769		45.89% Pervious Area
4,445		54.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	58	0.0172	0.14		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	105	0.0280	3.40		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
7.5	163	Total			

Summary for Subcatchment 1785LS: SUBCATCHMENT 1785LS

Runoff = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af, Depth= 0.26"
Routed to Pond 1785LP : CB17+85L TO CB17+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,621	98	Impervious
6,494	39	>75% Grass cover, Good, HSG A
9,115	56	Weighted Average
6,494		71.25% Pervious Area
2,621		28.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	95	0.0368	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	29	0.0350	3.80		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.4	107	0.0429	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
8.1	231	Total			

Summary for Subcatchment 1785RS: SUBCATCHMENT 1785RS

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 0.75"
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,073	98	Impervious
2,884	39	>75% Grass cover, Good, HSG A
5,957	69	Weighted Average
2,884		48.41% Pervious Area
3,073		51.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	40	0.0625	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.3	23	0.0400	1.31		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.5	122	0.0429	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
3.9	185	Total			

Summary for Subcatchment 1928LS: SUBCATCHMENT 1928LS

Runoff = 0.08 cfs @ 12.12 hrs, Volume= 0.008 af, Depth= 0.53"
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,343	98	Impervious
4,658	39	>75% Grass cover, Good, HSG A
8,001	64	Weighted Average
4,658		58.22% Pervious Area
3,343		41.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	85	0.0470	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	20	0.0500	4.54		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.3	68	0.0428	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
6.7	173	Total			

Summary for Subcatchment 1928RS: SUBCATCHMENT 1928RS

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 0.75"
Routed to Pond 1928RP : CB19+28R TO CB19+28L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,177	98	Impervious
3,034	39	>75% Grass cover, Good, HSG A
6,211	69	Weighted Average
3,034		48.85% Pervious Area
3,177		51.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	45	0.0555	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	132	0.0429	4.20		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
4.1	177	Total			

Summary for Subcatchment 1979RS: SUBCATCHMENT 1979RS

Runoff = 0.03 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 0.66"
Routed to Pond 1979RP : CB19+79 TO CB21+73R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,083	98	Paved parking, HSG A
1,176	39	>75% Grass cover, Good, HSG A
2,259	67	Weighted Average
1,176		52.06% Pervious Area
1,083		47.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	48	0.0417	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.2	45	0.0429	4.20		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
4.4	93	Total			

Summary for Subcatchment 2173LS: SUBCATCHMENT 2173LS

Runoff = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af, Depth= 0.49"
Routed to Pond 2173LP : CB21+73L TO CB21+73R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,690	98	Impervious
11,104	39	>75% Grass cover, Good, HSG A
18,794	63	Weighted Average
11,104		59.08% Pervious Area
7,690		40.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	83	0.0602	0.25		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	15	0.0500	4.54		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.6	107	0.0187	2.78		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.3	205	Total			

Summary for Subcatchment 2173RS: SUBCATCHMENT 2173RS

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 0.89"
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,759	98	Impervious
3,756	39	>75% Grass cover, Good, HSG A
8,515	72	Weighted Average
3,756		44.11% Pervious Area
4,759		55.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	72	0.0347	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.3	54	0.0187	2.78		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.5	126	Total			

Summary for Subcatchment 2373S: SUBCATCHMENT 23+73S

Congregate Care Roof

Runoff = 1.13 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 2.91"
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,629	98	Roofs, HSG A
15,629		100.00% Impervious Area

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

Summary for Subcatchment 2440S: SUBCATCHMENT 2440RS

Runoff = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af, Depth= 0.53"
Routed to Pond 2440P : TD24+40R TO CB24+60R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	626	98	Impervious
	836	39	>75% Grass cover, Good, HSG A
	1,462	64	Weighted Average
	836		57.18% Pervious Area
	626		42.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	42	0.0595	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	7	0.0200	2.87		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.1	12	0.0200	2.87		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
3.4	61	Total			

Summary for Subcatchment 2460LS: SUBCATCHMENT 2460LS

Runoff = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af, Depth= 0.66"
Routed to Pond 2460LP : CB24+60L TO CB24+60R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,964	39	>75% Grass cover, Good, HSG A
12,666	98	Paved parking & roofs
26,630	67	Weighted Average
13,964		52.44% Pervious Area
12,666		47.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0256	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.2	25	0.0256	2.58		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.5	253	0.0187	2.78		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.9	378	Total			

Summary for Subcatchment 2460RS: SUBCATCHMENT 2460RS

Runoff = 0.27 cfs @ 12.06 hrs, Volume= 0.020 af, Depth= 0.75"
Routed to Pond 2460RP : CB24+60R TO DMH24+86R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,157	98	Impervious
6,766	39	>75% Grass cover, Good, HSG A
13,923	69	Weighted Average
6,766		48.60% Pervious Area
7,157		51.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	21	0.0500	0.17		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	4.54		**Shallow Concentrated Flow, Segment 1** Paved Kv= 20.3 fps
0.1	20	0.0800	4.55		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.3	215	0.0187	2.78		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
3.4	261	Total			

Summary for Subcatchment 2460S: SUBCATCHMENT 2460S

Runoff = 0.33 cfs @ 12.02 hrs, Volume= 0.020 af, Depth= 1.56"
Routed to Pond 2460P : CB24+60R TO DMH24+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	5,054	98	Impervious
	1,756	39	>75% Grass cover, Good, HSG A
	6,810	83	Weighted Average
	1,756		25.79% Pervious Area
	5,054		74.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	24	0.4166	0.42		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	7	0.0200	0.78		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.2	49	0.0333	3.70		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
0.3	58	0.0333	2.94		**Shallow Concentrated Flow, Segment 4** Unpaved Kv= 16.1 fps
1.6	138	Total			

Summary for Subcatchment 2474S: SUBCATCHMENT 2474RS

Runoff = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 0.53"
Routed to Pond 2474P : DMH24+74R TO DMH24+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	1,829	98	Impervious
	2,424	39	>75% Grass cover, Good, HSG A
	4,253	64	Weighted Average
	2,424		57.00% Pervious Area
	1,829		43.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	12	0.0200	0.11		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.4	8	0.3330	0.31		**Sheet Flow, Segment 2** Grass: Short n= 0.150 P2= 3.00"
1.1	10	0.0500	0.15		**Sheet Flow, Segment 3** Grass: Short n= 0.150 P2= 3.00"
0.1	9	0.0200	2.87		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
0.1	17	0.0333	2.94		**Shallow Concentrated Flow, Segment 5** Unpaved Kv= 16.1 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, Segment 6** Paved Kv= 20.3 fps
3.7	76	Total			

Summary for Subcatchment 2619S: SUBCATCHMENT 26+19S

Congregate Care Roof

Runoff = 1.13 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 2.91"
Routed to Pond 2625RP : DMH26+25R TO HW26+25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,629	98	Roofs, HSG A
15,629		100.00% Impervious Area

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

Summary for Subcatchment 2723RS: SUBCATCHMENT 2723RS

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 1.05"
Routed to Pond 2723RP : TD27+23R TO DMH27+23R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	1,726	39	>75% Grass cover, Good, HSG A
*	2,750	98	Impervious
	4,476	75	Weighted Average
	1,726		38.56% Pervious Area
	2,750		61.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	20	0.3330	0.37		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
3.5	60	0.1000	0.28		**Sheet Flow, Segment 2** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	4.54		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
4.4	85	Total			

Summary for Subcatchment 2730LS: SUBCATCHMENT 2730LS

Runoff = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af, Depth= 0.70"
Routed to Pond 2730LP : CB27+30L TO 27+30R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	11,996	98	Impervious
	12,020	39	>75% Grass cover, Good, HSG A
	24,016	68	Weighted Average
	12,020		50.05% Pervious Area
	11,996		49.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0400	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.8	153	0.0400	3.22		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.5	209	0.0125	2.27		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.0	462	Total			

Summary for Subcatchment 2730RS: SUBCATCHMENT 2730RS

Runoff = 0.25 cfs @ 12.06 hrs, Volume= 0.018 af, Depth= 0.79"
Routed to Pond 2730RP : CB27+30R TO DMH27+23R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	5,762	39	>75% Grass cover, Good, HSG A
*	6,294	98	Impervious
	12,056	70	Weighted Average
	5,762		47.79% Pervious Area
	6,294		52.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	25	0.0500	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	3.60		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
0.1	24	0.0500	3.60		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.5	207	0.0125	2.27		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
3.9	261	Total			

Summary for Subcatchment 3018GS: SUBCATCHMENT 3018GS

Runoff = 0.03 cfs @ 15.81 hrs, Volume= 0.019 af, Depth= 0.04"
Routed to Pond 3018GP : CB30+18G TO CB30+20L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,056	74	>75% Grass cover, Good, HSG C
61,349	30	Woods, Good, HSG A
168,836	39	>75% Grass cover, Good, HSG A
34,830	98	Impervious
270,071	45	Weighted Average
235,241		87.10% Pervious Area
34,830		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	100	0.0327	0.09		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
1.2	64	0.0327	0.90		**Shallow Concentrated Flow, Segment 2** Woodland Kv= 5.0 fps
0.1	41	0.3330	8.66		**Shallow Concentrated Flow, Segment 3** Grassed Waterway Kv= 15.0 fps
4.8	614	0.0200	2.12		**Shallow Concentrated Flow, Segment 4** Grassed Waterway Kv= 15.0 fps
2.2	319	0.0250	2.37		**Shallow Concentrated Flow, Segment 5** Grassed Waterway Kv= 15.0 fps
26.5	1,138	Total			

Summary for Subcatchment 3020LS: SUBCATCHMENT 3020LS

Runoff = 0.70 cfs @ 12.16 hrs, Volume= 0.065 af, Depth= 0.79"
Routed to Pond 3020LP : CB30+20L TO CB30+20R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
250	74	>75% Grass cover, Good, HSG C
22,804	98	Paved parking & roofs
19,984	39	>75% Grass cover, Good, HSG A
43,038	70	Weighted Average
20,234		47.01% Pervious Area
22,804		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0300	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	71	0.0211	2.34		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.2	178	0.0160	2.57		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.3	349	Total			

Summary for Subcatchment 3020RS: SUBCATCHMENT 3020RS

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 1.23"
Routed to Pond 3020RP : CB30+20R TO HW29+63

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
677	74	>75% Grass cover, Good, HSG C
6,169	98	Paved parking & roofs
3,116	39	>75% Grass cover, Good, HSG A
157	76	Gravel, HSG A
10,119	78	Weighted Average
3,950		39.04% Pervious Area
6,169		60.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	59	0.0339	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.9	145	0.0159	2.56		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.3	204	Total			

Summary for Subcatchment 3200S: Flow to CB3200

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 3200P : CB3200 TO CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,537	39	>75% Grass cover, Good, HSG A
3,537		100.00% Pervious Area

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

Summary for Subcatchment RD1Sa: Roof drain 1a

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 2.91"
Routed to Pond RD1Pa : RD1a TO CB327

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,231	98	Paved parking & roofs
5,231		100.00% Impervious Area

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

Summary for Subcatchment RD1Sb: Roof Drain 1b

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond RD1Pb : RD1b to CB 324

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	3,703	98	Paved parking & roofs
	3,703		100.00% Impervious Area

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

Summary for Subcatchment RD2Sa: Roof drain 2a

Runoff = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Depth= 2.91"
Routed to Pond RD2Pa : RD2a to CB333

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	4,238	98	Paved parking & roofs
	4,238		100.00% Impervious Area

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

Summary for Subcatchment RD2Sb: Roof drain 2b

Runoff = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 2.91"
Routed to Pond RD2Pb : RD2b TO CB322

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,138	98	Paved parking & roofs
4,138		100.00% Impervious Area

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

Summary for Subcatchment RD3S: ROOF DRAIN

Runoff = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Depth= 2.91"
Routed to Pond RD3P : RD3 TO CB808

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,273	98	Paved parking & roofs
18,273		100.00% Impervious Area

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

Summary for Subcatchment RD4S: ROOF DRAIN

Runoff = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond RD4P : RD4 TO CB807

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
504	98	Impervious
504		100.00% Impervious Area

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

Summary for Subcatchment RD5S: ROOF DRAIN

Runoff = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af, Depth= 2.91"
Routed to Pond RD5P : RD5 TO CB806

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,667	98	Impervious
18,667		100.00% Impervious Area

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

Summary for Subcatchment RD6S: ROOF DRAIN

Runoff = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 2.91"
Routed to Pond RD6P : RD6 TO CB805

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,690	98	Impervious
9,690		100.00% Impervious Area

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

Summary for Subcatchment RD8S: Roof Drain

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth= 2.91"
Routed to Pond RD8P : RD8 TO CB107

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,295	98	Impervious
2,295		100.00% Impervious Area

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

Summary for Subcatchment RD9S: Roof Drain

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 2.91"
Routed to Pond RD9P : RD9 TO CB405

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,575	98	Impervious
1,575		100.00% Impervious Area

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

Summary for Reach 1AR: STREAM

[62] Hint: Exceeded Reach 326R OUTLET depth by 0.31' @ 12.15 hrs

Inflow Area = 20.946 ac, 36.63% Impervious, Inflow Depth > 1.05" for 2 YR event
Inflow = 5.81 cfs @ 12.13 hrs, Volume= 1.839 af
Outflow = 5.61 cfs @ 12.16 hrs, Volume= 1.839 af, Atten= 3%, Lag= 1.7 min
Routed to Reach 1R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.59 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 7.2 min

Peak Storage= 803 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 6.14'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 108.07 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 370.0' Slope= 0.0314 '/'
Inlet Invert= 87.70', Outlet Invert= 76.10'



Summary for Reach 1BR: STREAM

Inflow Area = 1.757 ac, 0.00% Impervious, Inflow Depth = 0.89" for 2 YR event
Inflow = 1.52 cfs @ 12.13 hrs, Volume= 0.131 af
Outflow = 1.44 cfs @ 12.17 hrs, Volume= 0.131 af, Atten= 5%, Lag= 2.0 min
Routed to Reach 1R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.75 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 8.6 min

Peak Storage= 255 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 4.92'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 119.58 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 310.0' Slope= 0.0384 '/'
Inlet Invert= 88.00', Outlet Invert= 76.10'



Summary for Reach 1R: STREAM

[62] Hint: Exceeded Reach 1AR OUTLET depth by 0.16' @ 12.24 hrs
[62] Hint: Exceeded Reach 1BR OUTLET depth by 0.39' @ 12.21 hrs

Inflow Area = 22.703 ac, 33.79% Impervious, Inflow Depth > 1.04" for 2 YR event
Inflow = 7.05 cfs @ 12.16 hrs, Volume= 1.969 af
Outflow = 6.74 cfs @ 12.19 hrs, Volume= 1.969 af, Atten= 4%, Lag= 2.1 min
Routed to Reach 9R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.20 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 9.0 min

Peak Storage= 1,166 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 6.83'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 78.59 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 380.0' Slope= 0.0166 '/'
Inlet Invert= 76.10', Outlet Invert= 69.80'



Summary for Reach 2R: REACH 2

Inflow Area = 8.009 ac, 44.00% Impervious, Inflow Depth > 0.65" for 2 YR event
Inflow = 0.18 cfs @ 12.15 hrs, Volume= 0.437 af
Outflow = 0.15 cfs @ 22.58 hrs, Volume= 0.435 af, Atten= 18%, Lag= 626.2 min
Routed to Reach 8R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.61 fps, Min. Travel Time= 15.2 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 18.3 min

Peak Storage= 136 cf @ 22.58 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 4.24'
Bank-Full Depth= 1.50' Flow Area= 10.5 sf, Capacity= 42.77 cfs

4.00' x 1.50' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 10.00'
Length= 560.0' Slope= 0.0193 '/'
Inlet Invert= 93.80', Outlet Invert= 83.00'



Summary for Reach 3R: REACH 3

[62] Hint: Exceeded Reach 41R OUTLET depth by 0.08' @ 12.50 hrs

Inflow Area = 27.711 ac, 26.77% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.36 cfs @ 12.40 hrs, Volume= 0.053 af
Outflow = 0.34 cfs @ 12.50 hrs, Volume= 0.053 af, Atten= 6%, Lag= 6.2 min
Routed to Reach 7R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.79 fps, Min. Travel Time= 7.2 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 18.1 min

Peak Storage= 148 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 5.34'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 24.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 340.0' Slope= 0.0200 '/'
Inlet Invert= 95.30', Outlet Invert= 88.50'



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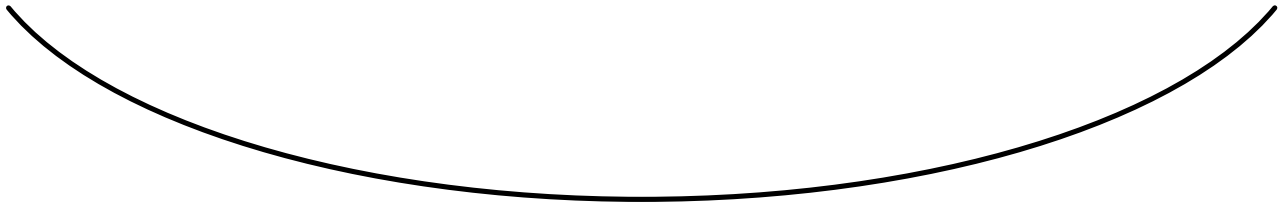
Summary for Reach 4R: REACH 4

Inflow Area = 3.494 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.03 cfs @ 15.06 hrs, Volume= 0.019 af
Outflow = 0.03 cfs @ 15.23 hrs, Volume= 0.019 af, Atten= 1%, Lag= 10.2 min
Routed to Reach 6R : REACH 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.23 fps, Min. Travel Time= 18.2 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 20.4 min

Peak Storage= 32 cf @ 15.23 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 8.41'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 468.29 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050
Length= 255.0' Slope= 0.0149 '/'
Inlet Invert= 95.80', Outlet Invert= 92.00'



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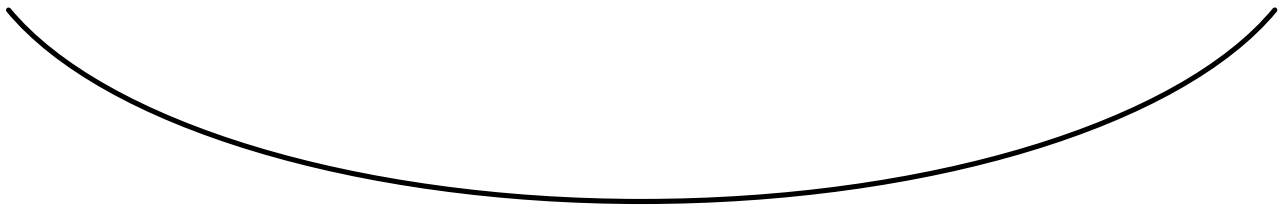
Summary for Reach 5R: REACH 5

Inflow Area = 11.110 ac, 2.39% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : REACH 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.30' Flow Area= 99.7 sf, Capacity= 409.57 cfs

115.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 540.0' Slope= 0.0231 '/'
Inlet Invert= 104.50', Outlet Invert= 92.00'



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Summary for Reach 6R: REACH 6

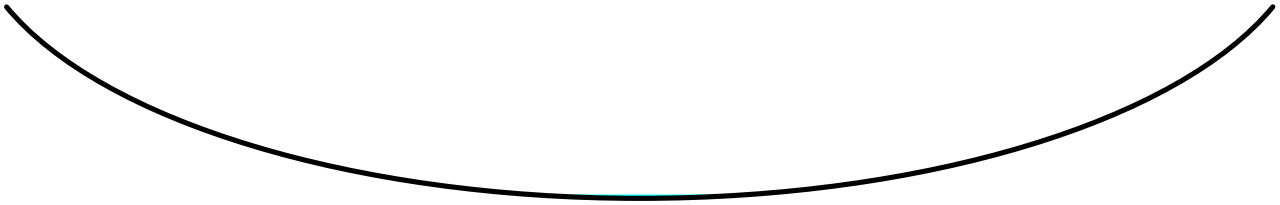
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.01' @ 24.76 hrs
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.03' @ 15.47 hrs

Inflow Area = 14.605 ac, 1.82% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.03 cfs @ 15.23 hrs, Volume= 0.019 af
Outflow = 0.03 cfs @ 15.47 hrs, Volume= 0.019 af, Atten= 1%, Lag= 14.3 min
Routed to Reach 7R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.23 fps, Min. Travel Time= 20.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 24.6 min

Peak Storage= 36 cf @ 15.47 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 7.17'
Bank-Full Depth= 1.30' Flow Area= 43.3 sf, Capacity= 131.20 cfs

50.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 278.0' Slope= 0.0126 '/'
Inlet Invert= 92.00', Outlet Invert= 88.50'



‡

Summary for Reach 7R: STREAM

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.01' @ 15.68 hrs
[62] Hint: Exceeded Reach 6R OUTLET depth by 0.09' @ 12.55 hrs

Inflow Area = 42.315 ac, 18.16% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.34 cfs @ 12.50 hrs, Volume= 0.071 af
Outflow = 0.34 cfs @ 12.55 hrs, Volume= 0.071 af, Atten= 1%, Lag= 2.5 min
Routed to Reach 8R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.95 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.46 fps, Avg. Travel Time= 7.0 min

Peak Storage= 69 cf @ 12.55 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 4.34'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 92.22 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 194.0' Slope= 0.0284 '/'
Inlet Invert= 88.50', Outlet Invert= 83.00'



Summary for Reach 8R: STREAM

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.05' @ 12.69 hrs
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.05' @ 26.36 hrs

Inflow Area = 50.325 ac, 22.27% Impervious, Inflow Depth > 0.12" for 2 YR event
Inflow = 0.48 cfs @ 12.54 hrs, Volume= 0.507 af
Outflow = 0.45 cfs @ 12.66 hrs, Volume= 0.505 af, Atten= 7%, Lag= 7.3 min
Routed to Reach 9R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.01 fps, Min. Travel Time= 8.4 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 14.4 min

Peak Storage= 227 cf @ 12.66 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 4.52'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 98.00 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 512.0' Slope= 0.0258 '/'
Inlet Invert= 83.00', Outlet Invert= 69.80'



Summary for Reach 9R: STREAM

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.03' @ 59.99 hrs
[62] Hint: Exceeded Reach 8R OUTLET depth by 0.53' @ 12.20 hrs

Inflow Area = 73.028 ac, 25.85% Impervious, Inflow Depth > 0.41" for 2 YR event
Inflow = 6.76 cfs @ 12.19 hrs, Volume= 2.474 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.473 af, Atten= 0%, Lag= 0.5 min
Routed to Pond 10P : CULVERT UNDER NH ROUTE 108

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.30 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 2.0 min

Peak Storage= 293 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 6.73'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 84.13 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 100.0' Slope= 0.0190 '/'
Inlet Invert= 69.80', Outlet Invert= 67.90'



Summary for Reach 16R: Existing Culvert to West Side of NH Route 108

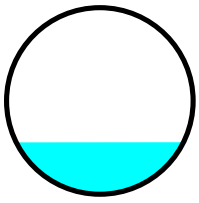
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.561 ac, 54.75% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 4.53 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 13 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 1.12'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.45 cfs

15.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 45.0' Slope= 0.0113 '/'
Inlet Invert= 90.05', Outlet Invert= 89.54'



Summary for Reach 41R: REACH

Inflow Area = 26.604 ac, 27.89% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : REACH 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 23.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 147.0' Slope= 0.0184 '/'
Inlet Invert= 98.00', Outlet Invert= 95.30'



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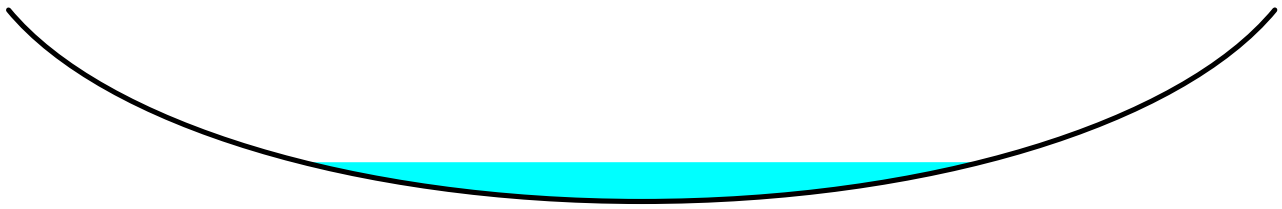
Summary for Reach 326R: Reach 1BR

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth > 1.00" for 2 YR event
Inflow = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af
Outflow = 0.86 cfs @ 16.57 hrs, Volume= 1.404 af, Atten= 0%, Lag= 3.6 min
Routed to Reach 1AR : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.15 fps, Min. Travel Time= 5.2 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 8.3 min

Peak Storage= 267 cf @ 16.57 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 6.80'
Bank-Full Depth= 0.80' Flow Area= 8.0 sf, Capacity= 26.39 cfs

15.00' x 0.80' deep Parabolic Channel, n= 0.050
Length= 358.0' Slope= 0.0288 '/'
Inlet Invert= 98.00', Outlet Invert= 87.70'



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Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.45' @ 12.20 hrs

Inflow Area = 120.147 ac, 18.88% Impervious, Inflow Depth > 0.28" for 2 YR event
Inflow = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af, Atten= 0%, Lag= 0.0 min
Primary = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 68.89' @ 12.20 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=6.74 cfs @ 12.20 hrs HW=68.89' (Free Discharge)
1=Culvert (Barrel Controls 6.74 cfs @ 4.17 fps)

Summary for Pond 11P: CB11 to CB12

Inflow Area = 0.276 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af
Routed to Pond 12R : From CB12 out

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.66' @ 12.07 hrs
Flood Elev= 110.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.11'	**12.0" Round Culvert** L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 105.11' / 104.86' S= 0.0132 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.07 hrs HW=105.66' TW=105.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.87 cfs @ 2.82 fps)

Summary for Pond 12R: From CB12 out

Inflow Area = 0.504 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af
Outflow = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 105.43' @ 12.07 hrs
Flood Elev= 109.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.63'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 104.63' / 104.53' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.59 cfs @ 12.07 hrs HW=105.42' (Free Discharge)
1=Culvert (Barrel Controls 1.59 cfs @ 3.25 fps)

Summary for Pond 13P: CB13 to CB14

[57] Hint: Peaked at 107.07' (Flood elevation advised)

Inflow Area = 0.320 ac, 55.92% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af
Routed to Pond 14P : CB14 to CB15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.07' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	106.63'	**12.0" Round Culvert** L= 98.0' Ke= 0.500 Inlet / Outlet Invert= 106.63' / 105.64' S= 0.0101 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=107.07' TW=106.08' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.72 cfs @ 3.22 fps)

Summary for Pond 14P: CB14 to CB15

[57] Hint: Peaked at 106.08' (Flood elevation advised)

Inflow Area = 0.359 ac, 60.76% Impervious, Inflow Depth = 1.98" for 2 YR event
Inflow = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af
Outflow = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af
Routed to Pond 15P : CB15 out

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.08' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.61'	**12.0" Round Culvert** L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 105.61' / 104.40' S= 0.0484 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.07 hrs HW=106.08' TW=104.97' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.85 cfs @ 2.33 fps)

Summary for Pond 15P: CB15 out

[57] Hint: Peaked at 104.97' (Flood elevation advised)

Inflow Area = 0.445 ac, 68.34% Impervious, Inflow Depth = 2.16" for 2 YR event
Inflow = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af
Outflow = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.97' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	104.33'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 104.33' / 104.23' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.07 hrs HW=104.97' (Free Discharge)
1=Culvert (Barrel Controls 1.12 cfs @ 3.02 fps)

Summary for Pond 100AP: Outlet Structure 105 to HW100 - MODIFIED

[80] Warning: Exceeded Pond 107P by 0.06' @ 24.28 hrs (0.01 cfs 0.000 af)

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth = 1.02" for 2 YR event
Inflow = 5.85 cfs @ 12.07 hrs, Volume= 1.430 af
Outflow = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af, Atten= 85%, Lag= 266.2 min
Primary = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af
Routed to Reach 326R : Reach 1BR

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.56' @ 16.51 hrs Surf.Area= 7,300 sf Storage= 19,935 cf
Flood Elev= 104.00' Surf.Area= 10,000 sf Storage= 40,899 cf

Plug-Flow detention time= 413.9 min calculated for 1.404 af (98% of inflow)
Center-of-Mass det. time= 390.2 min (1,448.5 - 1,058.2)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	40,899 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,135	0	0
98.50	4,349	2,121	2,121
99.00	4,780	2,282	4,403
100.00	5,858	5,319	9,722
101.00	6,746	6,302	16,024
102.00	7,741	7,244	23,268
103.00	8,761	8,251	31,519
104.00	10,000	9,381	40,899

Device	Routing	Invert	Outlet Devices
#1	Primary	98.00'	**36.0" Round Culvert** L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 98.00' / 97.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	98.00'	**0.5" W x 43.2" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	101.60'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.90'	**48.0" x 60.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	101.65'	**8.0" Vert. Orifices (4) X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.86 cfs @ 16.51 hrs HW=101.56' TW=98.16' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.86 cfs of 41.72 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.86 cfs @ 6.05 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Grate** (Controls 0.00 cfs)
  - **5=Orifices (4)** (Controls 0.00 cfs)

Summary for Pond 100P: Outlet Structure 110 to HW109

Inflow Area = 15.095 ac, 39.48% Impervious, Inflow Depth = 0.84" for 2 YR event
Inflow = 12.61 cfs @ 12.07 hrs, Volume= 1.063 af
Outflow = 1.04 cfs @ 12.53 hrs, Volume= 1.063 af, Atten= 92%, Lag= 27.7 min
Primary = 1.04 cfs @ 12.53 hrs, Volume= 1.063 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.27' @ 14.34 hrs Surf.Area= 10,025 sf Storage= 19,822 cf
Flood Elev= 106.00' Surf.Area= 33,480 sf Storage= 105,292 cf

Plug-Flow detention time= 340.3 min calculated for 1.062 af (100% of inflow)
Center-of-Mass det. time= 340.5 min (1,153.5 - 813.0)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	105,292 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	0	0	0
99.00	483	121	121
100.00	5,808	3,146	3,266
101.00	6,872	6,340	9,606
102.00	8,510	7,691	17,297
103.00	14,070	11,290	28,587
104.00	24,830	19,450	48,037
105.00	28,100	26,465	74,502
106.00	33,480	30,790	105,292

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.30' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 4.91 sf
#2	Device 1	98.50'	**0.5" x 58.8" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	103.40'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	104.70'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	105.40'	**174.0 deg x 5.0' long x 0.40' rise Sharp-Crested Vee/Trap Weir** Cv= 2.46 (C= 3.08)

Primary OutFlow Max=1.04 cfs @ 12.53 hrs HW=102.04' TW=100.83' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.04 cfs of 26.03 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.04 cfs @ 5.30 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond 107P: CB107 TO HW106

Inflow Area = 0.682 ac, 86.11% Impervious, Inflow Depth = 2.64" for 2 YR event
Inflow = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af
Outflow = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.73' @ 12.07 hrs
Flood Elev= 106.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.90'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.90' / 100.80' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=2.05 cfs @ 12.07 hrs HW=101.72' TW=100.12' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.05 cfs @ 3.38 fps)

Summary for Pond 108P: CB108 TO CB107

Inflow Area = 0.465 ac, 84.37% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af
Outflow = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af
Routed to Pond 107P : CB107 TO HW106

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.21' @ 12.07 hrs
Flood Elev= 106.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.55'	**15.0" Round Culvert** L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.55' / 101.00' S= 0.0052 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.38 cfs @ 12.07 hrs HW=102.21' TW=101.72' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.38 cfs @ 3.05 fps)

Summary for Pond 148GP: CB1+48G TO CB1+48R

Inflow Area = 0.563 ac, 16.32% Impervious, Inflow Depth = 0.03" for 2 YR event
Inflow = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af
Routed to Pond 148RP : CB1+48R TO CB3+04R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.47' @ 16.90 hrs
Flood Elev= 130.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.45'	**15.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.45' / 126.35' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 16.90 hrs HW=126.47' TW=126.29' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.00 cfs @ 0.49 fps)

Summary for Pond 148RP: CB1+48R TO CB3+04R

[80] Warning: Exceeded Pond 148GP by 0.01' @ 12.07 hrs (0.00 cfs 0.000 af)

Inflow Area = 0.662 ac, 24.48% Impervious, Inflow Depth = 0.24" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Routed to Pond 304RP : CB3+04R TO CB4+01G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.46' @ 12.07 hrs
Flood Elev= 132.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.25'	**15.0" Round Culvert** L= 153.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.25' / 124.70' S= 0.0101 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=126.46' TW=125.05' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.24 fps)

Summary for Pond 205P: CB205 TO HW200

Inflow Area = 1.894 ac, 90.15% Impervious, Inflow Depth = 2.58" for 2 YR event
Inflow = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af
Outflow = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af, Atten= 0%, Lag= 0.0 min
Primary = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.59' @ 12.07 hrs
Flood Elev= 106.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.40'	**24.0" Round Culvert** L= 54.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.40' / 102.10' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=5.57 cfs @ 12.07 hrs HW=103.58' TW=100.81' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.57 cfs @ 4.13 fps)

Summary for Pond 206P: CB206 TO CB205

Inflow Area = 0.232 ac, 95.84% Impervious, Inflow Depth = 2.80" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af
Routed to Pond 205P : CB205 TO HW200

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.12' @ 12.07 hrs
Flood Elev= 108.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.70'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.70' / 103.15' S= 0.0110 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=104.12' TW=103.58' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.72 cfs @ 2.98 fps)

Summary for Pond 210P: CB210 TO CB205

Inflow Area = 1.174 ac, 87.38% Impervious, Inflow Depth = 2.45" for 2 YR event
Inflow = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af
Outflow = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Primary = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af
Routed to Pond 205P : CB205 TO HW200

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.25' @ 12.07 hrs
Flood Elev= 107.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.25'	**18.0" Round Culvert** L= 65.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.25' / 102.90' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.34 cfs @ 12.07 hrs HW=104.25' TW=103.58' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.34 cfs @ 3.79 fps)

Summary for Pond 215P: DCB215 TO CB210

Inflow Area = 0.997 ac, 89.58% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af
Outflow = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min
Primary = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af
Routed to Pond 210P : CB210 TO CB205

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.74' @ 12.07 hrs
Flood Elev= 108.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.75'	**18.0" Round Culvert** L= 75.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.75' / 103.35' S= 0.0053 '/' Cc= 0.900

n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=2.88 cfs @ 12.07 hrs HW=104.74' TW=104.25' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.88 cfs @ 3.31 fps)

Summary for Pond 220P: CB220 TO DCB215

Inflow Area = 0.345 ac, 95.13% Impervious, Inflow Depth = 2.69" for 2 YR event
Inflow = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af
Outflow = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af
Routed to Pond 215P : DCB215 TO CB210

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.10' @ 12.07 hrs
Flood Elev= 109.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.50'	**15.0" Round Culvert** L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.50' / 104.00' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.05 cfs @ 12.07 hrs HW=105.10' TW=104.74' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.05 cfs @ 2.62 fps)

Summary for Pond 303GP: CB3+03G TO CB3+04R

Inflow Area = 0.242 ac, 75.15% Impervious, Inflow Depth = 1.56" for 2 YR event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af
Routed to Pond 304RP : CB3+04R TO CB4+01G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.45' @ 12.07 hrs
Flood Elev= 130.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.10'	**15.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.10' / 124.70' S= 0.0233 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.46 cfs @ 12.07 hrs HW=126.45' TW=125.05' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.46 cfs @ 1.60 fps)

Summary for Pond 304RP: CB3+04R TO CB4+01G

Inflow Area = 1.023 ac, 39.60% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Routed to Pond 402GP : CB4+02G TO CB4+19R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.05' @ 12.07 hrs
Flood Elev= 129.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	124.60'	**15.0" Round Culvert** L= 94.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 124.60' / 122.75' S= 0.0197 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=125.05' TW=123.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.72 cfs @ 1.81 fps)

Summary for Pond 305P: CB305 TO HW300

Inflow Area = 8.737 ac, 28.45% Impervious, Inflow Depth = 0.54" for 2 YR event
Inflow = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af
Outflow = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af, Atten= 0%, Lag= 0.0 min
Primary = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.40' @ 12.07 hrs
Flood Elev= 107.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.25'	**24.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.25' / 103.15' S= 0.0062 '/' Cc= 0.900 n= 0.009, Flow Area= 3.14 sf

Primary OutFlow Max=5.13 cfs @ 12.07 hrs HW=104.40' TW=100.83' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.13 cfs @ 3.94 fps)

Summary for Pond 310P: CB310 TO CB305

Inflow Area = 8.555 ac, 27.26% Impervious, Inflow Depth = 0.51" for 2 YR event
Inflow = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af
Outflow = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af
Routed to Pond 305P : CB305 TO HW300

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 104.72' @ 12.07 hrs
Flood Elev= 107.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.50'	**24.0" Round Culvert** L= 28.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.50' / 103.35' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=4.63 cfs @ 12.07 hrs HW=104.72' TW=104.40' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.63 cfs @ 3.30 fps)

Summary for Pond 315P: CB315 TO CB310

Inflow Area = 5.215 ac, 36.98% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af
Outflow = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af
Routed to Pond 310P : CB310 TO CB305

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.23' @ 12.07 hrs
Flood Elev= 109.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.00'	**18.0" Round Culvert** L= 185.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.00' / 104.00' S= 0.0054 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.63 cfs @ 12.07 hrs HW=106.23' TW=104.72' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.63 cfs @ 2.98 fps)

Summary for Pond 316P: CB316 TO CB315

Inflow Area = 0.087 ac, 88.61% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af
Routed to Pond 315P : CB315 TO CB310

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.24' @ 12.07 hrs
Flood Elev= 109.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.40'	**15.0" Round Culvert** L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.40' / 105.25' S= 0.0063 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.25 cfs @ 12.07 hrs HW=106.24' TW=106.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.25 cfs @ 0.29 fps)

Summary for Pond 320P: CB320 TO CB315

[80] Warning: Exceeded Pond 3200P by 0.03' @ 12.03 hrs (0.15 cfs 0.001 af)

Inflow Area = 2.458 ac, 67.94% Impervious, Inflow Depth = 1.59" for 2 YR event
Inflow = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af
Outflow = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af
Routed to Pond 315P : CB315 TO CB310

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.64' @ 12.07 hrs
Flood Elev= 112.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.45'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.45' / 105.10' S= 0.0110 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.38 cfs @ 12.07 hrs HW=108.64' TW=106.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.38 cfs @ 2.93 fps)

Summary for Pond 320Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=595)

Inflow Area = 0.009 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.03 cfs @ 12.07 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.08 hrs, Volume= 0.002 af, Atten= 10%, Lag= 0.9 min
Discarded = 0.03 cfs @ 12.08 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.86' @ 12.10 hrs Surf.Area= 379 sf Storage= 1 cf
Flood Elev= 112.85' Surf.Area= 379 sf Storage= 38 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (755.7 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	111.85'	38 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.85	379	0.0	0	0
112.85	379	10.0	38	38

Device	Routing	Invert	Outlet Devices
#1	Discarded	111.85'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.08 hrs HW=111.86' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond 321P: CB321 TO CB320

Inflow Area = 1.360 ac, 63.43% Impervious, Inflow Depth = 1.41" for 2 YR event
Inflow = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af
Outflow = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min
Primary = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.00' @ 12.07 hrs
Flood Elev= 116.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.17'	**15.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 112.17' / 109.40' S= 0.0243 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.12 cfs @ 12.07 hrs HW=113.00' TW=108.64' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.12 cfs @ 2.45 fps)

Summary for Pond 321Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.010 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.03 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.65' @ 12.09 hrs Surf.Area= 456 sf Storage= 0 cf
Flood Elev= 117.65' Surf.Area= 456 sf Storage= 46 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	116.65'	46 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.65	456	0.0	0	0
117.65	456	10.0	46	46

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=116.65' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond 322P: CB323 TO CB322

Inflow Area = 1.222 ac, 62.85% Impervious, Inflow Depth = 1.34" for 2 YR event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Outflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Routed to Pond 321P : CB321 TO CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.63' @ 12.07 hrs
Flood Elev= 125.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	117.87'	**15.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 117.87' / 112.27' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.82 cfs @ 12.07 hrs HW=118.63' TW=113.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.82 cfs @ 2.34 fps)

Summary for Pond 323P: CB324 to CB323

Inflow Area = 1.124 ac, 68.31% Impervious, Inflow Depth = 1.46" for 2 YR event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Outflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Routed to Pond 322P : CB323 TO CB322

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 121.82' @ 12.07 hrs
Flood Elev= 127.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.06'	**15.0" Round Culvert** L= 37.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.06' / 120.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.82 cfs @ 12.07 hrs HW=121.82' TW=118.63' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.82 cfs @ 2.34 fps)

Summary for Pond 323Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.25' @ 12.09 hrs Surf.Area= 498 sf Storage= 0 cf
Flood Elev= 130.25' Surf.Area= 498 sf Storage= 50 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.25'	50 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.25	498	0.0	0	0
130.25	498	10.0	50	50

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.25'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=129.25' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond 324P: CB325 to CB324

Inflow Area = 0.997 ac, 68.51% Impervious, Inflow Depth = 1.40" for 2 YR event
Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af
Outflow = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min
Primary = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af
Routed to Pond 323P : CB324 to CB323

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 122.39' @ 12.07 hrs
Flood Elev= 132.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.73'	**15.0" Round Culvert** L= 57.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.73' / 121.16' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.56 cfs @ 12.07 hrs HW=122.39' TW=121.82' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.56 cfs @ 3.43 fps)

Summary for Pond 325P: CB326 TO CB325

Inflow Area = 0.946 ac, 66.82% Impervious, Inflow Depth = 1.32" for 2 YR event
Inflow = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af
Routed to Pond 324P : CB325 to CB324

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.25' @ 12.07 hrs
Flood Elev= 130.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.60'	**15.0" Round Culvert** L= 67.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.60' / 121.83' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.40 cfs @ 12.07 hrs HW=123.25' TW=122.39' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.40 cfs @ 2.17 fps)

Summary for Pond 326P: CB327 TO CB326

Inflow Area = 0.908 ac, 65.42% Impervious, Inflow Depth = 1.25" for 2 YR event
Inflow = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af
Outflow = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af
Routed to Pond 325P : CB326 TO CB325

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 124.42' @ 12.07 hrs
Flood Elev= 128.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.80'	**15.0" Round Culvert** L= 120.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.80' / 122.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.28 cfs @ 12.07 hrs HW=124.42' TW=123.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.28 cfs @ 2.11 fps)

Summary for Pond 326Pa: Porous Walk

Inflow Area = 0.041 ac, 44.21% Impervious, Inflow Depth = 0.57" for 2 YR event
Inflow = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af
Outflow = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 127.95' @ 0.00 hrs Surf.Area= 790 sf Storage= 0 cf
Flood Elev= 128.95' Surf.Area= 790 sf Storage= 79 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (896.0 - 896.0)

Volume	Invert	Avail.Storage	Storage Description
#1	127.95'	79 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.95	790	0.0	0	0
128.95	790	10.0	79	79

Device	Routing	Invert	Outlet Devices
#1	Discarded	127.95'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=127.95' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.05 cfs potential flow)

Summary for Pond 326Pb: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.001 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.05' @ 12.09 hrs Surf.Area= 57 sf Storage= 0 cf
Flood Elev= 130.05' Surf.Area= 57 sf Storage= 6 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.05'	6 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.05	57	0.0	0	0
130.05	57	10.0	6	6

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.05'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=129.05' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.00 cfs)

Summary for Pond 326Pc: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.001 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.65' @ 12.09 hrs Surf.Area= 53 sf Storage= 0 cf
Flood Elev= 129.65' Surf.Area= 53 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.65'	5 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.65	53	0.0	0	0
130.65	53	10.0	5	5

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=129.65' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Summary for Pond 330P: CB330 T0 CB320

Inflow Area = 0.944 ac, 78.00% Impervious, Inflow Depth = 1.90" for 2 YR event
Inflow = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af
Outflow = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min
Primary = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.51' @ 12.07 hrs
Flood Elev= 113.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.70'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.70' / 107.70' S= 0.0286 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=2.04 cfs @ 12.07 hrs HW=109.51' TW=108.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.04 cfs @ 2.42 fps)

Summary for Pond 330Pa: Porous Walk

Inflow Area = 0.010 ac, 41.33% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.25' @ 0.00 hrs Surf.Area= 186 sf Storage= 0 cf
Flood Elev= 115.25' Surf.Area= 186 sf Storage= 19 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (905.5 - 905.5)

Volume	Invert	Avail.Storage	Storage Description
#1	114.25'	19 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.25	186	0.0	0	0
115.25	186	10.0	19	19

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.25'	**5.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.10 hrs HW=114.25' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.02 cfs potential flow)

Summary for Pond 330Pb: Porous Walk

Inflow Area = 0.005 ac, 39.91% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 112.65' @ 0.00 hrs Surf.Area= 87 sf Storage= 0 cf
Flood Elev= 113.65' Surf.Area= 87 sf Storage= 9 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (905.5 - 905.5)

Volume	Invert	Avail.Storage	Storage Description
#1	112.65'	9 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.65	87	0.0	0	0
113.65	87	10.0	9	9

Device	Routing	Invert	Outlet Devices
#1	Discarded	112.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.10 hrs HW=112.65' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)

Summary for Pond 331P: CB331 TO CB330

Inflow Area = 0.413 ac, 67.48% Impervious, Inflow Depth = 1.51" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Routed to Pond 330P : CB330 T0 CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.49' @ 12.07 hrs
Flood Elev= 117.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	110.02'	**15.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.02' / 109.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=110.49' TW=109.51' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.72 cfs @ 2.52 fps)

Summary for Pond 331Pa: Porous Walk

Inflow Area = 0.025 ac, 44.83% Impervious, Inflow Depth = 0.57" for 2 YR event
Inflow = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.25' @ 0.00 hrs Surf.Area= 486 sf Storage= 0 cf
Flood Elev= 117.25' Surf.Area= 486 sf Storage= 49 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (896.0 - 896.0)

Volume	Invert	Avail.Storage	Storage Description
#1	116.25'	49 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.25	486	0.0	0	0
117.25	486	10.0	49	49

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.25'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=116.25' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 0.03 cfs potential flow)

Summary for Pond 332P: CB332 to CB331

Inflow Area = 0.039 ac, 74.75% Impervious, Inflow Depth = 1.56" for 2 YR event
Inflow = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af
Outflow = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af
Routed to Pond 331P : CB331 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.09' @ 12.07 hrs
Flood Elev= 115.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	110.95'	**15.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.95' / 110.12' S= 0.0166 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.07 cfs @ 12.07 hrs HW=111.09' TW=110.49' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.07 cfs @ 1.00 fps)

Summary for Pond 332Pa: Porous Walk

Inflow Area = 0.035 ac, 62.19% Impervious, Inflow Depth = 1.11" for 2 YR event
Inflow = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af
Outflow = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.35' @ 12.08 hrs Surf.Area= 949 sf Storage= 0 cf
Flood Elev= 117.35' Surf.Area= 949 sf Storage= 95 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (855.5 - 855.5)

Volume	Invert	Avail.Storage	Storage Description
#1	116.35'	95 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.35	949	0.0	0	0
117.35	949	10.0	95	95

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.35'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 12.08 hrs HW=116.35' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.07 cfs)

Summary for Pond 333P: CB333 TO CB331

Inflow Area = 0.145 ac, 67.26% Impervious, Inflow Depth = 1.96" for 2 YR event
Inflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Outflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Routed to Pond 331P : CB331 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.01' @ 12.07 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.72'	**15.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 112.72' / 110.12' S= 0.0193 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.31 cfs @ 12.07 hrs HW=113.01' TW=110.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.31 cfs @ 1.44 fps)

Summary for Pond 333Pa: Porous Walk

Inflow Area = 0.023 ac, 32.34% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 128.65' @ 0.00 hrs Surf.Area= 325 sf Storage= 0 cf
Flood Elev= 129.65' Surf.Area= 325 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (934.7 - 934.7)

Volume	Invert	Avail.Storage	Storage Description
#1	128.65'	33 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.65	325	0.0	0	0
129.65	325	10.0	33	33

Device	Routing	Invert	Outlet Devices
#1	Discarded	128.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.13 hrs HW=128.65' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.02 cfs potential flow)

Summary for Pond 335P: CB335 TO CB330

Inflow Area = 0.456 ac, 84.86% Impervious, Inflow Depth = 2.13" for 2 YR event
Inflow = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af
Outflow = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af
Routed to Pond 330P : CB330 T0 CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.37' @ 12.07 hrs
Flood Elev= 114.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.80'	**15.0" Round Culvert** L= 29.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 109.80' / 108.80' S= 0.0345 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.10 cfs @ 12.07 hrs HW=110.37' TW=109.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 2.03 fps)

Summary for Pond 340P: CB340TO CB335

Inflow Area = 0.358 ac, 90.90% Impervious, Inflow Depth = 2.41" for 2 YR event
Inflow = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af
Outflow = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af
Routed to Pond 335P : CB335 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.93' @ 12.07 hrs
Flood Elev= 116.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.40'	**15.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 111.40' / 110.30' S= 0.0355 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.97 cfs @ 12.07 hrs HW=111.93' TW=110.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.97 cfs @ 1.96 fps)

Summary for Pond 345P: DMH345 TO CB340

Inflow Area = 0.298 ac, 94.53% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Routed to Pond 340P : CB340TO CB335

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.10' @ 12.07 hrs
Flood Elev= 120.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.60'	**15.0" Round Culvert** L= 59.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.60' / 111.50' S= 0.0356 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 12.07 hrs HW=114.10' TW=111.93' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.86 cfs @ 1.90 fps)

Summary for Pond 350P: CB350 TO DMH345

Inflow Area = 0.298 ac, 94.53% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Routed to Pond 345P : DMH345 TO CB340

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 119.10' @ 12.07 hrs
Flood Elev= 125.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.60'	**15.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.60' / 116.40' S= 0.0344 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 12.07 hrs HW=119.10' TW=114.10' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.86 cfs @ 1.90 fps)

Summary for Pond 351P: CB351 TO CB350

Inflow Area = 0.060 ac, 93.15% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af
Routed to Pond 350P : CB350 TO DMH345

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 120.71' @ 12.07 hrs
Flood Elev= 125.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	120.50'	**15.0" Round Culvert** L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 120.50' / 120.35' S= 0.0063 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=120.71' TW=119.10' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.24 fps)

Summary for Pond 355P: DMH355 TO CB350

Inflow Area = 0.166 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Routed to Pond 350P : CB350 TO DMH345

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 124.18' @ 12.07 hrs
Flood Elev= 132.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.80'	**15.0" Round Culvert** L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.80' / 120.85' S= 0.0351 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.52 cfs @ 12.07 hrs HW=124.18' TW=119.10' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.52 cfs @ 1.66 fps)

Summary for Pond 360P: CB360 TO DMH355

Inflow Area = 0.166 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Routed to Pond 355P : DMH355 TO CB350

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 131.68' @ 12.07 hrs
Flood Elev= 136.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	131.30'	**15.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 131.30' / 128.00' S= 0.0347 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.52 cfs @ 12.07 hrs HW=131.68' TW=124.18' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.52 cfs @ 1.66 fps)

Summary for Pond 365P: CB365 TO CB360

Inflow Area = 0.085 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Routed to Pond 360P : CB360 TO DMH355

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 132.92' @ 12.07 hrs
Flood Elev= 137.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.65'	**15.0" Round Culvert** L= 36.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.65' / 132.45' S= 0.0056 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.27 cfs @ 12.07 hrs HW=132.92' TW=131.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.27 cfs @ 1.39 fps)

Summary for Pond 402GP: CB4+02G TO CB4+19R

Inflow Area = 5.534 ac, 16.63% Impervious, Inflow Depth = 0.12" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af
Routed to Pond 419RP : CB4+19R TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.19' @ 12.08 hrs
Flood Elev= 128.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.65'	**15.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.65' / 122.50' S= 0.0058 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=123.19' TW=123.01' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.72 cfs @ 2.11 fps)

Summary for Pond 405P: CB405 TO HW400

Inflow Area = 0.848 ac, 84.53% Impervious, Inflow Depth = 2.61" for 2 YR event
Inflow = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af
Outflow = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min
Primary = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.11' @ 12.07 hrs
Flood Elev= 106.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.25'	**18.0" Round Culvert** L= 33.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.25' / 101.05' S= 0.0061 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=2.53 cfs @ 12.07 hrs HW=102.11' TW=100.12' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.53 cfs @ 3.49 fps)

Summary for Pond 410P: DCB410 TO CB405

Inflow Area = 0.672 ac, 83.98% Impervious, Inflow Depth = 2.60" for 2 YR event
Inflow = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af
Outflow = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af
Routed to Pond 405P : CB405 TO HW400

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.90' @ 12.07 hrs
Flood Elev= 105.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.10'	**15.0" Round Culvert** L= 119.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.10' / 101.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.00 cfs @ 12.07 hrs HW=102.90' TW=102.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.00 cfs @ 3.42 fps)

Summary for Pond 415P: CB415 TO CB410

Inflow Area = 0.288 ac, 80.11% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af
Routed to Pond 410P : DCB410 TO CB405

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 103.09' @ 12.07 hrs
Flood Elev= 105.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.47'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.47' / 102.20' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.83 cfs @ 12.07 hrs HW=103.09' TW=102.90' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.83 cfs @ 2.00 fps)

Summary for Pond 416P: CB416 TO CB415

Inflow Area = 0.169 ac, 80.88% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af
Outflow = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af
Routed to Pond 415P : CB415 TO CB410

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.28' @ 12.07 hrs
Flood Elev= 107.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.83'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.83' / 102.57' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.49 cfs @ 12.07 hrs HW=103.28' TW=103.09' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.49 cfs @ 1.82 fps)

Summary for Pond 419LP: CB4+19L TO DMH1001+25

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 100125P : DMH1001+25 TO DMH1003+11

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.73' @ 12.08 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**24.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.90' / 114.60' S= 0.0202 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=117.73' TW=108.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond 419RP: CB4+19R TO CB4+19L

Inflow Area = 6.154 ac, 19.85% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.01' @ 12.08 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.40'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.40' / 122.25' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.17 cfs @ 12.08 hrs HW=123.01' TW=117.73' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.17 cfs @ 2.86 fps)

Summary for Pond 505P: dmh505 TO HW500

Inflow Area = 2.525 ac, 40.36% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.19' @ 12.09 hrs
Flood Elev= 109.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.65'	**18.0" Round Culvert** L= 12.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.65' / 103.55' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=1.10 cfs @ 12.09 hrs HW=104.19' TW=100.95' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.10 cfs @ 2.82 fps)

Summary for Pond 507P: CB507 TO CB505

Inflow Area = 2.525 ac, 40.36% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Routed to Pond 505P : dmh505 TO HW500
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1AR : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.23' @ 12.09 hrs
Flood Elev= 110.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.70'	**18.0" Round Culvert** L= 151.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 104.70' / 103.75' S= 0.0063 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	107.20'	**12.0" Round Culvert** L= 97.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.20' / 105.00' S= 0.0227 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.10 cfs @ 12.09 hrs HW=105.23' TW=104.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 1.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=104.70' TW=87.70' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Pond 508P: CB508 TO CB507

Inflow Area = 2.449 ac, 38.51% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Routed to Pond 507P : CB507 TO CB505

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.47' @ 12.09 hrs
Flood Elev= 113.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.00'	**18.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.00' / 104.80' S= 0.0286 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.87 cfs @ 12.09 hrs HW=107.47' TW=105.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.87 cfs @ 1.84 fps)

Summary for Pond 509P: CB509 to CB508

Inflow Area = 2.449 ac, 38.51% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Routed to Pond 508P : CB508 TO CB507

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.81' @ 12.09 hrs
Flood Elev= 114.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.40'	**18.0" Round Culvert** L= 34.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 108.40' / 107.10' S= 0.0382 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.87 cfs @ 12.09 hrs HW=108.81' TW=107.47' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.87 cfs @ 2.19 fps)

Summary for Pond 600P: DETENTION BASIN OS605 TO HW600

Inflow Area = 7.611 ac, 46.30% Impervious, Inflow Depth = 1.32" for 2 YR event
Inflow = 7.45 cfs @ 12.09 hrs, Volume= 0.835 af
Outflow = 0.14 cfs @ 23.73 hrs, Volume= 0.421 af, Atten= 98%, Lag= 698.8 min
Primary = 0.14 cfs @ 23.73 hrs, Volume= 0.421 af
Routed to Reach 2R : REACH 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 97.50' Surf.Area= 27,329 sf Storage= 13,397 cf
Peak Elev= 98.58' @ 23.73 hrs Surf.Area= 29,649 sf Storage= 44,079 cf (30,683 cf above start)
Flood Elev= 101.00' Surf.Area= 37,948 sf Storage= 123,868 cf (110,472 cf above start)

Plug-Flow detention time= 2,468.6 min calculated for 0.113 af (14% of inflow)
Center-of-Mass det. time= 1,179.1 min (1,999.7 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.00'	123,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.00	26,258	0	0
97.50	27,329	13,397	13,397
98.00	28,384	13,928	27,325
98.50	29,477	14,465	41,790
99.00	30,585	15,016	56,806
100.00	32,796	31,691	88,496
101.00	37,948	35,372	123,868

Device	Routing	Invert	Outlet Devices
#1	Primary	96.20'	**24.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.20' / 96.00' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	97.50'	**0.5" W x 18.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	99.00'	**4.0" W x 9.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	99.80'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 23.73 hrs HW=98.58' TW=93.86' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.14 cfs of 16.01 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.14 cfs @ 3.33 fps)
—**3=Orifice/Grate** (Controls 0.00 cfs)
—**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 710P: CB710 TO HW700

Inflow Area = 1.321 ac, 84.62% Impervious, Inflow Depth = 2.56" for 2 YR event
Inflow = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af
Outflow = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af, Atten= 0%, Lag= 0.0 min
Primary = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.76' @ 12.07 hrs
Flood Elev= 108.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	99.80'	**18.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.80' / 99.20' S= 0.0055 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.89 cfs @ 12.07 hrs HW=100.76' TW=97.85' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.89 cfs @ 4.66 fps)

Summary for Pond 711P: CB711 TO CB710

Inflow Area = 0.100 ac, 88.02% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af
Routed to Pond 710P : CB710 TO HW700

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.45' @ 12.07 hrs
Flood Elev= 109.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.20'	**15.0" Round Culvert** L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.20' / 102.50' S= 0.0135 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.30 cfs @ 12.07 hrs HW=103.45' TW=100.76' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.30 cfs @ 1.70 fps)

Summary for Pond 715P: CB715 TO CB710

Inflow Area = 1.116 ac, 83.85% Impervious, Inflow Depth = 2.55" for 2 YR event
Inflow = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af
Outflow = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
Primary = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af
Routed to Pond 710P : CB710 TO HW700

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.23' @ 12.07 hrs
Flood Elev= 106.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.25'	**18.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.25' / 99.90' S= 0.0054 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.28 cfs @ 12.07 hrs HW=101.23' TW=100.76' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.28 cfs @ 3.82 fps)

Summary for Pond 720P: DCB720 TO CB715

Inflow Area = 1.040 ac, 85.46% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af
Outflow = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min
Primary = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af
Routed to Pond 715P : CB715 TO CB710

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.69' @ 12.07 hrs
Flood Elev= 105.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.70'	**18.0" Round Culvert** L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 100.70' / 100.35' S= 0.0066 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.09 cfs @ 12.07 hrs HW=101.69' TW=101.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.09 cfs @ 3.54 fps)

Summary for Pond 725P: CB725 TO DCB720

Inflow Area = 0.633 ac, 84.41% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af
Outflow = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min
Primary = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af
Routed to Pond 720P : DCB720 TO CB715

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.15' @ 12.07 hrs
Flood Elev= 104.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.40'	**15.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.40' / 100.95' S= 0.0060 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.88 cfs @ 12.07 hrs HW=102.15' TW=101.69' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.88 cfs @ 3.50 fps)

Summary for Pond 801P: HW801 TO HW800

Inflow Area = 4.947 ac, 48.40% Impervious, Inflow Depth = 1.23" for 2 YR event
Inflow = 6.43 cfs @ 12.07 hrs, Volume= 0.507 af
Outflow = 3.72 cfs @ 12.18 hrs, Volume= 0.502 af, Atten= 42%, Lag= 6.7 min
Primary = 3.72 cfs @ 12.18 hrs, Volume= 0.502 af
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.43' @ 12.18 hrs Surf.Area= 5,411 sf Storage= 3,062 cf
Flood Elev= 104.00' Surf.Area= 12,500 sf Storage= 28,835 cf

Plug-Flow detention time= 30.3 min calculated for 0.502 af (99% of inflow)
Center-of-Mass det. time= 24.1 min (833.4 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	28,835 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	20	0	0
101.00	2,660	1,340	1,340
102.00	9,110	5,885	7,225
104.00	12,500	21,610	28,835

Device	Routing	Invert	Outlet Devices
#1	Primary	100.40'	**15.0" Round Culvert** L= 65.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.40' / 99.00' S= 0.0215 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.72 cfs @ 12.18 hrs HW=101.43' TW=97.95' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.72 cfs @ 3.45 fps)

Summary for Pond 805P: CB805 TO HW802

Inflow Area = 1.483 ac, 90.81% Impervious, Inflow Depth = 2.57" for 2 YR event
Inflow = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af
Outflow = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
Primary = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af
Routed to Pond 801P : HW801 TO HW800

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.17' @ 12.07 hrs
Flood Elev= 105.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.10'	**18.0" Round Culvert** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.10' / 100.75' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.19 cfs @ 12.07 hrs HW=102.16' TW=101.27' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.19 cfs @ 4.38 fps)

Summary for Pond 806P: CB806 TO CB805

Inflow Area = 1.167 ac, 88.96% Impervious, Inflow Depth = 2.50" for 2 YR event
Inflow = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af
Outflow = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
Primary = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af
Routed to Pond 805P : CB805 TO HW802

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.80' @ 12.07 hrs
Flood Elev= 108.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.95'	**18.0" Round Culvert** L= 100.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.95' / 101.20' S= 0.0175 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.20 cfs @ 12.07 hrs HW=103.79' TW=102.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.20 cfs @ 3.13 fps)

Summary for Pond 807P: CB807 TO CB806

Inflow Area = 0.650 ac, 81.27% Impervious, Inflow Depth = 2.25" for 2 YR event
Inflow = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af
Outflow = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
Primary = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af
Routed to Pond 806P : CB806 TO CB805

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.85' @ 12.07 hrs
Flood Elev= 111.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.20'	**18.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.20' / 103.05' S= 0.0215 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=1.61 cfs @ 12.07 hrs HW=105.85' TW=103.79' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.61 cfs @ 2.17 fps)

Summary for Pond 808P: CB808 TO CB807

Inflow Area = 0.511 ac, 82.04% Impervious, Inflow Depth = 2.39" for 2 YR event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Outflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Routed to Pond 807P : CB807 TO CB806

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.73' @ 12.07 hrs
Flood Elev= 110.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.10'	**15.0" Round Culvert** L= 128.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.10' / 105.45' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.32 cfs @ 12.07 hrs HW=106.73' TW=105.85' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.32 cfs @ 2.13 fps)

Summary for Pond 857LP: CB8+57L TO CB4+19L

[80] Warning: Exceeded Pond 857RP by 0.04' @ 12.12 hrs (0.12 cfs 0.001 af)

Inflow Area = 3.229 ac, 37.66% Impervious, Inflow Depth = 0.44" for 2 YR event
Inflow = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af
Outflow = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 133.20' @ 12.08 hrs
Flood Elev= 137.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.65'	**15.0" Round Culvert** L= 439.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.65' / 122.25' S= 0.0237 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.02 cfs @ 12.08 hrs HW=133.20' TW=117.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.02 cfs @ 1.98 fps)

Summary for Pond 857RP: CB8+57R TO CB8+57L

Inflow Area = 0.734 ac, 20.90% Impervious, Inflow Depth = 0.14" for 2 YR event
Inflow = 0.02 cfs @ 12.43 hrs, Volume= 0.008 af
Outflow = 0.02 cfs @ 12.44 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.1 min
Primary = 0.02 cfs @ 12.44 hrs, Volume= 0.008 af
Routed to Pond 857LP : CB8+57L TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 133.17' @ 12.05 hrs
Flood Elev= 137.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.90'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.90' / 132.75' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.44 hrs HW=133.04' TW=133.03' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.02 cfs @ 0.44 fps)

Summary for Pond 900P: POND 900

Inflow Area = 26.604 ac, 27.89% Impervious, Inflow Depth = 0.28" for 2 YR event
Inflow = 6.72 cfs @ 12.08 hrs, Volume= 0.627 af
Outflow = 0.24 cfs @ 19.10 hrs, Volume= 0.554 af, Atten= 96%, Lag= 421.1 min
Discarded = 0.24 cfs @ 19.10 hrs, Volume= 0.554 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 41R : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 98.60' @ 19.10 hrs Surf.Area= 31,299 sf Storage= 18,162 cf
Flood Elev= 104.00' Surf.Area= 46,635 sf Storage= 227,944 cf

Plug-Flow detention time= 968.6 min calculated for 0.554 af (88% of inflow)
Center-of-Mass det. time= 910.1 min (1,769.2 - 859.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	227,944 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	29,679	0	0
100.00	35,118	64,797	64,797
102.00	40,697	75,815	140,612
104.00	46,635	87,332	227,944

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.00' S= 0.0200 '/' Cc= 0.900 n= 0.009, Flow Area= 4.91 sf
#2	Discarded	98.00'	**6.300 in/hr Exfiltration over Surface area above 98.00'** Excluded Surface area = 29,679 sf
#3	Device 1	99.60'	**1.0" W x 38.4" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.80'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.24 cfs @ 19.10 hrs HW=98.60' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.00' TW=98.00' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)
↑**3=Orifice/Grate** (Controls 0.00 cfs)
4=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 1000P: Sediment Forebay

Inflow Area = 2.680 ac, 15.99% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.02 cfs @ 15.37 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af, Atten= 0%, Lag= 1.3 min
Primary = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Routed to Pond 2168P : DMH 21+68R to DMH 22+41R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.50' @ 15.39 hrs Surf.Area= 1,397 sf Storage= 6 cf
Flood Elev= 114.50' Surf.Area= 3,367 sf Storage= 4,642 cf

Plug-Flow detention time= 5.6 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 5.4 min (1,102.0 - 1,096.5)

Volume	Invert	Avail.Storage	Storage Description
#1	111.50'	4,642 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.50	1,394	0	0
112.00	1,668	766	766
113.00	2,934	2,301	3,067
113.50	3,367	1,575	4,642

Device	Routing	Invert	Outlet Devices
#1	Primary	107.38'	**12.0" Round Culvert** L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 107.38' / 105.88' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	111.50'	**21.0" x 23.2" Horiz. Orifice/Grate X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 15.39 hrs HW=111.50' TW=105.85' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 7.20 cfs potential flow)
└─**2=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.22 fps)

Summary for Pond 1100P: Subsurface Detention SC-740 Chamber System #1

50 SC-740 Chambers

[92] Warning: Device #4 is above defined storage
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=266)

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.62" for 2 YR event
Inflow = 0.95 cfs @ 12.09 hrs, Volume= 0.089 af
Outflow = 0.13 cfs @ 11.98 hrs, Volume= 0.089 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.13 cfs @ 11.98 hrs, Volume= 0.089 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2210P : DMH 22+10R to DMH22+20R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs Surf.Area= 1,848 sf Storage= 1,137 cf
Flood Elev= 121.50' Surf.Area= 1,848 sf Storage= 3,966 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 81.2 min (969.8 - 888.6)

Volume	Invert	Avail.Storage	Storage Description
#1	116.30'	1,669 cf	**25.25'W x 73.20'L x 3.50'H Prismatoid** 6,469 cf Overall - 2,297 cf Embedded = 4,172 cf x 40.0% Voids
#2	116.80'	2,297 cf	**ADS_StormTech SC-740** x 50 Inside #1 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
		3,966 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.30'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	116.80'	**12.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.50'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#4	Device 2	120.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.13 cfs @ 11.98 hrs HW=116.35' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=116.30' TW=116.80' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1200P: Subsurface Detention SC-740 Chamber System #2

50 SC-740 Chambers

[92] Warning: Device #4 is above defined storage
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=327)

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.78" for 2 YR event
Inflow = 0.79 cfs @ 12.06 hrs, Volume= 0.079 af
Outflow = 0.13 cfs @ 11.95 hrs, Volume= 0.079 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.13 cfs @ 11.95 hrs, Volume= 0.079 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2495P : DMH24+95R TO DMH25+00

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.07 hrs Surf.Area= 1,848 sf Storage= 994 cf
Flood Elev= 113.90' Surf.Area= 1,848 sf Storage= 3,966 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 64.7 min (938.2 - 873.5)

Volume	Invert	Avail.Storage	Storage Description
#1	108.90'	1,669 cf	**25.25'W x 73.20'L x 3.50'H Prismatoid** 6,469 cf Overall - 2,297 cf Embedded = 4,172 cf x 40.0% Voids
#2	109.40'	2,297 cf	**ADS_StormTech SC-740** x 50 Inside #1 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
		3,966 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	108.90'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	109.40'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Device 2	112.10'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#4	Device 2	113.10'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.13 cfs @ 11.95 hrs HW=108.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.90' TW=109.40' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1295GP: CB12+95G TO CB12+95R

Inflow Area = 1.623 ac, 33.46% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af
Outflow = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af
Routed to Pond 1295RP : CB12+95R CB12+95L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 137.12' @ 12.37 hrs
Flood Elev= 141.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.90'	**15.0" Round Culvert** L= 11.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.90' / 136.80' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.18 cfs @ 12.39 hrs HW=137.12' TW=136.97' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.18 cfs @ 1.86 fps)

Summary for Pond 1295LP: CB12+95L TO CB8+57L

Inflow Area = 2.106 ac, 38.84% Impervious, Inflow Depth = 0.41" for 2 YR event
Inflow = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af
Outflow = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af
Routed to Pond 857LP : CB8+57L TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 136.78' @ 12.08 hrs
Flood Elev= 142.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.40'	**15.0" Round Culvert** L= 438.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.40' / 132.75' S= 0.0083 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.51 cfs @ 12.08 hrs HW=136.78' TW=133.19' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 1.65 fps)

Summary for Pond 1295RP: CB12+95R CB12+95L

Inflow Area = 1.920 ac, 36.25% Impervious, Inflow Depth = 0.34" for 2 YR event
Inflow = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af
Outflow = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af
Routed to Pond 1295LP : CB12+95L TO CB8+57L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 136.98' @ 12.32 hrs
Flood Elev= 142.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.70'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.70' / 136.50' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.32 hrs HW=136.98' TW=136.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.28 cfs @ 1.41 fps)

Summary for Pond 1643LP: CB16+43L TO CB16+43R

Inflow Area = 0.039 ac, 35.38% Impervious, Inflow Depth = 0.39" for 2 YR event
Inflow = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af
Routed to Pond 1643RP : CB16+43R TO CB17+85R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 137.70' @ 12.11 hrs
Flood Elev= 141.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	137.65'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 137.65' / 137.50' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.11 hrs HW=137.70' TW=136.33' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.01 cfs @ 0.94 fps)

Summary for Pond 1643RP: CB16+43R TO CB17+85R

Inflow Area = 0.228 ac, 50.91% Impervious, Inflow Depth = 0.76" for 2 YR event
Inflow = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af
Outflow = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 136.33' @ 12.12 hrs
Flood Elev= 141.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.10'	**12.0" Round Culvert** L= 143.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.10' / 131.15' S= 0.0346 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.17 cfs @ 12.12 hrs HW=136.33' TW=130.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.28 fps)

Summary for Pond 1785LP: CB17+85L TO CB17+85R

Inflow Area = 0.209 ac, 28.75% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af
Outflow = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 131.38' @ 12.35 hrs
Flood Elev= 135.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	131.30'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 131.30' / 131.15' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 12.35 hrs HW=131.38' TW=130.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.77 fps)

Summary for Pond 1785RP: CB17+85R TO DMH18+69

Inflow Area = 0.574 ac, 42.99% Impervious, Inflow Depth = 0.58" for 2 YR event
Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Routed to Pond 1869P : DMH18+69 TO CB19+28L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 130.29' @ 12.10 hrs
Flood Elev= 135.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	130.00'	**12.0" Round Culvert** L= 86.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 130.00' / 127.10' S= 0.0337 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=130.29' TW=127.26' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.45 fps)

Summary for Pond 1869P: DMH18+69 TO CB19+28L

Inflow Area = 0.574 ac, 42.99% Impervious, Inflow Depth = 0.58" for 2 YR event
Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 127.26' @ 12.10 hrs
Flood Elev= 132.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	127.00'	**12.0" Round Culvert** L= 55.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 127.00' / 125.10' S= 0.0345 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=127.26' TW=123.63' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.73 fps)

Summary for Pond 1928LP: CB19+28L TO CB19+79R

Inflow Area = 0.900 ac, 44.03% Impervious, Inflow Depth = 0.59" for 2 YR event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af
Routed to Pond 1979RP : CB19+79 TO CB21+73R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 123.63' @ 12.09 hrs
Flood Elev= 129.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.25'	**12.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.25' / 121.70' S= 0.0282 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=123.63' TW=121.95' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.46 cfs @ 1.67 fps)

Summary for Pond 1928RP: CB19+28R TO CB19+28L

Inflow Area = 0.143 ac, 51.15% Impervious, Inflow Depth = 0.75" for 2 YR event
Inflow = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.59' @ 12.07 hrs
Flood Elev= 129.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	125.40'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.40' / 125.25' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.12 cfs @ 12.07 hrs HW=125.59' TW=123.63' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.12 cfs @ 1.16 fps)

Summary for Pond 1979RP: CB19+79 TO CB21+73R

Inflow Area = 0.952 ac, 44.25% Impervious, Inflow Depth = 0.60" for 2 YR event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af
Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 121.95' @ 12.09 hrs
Flood Elev= 127.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.60'	**12.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 121.60' / 117.97' S= 0.0191 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.50 cfs @ 12.09 hrs HW=121.95' TW=118.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.50 cfs @ 2.02 fps)

Summary for Pond 2168P: DMH 21+68R to DMH 22+41R

Inflow Area = 2.680 ac, 15.99% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.85' @ 15.39 hrs
Flood Elev= 109.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.78'	**12.0" Round Culvert** L= 76.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 105.78' / 104.64' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 15.39 hrs HW=105.85' TW=104.66' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.91 fps)

Summary for Pond 2173LP: CB21+73L TO CB21+73R

Inflow Area = 0.431 ac, 40.92% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af
Outflow = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.70' @ 12.11 hrs
Flood Elev= 122.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.47'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.47' / 118.22' S= 0.0114 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.17 cfs @ 12.11 hrs HW=118.70' TW=118.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.28 fps)

Summary for Pond 2173RP: CB21+73R TO DMH21+95R

Inflow Area = 1.579 ac, 44.78% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Outflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Routed to Pond 2195P : DMH21+95R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.33' @ 12.10 hrs
Flood Elev= 122.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	117.87'	**18.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 117.87' / 116.80' S= 0.0357 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.85 cfs @ 12.10 hrs HW=118.33' TW=117.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.85 cfs @ 1.83 fps)

Summary for Pond 2182P: DCB 21+82R TO DMH 21+97R

Inflow Area = 0.140 ac, 52.35% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Routed to Pond 2197P : DMH 21+97R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs
Flood Elev= 120.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.90' / 116.80' S= 0.0100 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.04 hrs HW=117.12' TW=117.04' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.13 cfs @ 1.52 fps)

Summary for Pond 2195P: DMH21+95R TO Subsurface Detention

Inflow Area = 1.579 ac, 44.78% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Outflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Routed to Pond 1100P : Subsurface Detention SC-740 Chamber System #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 117.31' @ 13.55 hrs
Flood Elev= 123.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**24.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.85 cfs @ 12.10 hrs HW=117.29' TW=116.71' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.85 cfs @ 2.15 fps)

Summary for Pond 2197P: DMH 21+97R TO Subsurface Detention

Inflow Area = 0.140 ac, 52.35% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Routed to Pond 1100P : Subsurface Detention SC-740 Chamber System #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs
Flood Elev= 121.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.04 hrs HW=117.04' TW=116.49' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.13 cfs @ 1.34 fps)

Summary for Pond 2210P: DMH 22+10R to DMH22+20R

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2220P : DMH22+20R TO DMH22+41R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.80' @ 0.00 hrs
Flood Elev= 121.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**12.0" Round Culvert** L= 5.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.70' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=116.80' TW=108.60' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 2220P: DMH22+20R TO DMH22+41R

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.60' @ 0.00 hrs
Flood Elev= 121.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.60'	**12.0" Round Culvert** L= 53.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 108.60' / 104.64' S= 0.0747 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.60' TW=104.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2241: DMH 22+41R to DMH24+86R

Inflow Area = 4.757 ac, 32.95% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 2286P : DMH 22+86R to DMH24+78R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.09' @ 12.07 hrs
Flood Elev= 112.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.54'	**12.0" Round Culvert** L= 188.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.54' / 101.72' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=105.09' TW=102.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 2286P: DMH 22+86R to DMH24+78R

Inflow Area = 4.757 ac, 32.95% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 2478P : DMH24+78R to HW24+89R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 102.17' @ 12.07 hrs
Flood Elev= 105.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.62'	**12.0" Round Culvert** L= 54.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 101.62' / 100.81' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=102.17' TW=101.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 2440P: TD24+40R TO CB24+60R

Inflow Area = 0.034 ac, 42.82% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af
Outflow = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af
Routed to Pond 2460P : CB24+60R TO DMH24+85R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.97' @ 12.07 hrs
Flood Elev= 115.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.90'	**12.0" Round Culvert** L= 62.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 111.90' / 109.90' S= 0.0323 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 12.07 hrs HW=111.97' TW=110.06' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.71 fps)

Summary for Pond 2460LP: CB24+60L TO CB24+60R

Inflow Area = 0.611 ac, 47.56% Impervious, Inflow Depth = 0.66" for 2 YR event
Inflow = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af
Outflow = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af
Routed to Pond 2460RP : CB24+60R TO DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.69' @ 12.17 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.40'	**12.0" Round Culvert** L= 22.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 113.40' / 113.18' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.32 cfs @ 12.17 hrs HW=113.69' TW=113.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.32 cfs @ 2.54 fps)

Summary for Pond 2460P: CB24+60R TO DMH24+85R

Inflow Area = 0.190 ac, 68.67% Impervious, Inflow Depth = 1.38" for 2 YR event
Inflow = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af
Outflow = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af
Routed to Pond 2485P : DMH24+85R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.09' @ 12.02 hrs
Flood Elev= 113.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.80'	**12.0" Round Culvert** L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 109.80' / 109.50' S= 0.0107 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.35 cfs @ 12.02 hrs HW=110.09' TW=109.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.35 cfs @ 1.83 fps)

Summary for Pond 2460RP: CB24+60R TO DMH24+86R

Inflow Area = 0.931 ac, 48.88% Impervious, Inflow Depth = 0.69" for 2 YR event
Inflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Outflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Routed to Pond 2468P : DMH24+86R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.43' @ 12.11 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.08'	**12.0" Round Culvert** L= 58.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 113.08' / 109.50' S= 0.0617 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=113.43' TW=109.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.49 cfs @ 2.01 fps)

Summary for Pond 2468P: DMH24+86R TO Subsurface Detention

Inflow Area = 0.931 ac, 48.88% Impervious, Inflow Depth = 0.69" for 2 YR event
Inflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Outflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Routed to Pond 1200P : Subsurface Detention SC-740 Chamber System #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.05 hrs
Flood Elev= 117.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**24.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=109.77' TW=109.38' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.49 cfs @ 1.83 fps)

Summary for Pond 2474P: DMH24+74R TO DMH24+85R

Inflow Area = 0.098 ac, 43.00% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af
Outflow = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af
Routed to Pond 2485P : DMH24+85R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.01' @ 12.07 hrs
Flood Elev= 113.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.90' / 109.50' S= 0.0333 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 12.07 hrs HW=110.01' TW=109.70' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.05 cfs @ 1.10 fps)

Summary for Pond 2478P: DMH24+78R to HW24+89R

Inflow Area = 5.975 ac, 36.73% Impervious, Inflow Depth = 0.20" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 101.29' @ 12.07 hrs
Flood Elev= 103.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.71'	**12.0" Round Culvert** L= 14.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 100.71' / 100.50' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=101.29' TW=98.19' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.13 cfs @ 3.45 fps)

Summary for Pond 2485P: DMH24+85R TO Subsurface Detention

Inflow Area = 0.288 ac, 59.95% Impervious, Inflow Depth = 1.09" for 2 YR event
Inflow = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af
Outflow = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af
Routed to Pond 1200P : Subsurface Detention SC-740 Chamber System #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.07 hrs
Flood Elev= 114.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**24.0" Round Culvert** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=0.38 cfs @ 12.03 hrs HW=109.73' TW=109.10' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.38 cfs @ 1.73 fps)

Summary for Pond 2495P: DMH24+95R TO DMH25+00

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2505P : DMH24+82R to DMH24+78R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.40' @ 0.00 hrs
Flood Elev= 114.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.20' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=109.40' TW=103.60' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2505P: DMH24+82R to DMH24+78R

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2478P : DMH24+78R to HW24+89R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.60' @ 0.00 hrs
Flood Elev= 114.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.60'	**12.0" Round Culvert** L= 43.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.60' / 100.81' S= 0.0649 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=103.60' TW=100.71' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2625RP: DMH26+25R TO HW26+25

Inflow Area = 1.290 ac, 65.27% Impervious, Inflow Depth = 1.36" for 2 YR event
Inflow = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af
Outflow = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.52' @ 12.07 hrs
Flood Elev= 104.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.80'	**12.0" Round Culvert** L= 15.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 100.80' / 100.50' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.07 hrs HW=101.51' TW=98.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.73 cfs @ 2.88 fps)

Summary for Pond 2723P: DMH27+23R TO DMH26+25R

Inflow Area = 0.931 ac, 51.89% Impervious, Inflow Depth = 0.77" for 2 YR event
Inflow = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af
Outflow = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af
Routed to Pond 2625RP : DMH26+25R TO HW26+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.80' @ 12.10 hrs
Flood Elev= 106.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.40'	**12.0" Round Culvert** L= 93.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.40' / 100.90' S= 0.0161 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.63 cfs @ 12.10 hrs HW=102.80' TW=101.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.63 cfs @ 2.15 fps)

Summary for Pond 2723RP: TD27+23R TO DMH27+23R

Trench Drain will connect to service line between CB27+30R and DMH27+23R.

Inflow Area = 0.103 ac, 61.44% Impervious, Inflow Depth = 1.05" for 2 YR event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 2723P : DMH27+23R TO DMH26+25R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.77' @ 12.07 hrs
Flood Elev= 109.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.60'	**12.0" Round Culvert** L= 39.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.60' / 102.50' S= 0.0538 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.07 hrs HW=104.77' TW=102.79' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.13 cfs @ 1.41 fps)

Summary for Pond 2730LP: CB27+30L TO 27+30R

Inflow Area = 0.551 ac, 49.95% Impervious, Inflow Depth = 0.70" for 2 YR event
Inflow = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af
Outflow = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af
Routed to Pond 2730RP : CB27+30R TO DMH27+23R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.70' @ 12.15 hrs
Flood Elev= 113.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**12.0" Round Culvert** L= 22.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.18' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.16 hrs HW=109.70' TW=109.43' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.33 cfs @ 2.55 fps)

Summary for Pond 2730RP: CB27+30R TO DMH27+23R

Inflow Area = 0.828 ac, 50.70% Impervious, Inflow Depth = 0.73" for 2 YR event
Inflow = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af
Outflow = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af
Routed to Pond 2723P : DMH27+23R TO DMH26+25R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.44' @ 12.11 hrs
Flood Elev= 113.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.08'	**12.0" Round Culvert** L= 125.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.08' / 102.50' S= 0.0526 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.11 hrs HW=109.44' TW=102.80' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 2.03 fps)

Summary for Pond 3018GP: CB30+18G TO CB30+20L

Inflow Area = 16.325 ac, 22.50% Impervious, Inflow Depth = 0.21" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af
Routed to Pond 3020LP : CB30+20L TO CB30+20R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.21' @ 12.08 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.20'	**24.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.20' / 102.10' S= 0.0100 '/' Cc= 0.900

n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=103.21' TW=102.95' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 1.91 fps)

Summary for Pond 3020LP: CB30+20L TO CB30+20R

Inflow Area = 17.313 ac, 24.24% Impervious, Inflow Depth = 0.25" for 2 YR event
Inflow = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af
Outflow = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af, Atten= 0%, Lag= 0.0 min
Primary = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af
Routed to Pond 3020RP : CB30+20R TO HW29+63

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.96' @ 12.09 hrs
Flood Elev= 108.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.00'	**24.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.00' / 101.80' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.56 cfs @ 12.09 hrs HW=102.96' TW=102.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.56 cfs @ 3.52 fps)

Summary for Pond 3020RP: CB30+20R TO HW29+63

Inflow Area = 17.545 ac, 24.73% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af
Outflow = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af, Atten= 0%, Lag= 0.0 min
Primary = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.54' @ 12.09 hrs
Flood Elev= 108.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.70'	**24.0" Round Culvert** L= 135.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.70' / 100.50' S= 0.0089 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.89 cfs @ 12.09 hrs HW=102.54' TW=98.20' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.89 cfs @ 3.12 fps)

Summary for Pond 3200P: CB3200 TO CB320

Inflow Area = 0.081 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.63' @ 12.07 hrs
Flood Elev= 111.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.15'	**15.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.15' / 107.70' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 24.02 hrs HW=108.15' TW=107.55' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.00 cfs @ 0.05 fps)

Summary for Pond 100125P: DMH1001+25 TO DMH1003+11

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 100311P : DMH1003+11C TO CB30+18G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.33' @ 12.08 hrs
Flood Elev= 121.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.50'	**24.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.50' / 103.60' S= 0.0201 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=108.33' TW=104.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond 100311P: DMH1003+11C TO CB30+18G

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 3018GP : CB30+18G TO CB30+20L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 104.33' @ 12.08 hrs
Flood Elev= 108.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.50'	**24.0" Round Culvert** L= 130.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.50' / 102.30' S= 0.0092 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=104.33' TW=103.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond BMP-1: BMP-1 STORMTECH

DESIGN BY BOHLER
Add 0.705 feet to NAVD88 to get NGVD29 elevations.

Inflow Area = 0.958 ac, 78.01% Impervious, Inflow Depth = 2.20" for 2 YR event
Inflow = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af
Outflow = 0.96 cfs @ 12.22 hrs, Volume= 0.139 af, Atten= 68%, Lag= 13.5 min
Discarded = 0.01 cfs @ 8.35 hrs, Volume= 0.056 af
Primary = 0.95 cfs @ 12.22 hrs, Volume= 0.083 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.02' @ 12.22 hrs Surf.Area= 2,035 sf Storage= 3,466 cf

Plug-Flow detention time= 606.8 min calculated for 0.139 af (79% of inflow)
Center-of-Mass det. time= 529.2 min (1,326.5 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	102.55'	1,943 cf	**30.00'W x 67.82'L x 3.75'H Field A** 7,629 cf Overall - 2,773 cf Embedded = 4,856 cf x 40.0% Voids
#2A	103.05'	2,773 cf	**ADS_StormTech SC-800 +Cap** x 54 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 54 Chambers in 6 Rows Cap Storage= 3.4 cf x 2 x 6 rows = 41.0 cf
		4,716 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	102.55'	**0.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	103.05'	**12.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.05' / 102.85' S= 0.0182 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	104.85'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 8.35 hrs HW=102.59' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.95 cfs @ 12.22 hrs HW=105.02' TW=101.51' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.95 cfs of 4.59 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.95 cfs @ 1.37 fps)

Summary for Pond C3P: CBC3 to CB509

Inflow Area = 2.082 ac, 37.92% Impervious, Inflow Depth = 0.44" for 2 YR event
Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af
Outflow = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af
Routed to Pond 509P : CB509 to CB508

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.23' @ 12.09 hrs
Flood Elev= 119.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.90'	**18.0" Round Culvert** L= 183.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 113.90' / 108.50' S= 0.0295 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.70 cfs @ 12.09 hrs HW=114.23' TW=108.81' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.70 cfs @ 2.44 fps)

Summary for Pond C4P: CBC4 to CBC3

Inflow Area = 1.170 ac, 43.43% Impervious, Inflow Depth = 0.55" for 2 YR event
Inflow = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af
Outflow = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af
Routed to Pond C3P : CBC3 to CB509

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.46' @ 12.08 hrs
Flood Elev= 122.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.10'	**15.0" Round Culvert** L= 212.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.10' / 114.15' S= 0.0092 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.61 cfs @ 12.08 hrs HW=116.46' TW=114.23' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.61 cfs @ 2.05 fps)

Summary for Pond C5P: CBC5 to DMHC6

Inflow Area = 0.360 ac, 51.62% Impervious, Inflow Depth = 0.75" for 2 YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af
Routed to Pond C6P : DMHC6 to CBC4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.25' @ 12.08 hrs
Flood Elev= 123.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	**15.0" Round Culvert** L= 66.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 118.00' / 117.40' S= 0.0091 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=118.25' TW=117.14' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.28 cfs @ 2.43 fps)

Summary for Pond C6P: DMHC6 to CBC4

Inflow Area = 0.759 ac, 38.76% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af
Routed to Pond C4P : CBC4 to CBC3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.14' @ 12.08 hrs
Flood Elev= 122.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**15.0" Round Culvert** L= 32.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.90' / 116.20' S= 0.0219 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=117.14' TW=116.46' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.68 fps)

Summary for Pond C7P: CBC7 to DMHC6

Inflow Area = 0.400 ac, 27.18% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Routed to Pond C6P : DMHC6 to CBC4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 118.63' @ 12.37 hrs
Flood Elev= 127.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.55'	**15.0" Round Culvert** L= 189.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 118.55' / 117.00' S= 0.0082 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.37 hrs HW=118.63' TW=117.07' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.02 cfs @ 1.15 fps)

Summary for Pond C8P: CBC8 to CBC7

Inflow Area = 0.400 ac, 27.18% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Routed to Pond C7P : CBC7 to DMHC6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 119.07' @ 12.37 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.00'	**15.0" Round Culvert** L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 119.00' / 118.65' S= 0.0106 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.37 hrs HW=119.07' TW=118.63' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.02 cfs @ 1.25 fps)

Summary for Pond RD1Pa: RD1a TO CB327

Inflow Area = 0.120 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af
Outflow = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af
Routed to Pond 326P : CB327 TO CB326

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.34' @ 12.07 hrs
Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	**12.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.00' / 124.14' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.38 cfs @ 12.07 hrs HW=125.34' TW=124.42' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.38 cfs @ 1.58 fps)

Summary for Pond RD1Pb: RD1b to CB 324

Inflow Area = 0.085 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Routed to Pond 323P : CB324 to CB323

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.79' @ 12.07 hrs
Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.50'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.50' / 122.70' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.27 cfs @ 12.07 hrs HW=123.79' TW=121.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.27 cfs @ 1.44 fps)

Summary for Pond RD2Pa: RD2a to CB333

Inflow Area = 0.097 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Outflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Routed to Pond 333P : CB333 TO CB331

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.51' @ 12.07 hrs
Flood Elev= 115.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.20'	**12.0" Round Culvert** L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.20' / 112.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.31 cfs @ 12.07 hrs HW=113.51' TW=113.01' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.31 cfs @ 1.49 fps)

Summary for Pond RD2Pb: RD2b TO CB322

Inflow Area = 0.095 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af
Routed to Pond 321P : CB321 TO CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.50' @ 12.07 hrs
Flood Elev= 115.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.20'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.20' / 112.52' S= 0.0340 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 12.07 hrs HW=113.50' TW=113.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.30 cfs @ 1.48 fps)

Summary for Pond RD3P: RD3 TO CB808

Inflow Area = 0.419 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Outflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Routed to Pond 808P : CB808 TO CB807

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.20' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.50'	**12.0" Round Culvert** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.50' / 106.35' S= 0.0214 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.32 cfs @ 12.07 hrs HW=107.20' TW=106.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.32 cfs @ 2.25 fps)

Summary for Pond RD4P: RD4 TO CB807

Inflow Area = 0.012 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Routed to Pond 807P : CB807 TO CB806

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 108.10' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.00'	**12.0" Round Culvert** L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.00' / 106.50' S= 0.0441 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 12.07 hrs HW=108.10' TW=105.85' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.04 cfs @ 0.86 fps)

Summary for Pond RD5P: RD5 TO CB806

Inflow Area = 0.429 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af
Routed to Pond 806P : CB806 TO CB805

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.71' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.00'	**12.0" Round Culvert** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.00' / 103.45' S= 0.0567 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.35 cfs @ 12.07 hrs HW=106.71' TW=103.79' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.35 cfs @ 2.26 fps)

Summary for Pond RD6P: RD6 TO CB805

Inflow Area = 0.222 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af
Routed to Pond 805P : CB805 TO HW802

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.48' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 101.60' S= 0.0233 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.07 hrs HW=103.48' TW=102.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.70 cfs @ 1.87 fps)

Summary for Pond RD8P: RD8 TO CB107

Inflow Area = 0.053 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Routed to Pond 107P : CB107 TO HW106

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.05' @ 12.07 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.80'	**8.0" Round Culvert** L= 28.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.80' / 101.50' S= 0.0107 '/' Cc= 0.900 n= 0.009, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=102.05' TW=101.72' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.36 fps)

Summary for Pond RD9P: RD9 TO CB405

Inflow Area = 0.036 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 405P : CB405 TO HW400

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.51' @ 12.07 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.30'	**8.0" Round Culvert** L= 32.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.30' / 102.00' S= 0.0094 '/' Cc= 0.900 n= 0.009, Flow Area= 0.35 sf

Primary OutFlow Max=0.11 cfs @ 12.07 hrs HW=102.51' TW=102.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.11 cfs @ 1.23 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.45"
Flow Length=928' Tc=34.5 min CN=47 Runoff=0.40 cfs 0.100 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=1.35"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.54 cfs 0.045 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=2.58"
Flow Length=645' Tc=9.0 min CN=79 Runoff=11.03 cfs 0.869 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=2.00"
Flow Length=416' Tc=9.0 min CN=72 Runoff=3.66 cfs 0.293 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.01"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.02 cfs 0.008 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.49"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=8.26 cfs 1.939 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=1.48"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=1.13 cfs 0.137 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.45"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.68 cfs 0.131 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.05"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.02 cfs 0.013 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=1.85"
Tc=5.0 min CN=70 Runoff=2.15 cfs 0.151 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.93 cfs 0.064 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=0.74"
Tc=5.0 min CN=53 Runoff=0.25 cfs 0.025 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.75 cfs 0.053 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.32 cfs 0.103 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=0.78 cfs 0.059 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=2.17 cfs 0.161 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.32"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.07 cfs 0.015 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.33 cfs 0.023 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.09 cfs 0.086 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=2.32 cfs 0.178 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=1.10 cfs 0.085 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=3.73"
Tc=5.0 min CN=91 Runoff=0.77 cfs 0.055 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=3.94"
Tc=5.0 min CN=93 Runoff=2.95 cfs 0.214 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=1.63 cfs 0.123 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=0.27 cfs 0.019 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=2.94"
Tc=5.0 min CN=83 Runoff=0.86 cfs 0.059 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.25 cfs 0.018 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=3.84"
Tc=5.0 min CN=92 Runoff=0.81 cfs 0.058 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.45"
Flow Length=469' Tc=13.1 min CN=47 Runoff=0.66 cfs 0.125 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.15"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.06 cfs 0.034 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.40 cfs 0.029 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=0.34 cfs 0.026 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.18 cfs 0.014 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=2.16"
Tc=5.0 min CN=74 Runoff=2.05 cfs 0.142 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=65 Runoff=0.07 cfs 0.005 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.000 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.000 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.35 cfs 0.026 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=1.35"
Tc=5.0 min CN=63 Runoff=0.02 cfs 0.001 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=1.35"
Tc=5.0 min CN=63 Runoff=0.01 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=78 Runoff=0.70 cfs 0.048 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=65 Runoff=0.04 cfs 0.003 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=2.94"
Tc=5.0 min CN=83 Runoff=0.14 cfs 0.009 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.10 cfs 0.007 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=58 Runoff=0.02 cfs 0.002 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.28 cfs 0.019 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=2.85"
Tc=5.0 min CN=82 Runoff=0.21 cfs 0.014 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=3.42"
Tc=5.0 min CN=88 Runoff=0.29 cfs 0.021 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.27 cfs 0.020 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.39 cfs 0.030 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.089 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.25"
Flow Length=919' Tc=16.0 min CN=42 Runoff=0.27 cfs 0.093 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.65 cfs 0.048 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=1.81 cfs 0.137 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.55 cfs 0.040 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.77 cfs 0.057 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=2.16"
Tc=5.0 min CN=74 Runoff=1.93 cfs 0.133 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=1.70"
Tc=5.0 min CN=68 Runoff=1.23 cfs 0.088 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=3.73"
Tc=0.0 min CN=91 Runoff=4.88 cfs 0.298 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.86 cfs 0.061 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=0.97"
Tc=5.0 min CN=57 Runoff=0.88 cfs 0.074 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=1.41"
Tc=5.0 min CN=64 Runoff=0.59 cfs 0.043 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=1.28"
Tc=5.0 min CN=62 Runoff=1.90 cfs 0.143 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=2.23 cfs 0.155 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.49 cfs 0.036 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.47 cfs 0.035 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=3.63"
Tc=5.0 min CN=90 Runoff=0.33 cfs 0.023 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=1.89 cfs 0.141 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=2.95 cfs 0.220 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=67 Runoff=6.55 cfs 0.469 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=0.44 cfs 0.033 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=3.94"
Tc=5.0 min CN=93 Runoff=0.40 cfs 0.029 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=84 Runoff=0.47 cfs 0.032 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=1.10 cfs 0.075 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=51 Runoff=0.35 cfs 0.039 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.18"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.05 cfs 0.027 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=1.85"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.33 cfs 0.022 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=0.91"
Flow Length=466' Tc=10.6 min CN=56 Runoff=1.16 cfs 0.123 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=78 Runoff=0.56 cfs 0.039 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.62 cfs 0.044 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=1.15"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.05 cfs 0.004 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=1.92"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.40 cfs 0.030 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=0.91"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.16 cfs 0.016 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=1.77"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.30 cfs 0.020 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=1.41"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.28 cfs 0.022 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=1.77"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.31 cfs 0.021 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=1.62"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.10 cfs 0.007 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=1.35"
Flow Length=205' Tc=6.3 min CN=63 Runoff=0.62 cfs 0.048 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=2.00"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.44 cfs 0.033 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.72 cfs 0.135 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=1.41"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.06 cfs 0.004 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=1.62"
Flow Length=378' Tc=10.9 min CN=67 Runoff=0.94 cfs 0.083 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=1.77"
Flow Length=261' Tc=3.4 min CN=69 Runoff=0.71 cfs 0.047 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=2.94"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.63 cfs 0.038 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=1.41"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.16 cfs 0.012 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.72 cfs 0.135 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=2.24"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.28 cfs 0.019 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=1.70"
Flow Length=462' Tc=10.0 min CN=68 Runoff=0.92 cfs 0.078 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=1.85"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.63 cfs 0.043 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.36"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=0.70 cfs 0.188 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=1.85"
Flow Length=349' Tc=10.3 min CN=70 Runoff=1.80 cfs 0.152 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=2.49"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.67 cfs 0.048 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.58 cfs 0.045 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.47 cfs 0.037 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.46 cfs 0.036 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=2.01 cfs 0.157 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.004 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=2.06 cfs 0.161 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.07 cfs 0.083 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.014 af

Reach 1AR: STREAM Avg. Flow Depth=0.63' Max Vel=3.22 fps Inflow=11.68 cfs 3.544 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=11.40 cfs 3.544 af

Reach 1BR: STREAM Avg. Flow Depth=0.31' Max Vel=2.39 fps Inflow=3.66 cfs 0.293 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=3.55 cfs 0.293 af

Reach 1R: STREAM Avg. Flow Depth=0.86' Max Vel=2.75 fps Inflow=14.95 cfs 3.837 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=14.46 cfs 3.836 af

Reach 2R: REACH 2 Avg. Flow Depth=0.12' Max Vel=0.96 fps Inflow=0.62 cfs 1.009 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.49 cfs 1.006 af

Reach 3R: REACH 3 Avg. Flow Depth=0.17' Max Vel=1.22 fps Inflow=1.13 cfs 0.137 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.10 cfs 0.137 af

Reach 4R: REACH 4 Avg. Flow Depth=0.09' Max Vel=0.58 fps Inflow=0.68 cfs 0.131 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.63 cfs 0.131 af

Reach 5R: REACH 5 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.020 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.03 cfs 0.020 af

Reach 6R: REACH 6 Avg. Flow Depth=0.11' Max Vel=0.57 fps Inflow=0.63 cfs 0.151 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.57 cfs 0.151 af

Reach 7R: STREAM Avg. Flow Depth=0.21' Max Vel=1.64 fps Inflow=1.52 cfs 0.288 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=1.52 cfs 0.288 af

Reach 8R: STREAM Avg. Flow Depth=0.24' Max Vel=1.68 fps Inflow=1.90 cfs 1.294 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=1.87 cfs 1.292 af

Reach 9R: STREAM Avg. Flow Depth=0.84' Max Vel=2.92 fps Inflow=15.02 cfs 5.128 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=14.99 cfs 5.127 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.47' Max Vel=5.30 fps Inflow=2.23 cfs 0.155 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.23 cfs 0.155 af

Reach 41R: REACH Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.00 cfs 0.000 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.28' Max Vel=1.63 fps Inflow=2.66 cfs 2.676 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=2.66 cfs 2.676 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.48' Inflow=15.70 cfs 7.067 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=15.70 cfs 7.067 af

Pond 11P: CB11 to CB12 Peak Elev=105.90' Inflow=1.32 cfs 0.103 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.32 cfs 0.103 af

Pond 12R: From CB12 out Peak Elev=105.69' Inflow=2.42 cfs 0.189 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=2.42 cfs 0.189 af

Pond 13P: CB13 to CB14 Peak Elev=107.24' Inflow=1.27 cfs 0.089 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.27 cfs 0.089 af

Pond 14P: CB14 to CB15 Peak Elev=106.25' Inflow=1.46 cfs 0.103 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.46 cfs 0.103 af

Pond 15P: CB15 out Peak Elev=105.21' Inflow=1.87 cfs 0.136 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.87 cfs 0.136 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.94' Storage=22,786 cf Inflow=9.20 cfs 2.713 af
Outflow=2.66 cfs 2.676 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=103.81' Storage=43,550 cf Inflow=27.09 cfs 2.113 af
Outflow=2.14 cfs 2.113 af

Pond 107P: CB107 TO HW106 Peak Elev=101.99' Inflow=3.19 cfs 0.240 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=3.19 cfs 0.240 af

Pond 108P: CB108 TO CB107 Peak Elev=102.46' Inflow=2.17 cfs 0.161 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=2.17 cfs 0.161 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.59' Inflow=0.07 cfs 0.015 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.07 cfs 0.015 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.55' Inflow=0.33 cfs 0.038 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.33 cfs 0.038 af

Pond 205P: CB205 TO HW200 Peak Elev=103.96' Inflow=8.77 cfs 0.655 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=8.77 cfs 0.655 af

Pond 206P: CB206 TO CB205 Peak Elev=104.31' Inflow=1.10 cfs 0.085 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.10 cfs 0.085 af

Pond 210P: CB210 TO CB205 Peak Elev=104.62' Inflow=5.34 cfs 0.392 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=5.34 cfs 0.392 af

Pond 215P: DCB215 TO CB210 Peak Elev=105.12' Inflow=4.57 cfs 0.337 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=4.57 cfs 0.337 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.39' Inflow=1.63 cfs 0.123 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=1.63 cfs 0.123 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.60' Inflow=0.86 cfs 0.059 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=0.86 cfs 0.059 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.26' Inflow=1.44 cfs 0.115 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=1.44 cfs 0.115 af

Pond 305P: CB305 TO HW300 Peak Elev=104.86' Inflow=8.99 cfs 0.820 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=8.99 cfs 0.820 af

Pond 310P: CB310 TO CB305 Peak Elev=105.25' Inflow=8.18 cfs 0.762 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=8.18 cfs 0.762 af

Pond 315P: CB315 TO CB310 Peak Elev=107.22' Inflow=8.15 cfs 0.637 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=8.15 cfs 0.637 af

Pond 316P: CB316 TO CB315 Peak Elev=107.23' Inflow=0.40 cfs 0.029 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.40 cfs 0.029 af

Pond 320P: CB320 TO CB315 Peak Elev=109.53' Inflow=7.76 cfs 0.574 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=7.76 cfs 0.574 af

Pond 320Pa: Porous Walk Peak Elev=112.03' Storage=7 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 321P: CB321 TO CB320 Peak Elev=113.50' Inflow=3.92 cfs 0.290 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=3.92 cfs 0.290 af

Pond 321Pa: Porous Walk Peak Elev=116.79' Storage=7 cf Inflow=0.05 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 322P: CB323 TO CB322 Peak Elev=119.04' Inflow=3.46 cfs 0.254 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=3.46 cfs 0.254 af

Pond 323P: CB324 to CB323 Peak Elev=122.23' Inflow=3.46 cfs 0.253 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=3.46 cfs 0.253 af

Pond 323Pa: Porous Walk Peak Elev=129.39' Storage=7 cf Inflow=0.05 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 324P: CB325 to CB324 Peak Elev=122.79' Inflow=3.05 cfs 0.220 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=3.05 cfs 0.220 af

Pond 325P: CB326 TO CB325 Peak Elev=123.60' Inflow=2.81 cfs 0.201 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=2.81 cfs 0.201 af

Pond 326P: CB327 TO CB326 Peak Elev=124.75' Inflow=2.63 cfs 0.187 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=2.63 cfs 0.187 af

Pond 326Pa: Porous Walk Peak Elev=128.00' Storage=4 cf Inflow=0.07 cfs 0.005 af
Outflow=0.05 cfs 0.005 af

Pond 326Pb: Porous Walk Peak Elev=129.19' Storage=1 cf Inflow=0.01 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 326Pc: Porous Walk Peak Elev=129.79' Storage=1 cf Inflow=0.01 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330P: CB330 T0 CB320 Peak Elev=110.10' Inflow=3.50 cfs 0.257 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=3.50 cfs 0.257 af

Pond 330Pa: Porous Walk Peak Elev=114.25' Storage=0 cf Inflow=0.02 cfs 0.001 af
Outflow=0.02 cfs 0.001 af

Pond 330Pb: Porous Walk Peak Elev=112.69' Storage=0 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=110.68' Inflow=1.30 cfs 0.094 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=1.30 cfs 0.094 af

Pond 331Pa: Porous Walk Peak Elev=116.29' Storage=2 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 332P: CB332 to CB331 Peak Elev=111.14' Inflow=0.14 cfs 0.009 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.14 cfs 0.009 af

Pond 332Pa: Porous Walk Peak Elev=116.46' Storage=11 cf Inflow=0.10 cfs 0.007 af
Outflow=0.07 cfs 0.007 af

Pond 333P: CB333 TO CB331 Peak Elev=113.08' Inflow=0.47 cfs 0.037 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.47 cfs 0.037 af

Pond 333Pa: Porous Walk Peak Elev=128.66' Storage=0 cf Inflow=0.02 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 335P: CB335 TO CB330 Peak Elev=110.56' Inflow=1.85 cfs 0.136 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=1.85 cfs 0.136 af

Pond 340P: CB340TO CB335 Peak Elev=112.10' Inflow=1.57 cfs 0.117 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=1.57 cfs 0.117 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.24' Inflow=1.36 cfs 0.103 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=1.36 cfs 0.103 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.24' Inflow=1.36 cfs 0.103 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=1.36 cfs 0.103 af

Pond 351P: CB351 TO CB350 Peak Elev=120.77' Inflow=0.27 cfs 0.020 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.27 cfs 0.020 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.28' Inflow=0.80 cfs 0.062 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=0.80 cfs 0.062 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.78' Inflow=0.80 cfs 0.062 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=0.80 cfs 0.062 af

Pond 365P: CB365 TO CB360 Peak Elev=132.98' Inflow=0.41 cfs 0.032 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.41 cfs 0.032 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=123.57' Inflow=1.44 cfs 0.208 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=1.44 cfs 0.208 af

Pond 405P: CB405 TO HW400 Peak Elev=102.37' Inflow=3.96 cfs 0.296 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=3.96 cfs 0.296 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.18' Inflow=3.13 cfs 0.234 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=3.13 cfs 0.234 af

Pond 415P: CB415 TO CB410 Peak Elev=103.35' Inflow=1.32 cfs 0.097 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=1.32 cfs 0.097 af

Pond 416P: CB416 TO CB415 Peak Elev=103.48' Inflow=0.77 cfs 0.057 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=0.77 cfs 0.057 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=118.36' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=7.95 cfs 0.749 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.41' Inflow=2.68 cfs 0.296 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=2.68 cfs 0.296 af

Pond 505P: dmh505 TO HW500 Peak Elev=104.74' Inflow=3.68 cfs 0.284 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=3.68 cfs 0.284 af

Pond 507P: CB507 TO CB505 Peak Elev=105.76' Inflow=3.68 cfs 0.284 af
Primary=3.68 cfs 0.284 af Secondary=0.00 cfs 0.000 af Outflow=3.68 cfs 0.284 af

Pond 508P: CB508 TO CB507 Peak Elev=107.99' Inflow=3.32 cfs 0.255 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=3.32 cfs 0.255 af

Pond 509P: CB509 to CB508 Peak Elev=109.26' Inflow=3.32 cfs 0.255 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=3.32 cfs 0.255 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.30' Storage=66,222 cf Inflow=12.92 cfs 1.564 af
Outflow=0.47 cfs 0.964 af

Pond 710P: CB710 TO HW700 Peak Elev=101.09' Inflow=6.12 cfs 0.455 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=6.12 cfs 0.455 af

Pond 711P: CB711 TO CB710 Peak Elev=103.52' Inflow=0.47 cfs 0.035 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.47 cfs 0.035 af

Pond 715P: CB715 TO CB710 Peak Elev=101.60' Inflow=5.17 cfs 0.384 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=5.17 cfs 0.384 af

Pond 720P: DCB720 TO CB715 Peak Elev=102.13' Inflow=4.84 cfs 0.361 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=4.84 cfs 0.361 af

Pond 725P: CB725 TO DCB720 Peak Elev=102.52' Inflow=2.95 cfs 0.220 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=2.95 cfs 0.220 af

Pond 801P: HW801 TO HW800 Peak Elev=101.98' Storage=7,045 cf Inflow=13.02 cfs 0.971 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=5.77 cfs 0.966 af

Pond 805P: CB805 TO HW802 Peak Elev=102.53' Inflow=6.50 cfs 0.502 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=6.50 cfs 0.502 af

Pond 806P: CB806 TO CB805 Peak Elev=104.05' Inflow=4.99 cfs 0.385 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=4.99 cfs 0.385 af

Pond 807P: CB807 TO CB806 Peak Elev=106.05' Inflow=2.54 cfs 0.195 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=2.54 cfs 0.195 af

Pond 808P: CB808 TO CB807 Peak Elev=106.90' Inflow=2.01 cfs 0.159 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=2.01 cfs 0.159 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=133.80' Inflow=3.41 cfs 0.320 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=3.41 cfs 0.320 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=133.81' Inflow=0.35 cfs 0.039 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.35 cfs 0.039 af

Pond 900P: POND 900 Peak Elev=99.59' Storage=50,639 cf Inflow=15.10 cfs 1.712 af
Discarded=0.63 cfs 1.500 af Primary=0.00 cfs 0.000 af Outflow=0.63 cfs 1.500 af

Pond 1000P: Sediment Forebay Peak Elev=111.53' Storage=44 cf Inflow=0.40 cfs 0.100 af
Outflow=0.39 cfs 0.100 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=119.65' Storage=3,857 cf Inflow=2.84 cfs 0.222 af
Discarded=0.13 cfs 0.188 af Primary=0.31 cfs 0.034 af Outflow=0.44 cfs 0.222 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=112.16' Storage=3,789 cf Inflow=2.06 cfs 0.183 af
Discarded=0.13 cfs 0.179 af Primary=0.05 cfs 0.005 af Outflow=0.18 cfs 0.183 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=137.63' Inflow=1.16 cfs 0.123 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=1.16 cfs 0.123 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=137.21' Inflow=2.04 cfs 0.206 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=2.04 cfs 0.206 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=137.48' Inflow=1.59 cfs 0.167 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=1.59 cfs 0.167 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.77' Inflow=0.05 cfs 0.004 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.05 cfs 0.004 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.47' Inflow=0.44 cfs 0.034 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.44 cfs 0.034 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.52' Inflow=0.16 cfs 0.016 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.16 cfs 0.016 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.54' Inflow=0.85 cfs 0.070 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=0.85 cfs 0.070 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.47' Inflow=0.85 cfs 0.070 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=0.85 cfs 0.070 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=123.98' Inflow=1.42 cfs 0.113 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=1.42 cfs 0.113 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.71' Inflow=0.31 cfs 0.021 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.31 cfs 0.021 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=122.26' Inflow=1.51 cfs 0.120 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=1.51 cfs 0.120 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=106.09' Inflow=0.39 cfs 0.100 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=0.39 cfs 0.100 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=119.66' Inflow=0.62 cfs 0.048 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=0.62 cfs 0.048 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=119.66' Inflow=2.57 cfs 0.201 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=2.57 cfs 0.201 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=119.65' Inflow=0.33 cfs 0.022 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.33 cfs 0.021 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=119.65' Inflow=2.57 cfs 0.201 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=2.57 cfs 0.201 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=119.65' Inflow=0.33 cfs 0.021 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.33 cfs 0.021 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=117.09' Inflow=0.31 cfs 0.034 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=0.31 cfs 0.034 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=108.87' Inflow=0.31 cfs 0.034 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=0.31 cfs 0.034 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=105.25' Inflow=1.72 cfs 0.269 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=1.72 cfs 0.269 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=102.33' Inflow=1.72 cfs 0.269 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=1.72 cfs 0.269 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=112.16' Inflow=0.06 cfs 0.004 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.06 cfs 0.004 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=113.97' Inflow=0.94 cfs 0.083 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.94 cfs 0.083 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=112.16' Inflow=0.68 cfs 0.042 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.68 cfs 0.042 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.71' Inflow=1.40 cfs 0.130 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=1.40 cfs 0.130 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=112.16' Inflow=1.40 cfs 0.130 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=1.40 cfs 0.130 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=112.16' Inflow=0.16 cfs 0.012 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.16 cfs 0.011 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=101.47' Inflow=1.72 cfs 0.273 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=1.72 cfs 0.273 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=112.16' Inflow=0.82 cfs 0.054 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=0.82 cfs 0.054 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=109.51' Inflow=0.05 cfs 0.005 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=0.05 cfs 0.005 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=103.71' Inflow=0.05 cfs 0.005 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=0.05 cfs 0.005 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=102.08' Inflow=3.33 cfs 0.274 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=3.33 cfs 0.274 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=103.09' Inflow=1.65 cfs 0.140 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=1.65 cfs 0.140 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.86' Inflow=0.28 cfs 0.019 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.28 cfs 0.019 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=109.96' Inflow=0.92 cfs 0.078 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.92 cfs 0.078 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.70' Inflow=1.39 cfs 0.121 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=1.39 cfs 0.121 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=104.28' Inflow=7.95 cfs 0.937 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=7.95 cfs 0.937 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=103.84' Inflow=9.45 cfs 1.089 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=9.45 cfs 1.089 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=103.16' Inflow=10.12 cfs 1.137 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=10.12 cfs 1.137 af

Pond 3200P: CB3200 TO CB320 Peak Elev=109.51' Inflow=0.00 cfs 0.001 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.00 cfs 0.001 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=108.96' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=7.95 cfs 0.749 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=105.06' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=7.95 cfs 0.749 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.34' Storage=3,862 cf Inflow=4.88 cfs 0.298 af
Discarded=0.01 cfs 0.058 af Primary=4.39 cfs 0.203 af Outflow=4.41 cfs 0.261 af

Pond C3P: CBC3 to CB509 Peak Elev=114.58' Inflow=2.73 cfs 0.212 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=2.73 cfs 0.212 af

Pond C4P: CBC4 to CBC3 Peak Elev=116.77' Inflow=1.85 cfs 0.138 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=1.85 cfs 0.138 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.42' Inflow=0.75 cfs 0.053 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=0.75 cfs 0.053 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.37' Inflow=1.00 cfs 0.078 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=1.00 cfs 0.078 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.80' Inflow=0.25 cfs 0.025 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.25 cfs 0.025 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.23' Inflow=0.25 cfs 0.025 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.25 cfs 0.025 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.43' Inflow=0.58 cfs 0.045 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.58 cfs 0.045 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.86' Inflow=0.41 cfs 0.032 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.41 cfs 0.032 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.59' Inflow=0.47 cfs 0.037 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.47 cfs 0.037 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=113.66' Inflow=0.46 cfs 0.036 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.46 cfs 0.036 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.45' Inflow=2.01 cfs 0.157 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=2.01 cfs 0.157 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.13' Inflow=0.06 cfs 0.004 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.06 cfs 0.004 af

Pond RD5P: RD5 TO CB806 Peak Elev=106.97' Inflow=2.06 cfs 0.161 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=2.06 cfs 0.161 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.61' Inflow=1.07 cfs 0.083 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.07 cfs 0.083 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.15' Inflow=0.25 cfs 0.020 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.25 cfs 0.020 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.57' Inflow=0.17 cfs 0.014 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.17 cfs 0.014 af

Total Runoff Area = 121.896 ac Runoff Volume = 10.419 af Average Runoff Depth = 1.03"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.94"
Flow Length=928' Tc=34.5 min CN=47 Runoff=1.14 cfs 0.209 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.18"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.92 cfs 0.073 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=3.69"
Flow Length=645' Tc=9.0 min CN=79 Runoff=15.74 cfs 1.243 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=3.00"
Flow Length=416' Tc=9.0 min CN=72 Runoff=5.57 cfs 0.440 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.13"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.15 cfs 0.092 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.01"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=22.36 cfs 3.952 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=2.36"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=1.88 cfs 0.217 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=452' Tc=14.5 min CN=47 Runoff=2.02 cfs 0.273 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.25"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.11 cfs 0.061 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=2.81"
Tc=5.0 min CN=70 Runoff=3.34 cfs 0.230 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=1.31 cfs 0.090 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=1.37"
Tc=5.0 min CN=53 Runoff=0.57 cfs 0.046 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=1.18 cfs 0.082 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.68 cfs 0.133 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=0.99 cfs 0.076 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=2.78 cfs 0.210 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.74"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.27 cfs 0.035 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=0.47 cfs 0.032 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.39 cfs 0.110 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=2.96 cfs 0.230 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=1.41 cfs 0.109 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=91 Runoff=1.01 cfs 0.073 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=5.19"
Tc=5.0 min CN=93 Runoff=3.82 cfs 0.282 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=2.08 cfs 0.159 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=0.36 cfs 0.025 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=83 Runoff=1.19 cfs 0.083 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=0.39 cfs 0.027 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=5.08"
Tc=5.0 min CN=92 Runoff=1.05 cfs 0.077 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.94"
Flow Length=469' Tc=13.1 min CN=47 Runoff=2.00 cfs 0.261 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.45"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.46 cfs 0.100 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.51 cfs 0.038 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=0.44 cfs 0.034 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.004 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.004 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.005 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.31 cfs 0.024 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=3.19"
Tc=5.0 min CN=74 Runoff=3.06 cfs 0.210 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=65 Runoff=0.12 cfs 0.008 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.45 cfs 0.034 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=63 Runoff=0.03 cfs 0.002 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=63 Runoff=0.01 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=3.59"
Tc=5.0 min CN=78 Runoff=1.00 cfs 0.069 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=65 Runoff=0.07 cfs 0.005 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=83 Runoff=0.19 cfs 0.013 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=0.14 cfs 0.010 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=1.76"
Tc=5.0 min CN=58 Runoff=0.05 cfs 0.003 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=0.40 cfs 0.028 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=4.00"
Tc=5.0 min CN=82 Runoff=0.29 cfs 0.020 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=88 Runoff=0.39 cfs 0.028 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.35 cfs 0.026 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.49 cfs 0.039 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=1.71 cfs 0.121 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.62"
Flow Length=919' Tc=16.0 min CN=42 Runoff=1.25 cfs 0.233 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.83 cfs 0.063 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=2.32 cfs 0.177 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.71 cfs 0.053 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=1.00 cfs 0.075 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=3.19"
Tc=5.0 min CN=74 Runoff=2.88 cfs 0.197 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=2.63"
Tc=5.0 min CN=68 Runoff=1.96 cfs 0.136 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=4.97"
Tc=0.0 min CN=91 Runoff=6.39 cfs 0.397 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.47 cfs 0.037 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=1.35 cfs 0.093 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=1.68"
Tc=5.0 min CN=57 Runoff=1.71 cfs 0.128 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=64 Runoff=0.99 cfs 0.069 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=2.10"
Tc=5.0 min CN=62 Runoff=3.29 cfs 0.235 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=2.99 cfs 0.211 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.62 cfs 0.047 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.60 cfs 0.045 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=4.86"
Tc=5.0 min CN=90 Runoff=0.43 cfs 0.031 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=2.43 cfs 0.184 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=3.79 cfs 0.286 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=2.54"
Tc=5.0 min CN=67 Runoff=10.54 cfs 0.733 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=0.57 cfs 0.043 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=5.19"
Tc=5.0 min CN=93 Runoff=0.51 cfs 0.038 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=4.21"
Tc=5.0 min CN=84 Runoff=0.64 cfs 0.045 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=1.61 cfs 0.110 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=1.22"
Tc=5.0 min CN=51 Runoff=0.89 cfs 0.075 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.50"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.37 cfs 0.075 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.52 cfs 0.033 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=1.60"
Flow Length=466' Tc=10.6 min CN=56 Runoff=2.34 cfs 0.217 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=3.59"
Tc=5.0 min CN=78 Runoff=0.81 cfs 0.055 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=0.98 cfs 0.067 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=1.93"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.09 cfs 0.006 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=2.91"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.61 cfs 0.046 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=1.60"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.33 cfs 0.028 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=2.72"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.47 cfs 0.031 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=2.27"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.46 cfs 0.035 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=2.72"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.48 cfs 0.032 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=2.54"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.16 cfs 0.011 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=2.18"
Flow Length=205' Tc=6.3 min CN=63 Runoff=1.06 cfs 0.079 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=3.00"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.67 cfs 0.049 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.19 cfs 0.173 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=2.27"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.10 cfs 0.006 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=2.54"
Flow Length=378' Tc=10.9 min CN=67 Runoff=1.52 cfs 0.129 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=2.72"
Flow Length=261' Tc=3.4 min CN=69 Runoff=1.11 cfs 0.072 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=4.10"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.87 cfs 0.053 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=2.27"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.27 cfs 0.018 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.19 cfs 0.173 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=3.29"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.42 cfs 0.028 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=2.63"
Flow Length=462' Tc=10.0 min CN=68 Runoff=1.47 cfs 0.121 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=2.81"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.98 cfs 0.065 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.81"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=2.32 cfs 0.416 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=2.81"
Flow Length=349' Tc=10.3 min CN=70 Runoff=2.80 cfs 0.232 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=3.59"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.97 cfs 0.069 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.003 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.058 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.59 cfs 0.047 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.58 cfs 0.046 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.56 cfs 0.202 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.006 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.61 cfs 0.206 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.36 cfs 0.107 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.32 cfs 0.025 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Reach 1AR: STREAM Avg. Flow Depth=0.78' Max Vel=3.59 fps Inflow=16.86 cfs 5.090 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=16.60 cfs 5.089 af

Reach 1BR: STREAM Avg. Flow Depth=0.40' Max Vel=2.74 fps Inflow=5.57 cfs 0.440 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=5.43 cfs 0.440 af

Reach 1R: STREAM Avg. Flow Depth=1.05' Max Vel=3.08 fps Inflow=22.02 cfs 5.529 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=21.52 cfs 5.528 af

Reach 2R: REACH 2 Avg. Flow Depth=0.20' Max Vel=1.31 fps Inflow=1.13 cfs 1.638 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=1.13 cfs 1.635 af

Reach 3R: REACH 3 Avg. Flow Depth=0.23' Max Vel=1.47 fps Inflow=1.88 cfs 0.484 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.84 cfs 0.484 af

Reach 4R: REACH 4 Avg. Flow Depth=0.16' Max Vel=0.81 fps Inflow=2.02 cfs 0.273 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=1.89 cfs 0.273 af

Reach 5R: REACH 5 Avg. Flow Depth=0.04' Max Vel=0.42 fps Inflow=0.24 cfs 0.153 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.24 cfs 0.153 af

Reach 6R: REACH 6 Avg. Flow Depth=0.18' Max Vel=0.81 fps Inflow=1.89 cfs 0.426 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=1.78 cfs 0.426 af

Reach 7R: STREAM Avg. Flow Depth=0.35' Max Vel=2.20 fps Inflow=3.58 cfs 0.910 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=3.57 cfs 0.910 af

Reach 8R: STREAM Avg. Flow Depth=0.38' Max Vel=2.20 fps Inflow=4.24 cfs 2.545 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=4.16 cfs 2.543 af

Reach 9R: STREAM Avg. Flow Depth=1.05' Max Vel=3.29 fps Inflow=22.93 cfs 8.071 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=22.91 cfs 8.070 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.55' Max Vel=5.74 fps Inflow=2.99 cfs 0.211 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.99 cfs 0.211 af

Reach 41R: REACH Avg. Flow Depth=0.08' Max Vel=0.71 fps Inflow=0.28 cfs 0.266 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.28 cfs 0.266 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.41' Max Vel=2.13 fps Inflow=6.34 cfs 3.848 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=6.33 cfs 3.847 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=70.59' Inflow=39.34 cfs 12.022 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=39.34 cfs 12.022 af

Pond 11P: CB11 to CB12 Peak Elev=106.18' Inflow=1.68 cfs 0.133 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.68 cfs 0.133 af

Pond 12R: From CB12 out Peak Elev=105.98' Inflow=3.07 cfs 0.242 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.07 cfs 0.242 af

Pond 13P: CB13 to CB14 Peak Elev=107.37' Inflow=1.71 cfs 0.121 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.71 cfs 0.121 af

Pond 14P: CB14 to CB15 Peak Elev=106.38' Inflow=1.95 cfs 0.140 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.95 cfs 0.140 af

Pond 15P: CB15 out Peak Elev=105.39' Inflow=2.47 cfs 0.181 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.47 cfs 0.181 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.26' Storage=25,319 cf Inflow=11.71 cfs 3.889 af
Outflow=6.34 cfs 3.848 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.47' Storage=59,973 cf Inflow=38.75 cfs 3.102 af
Outflow=4.94 cfs 3.102 af

Pond 107P: CB107 TO HW106 Peak Elev=102.28' Inflow=4.09 cfs 0.311 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=4.09 cfs 0.311 af

Pond 108P: CB108 TO CB107 Peak Elev=102.65' Inflow=2.78 cfs 0.210 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=2.78 cfs 0.210 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.78' Inflow=0.27 cfs 0.035 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.27 cfs 0.035 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.69' Inflow=0.68 cfs 0.067 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.68 cfs 0.067 af

Pond 205P: CB205 TO HW200 Peak Elev=104.47' Inflow=11.28 cfs 0.854 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=11.28 cfs 0.854 af

Pond 206P: CB206 TO CB205 Peak Elev=104.49' Inflow=1.41 cfs 0.109 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.41 cfs 0.109 af

Pond 210P: CB210 TO CB205 Peak Elev=104.94' Inflow=6.91 cfs 0.515 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=6.91 cfs 0.515 af

Pond 215P: DCB215 TO CB210 Peak Elev=105.47' Inflow=5.90 cfs 0.441 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=5.90 cfs 0.441 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.67' Inflow=2.08 cfs 0.159 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=2.08 cfs 0.159 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.69' Inflow=1.19 cfs 0.083 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=1.19 cfs 0.083 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.46' Inflow=2.24 cfs 0.177 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=2.24 cfs 0.177 af

Pond 305P: CB305 TO HW300 Peak Elev=105.28' Inflow=12.82 cfs 1.263 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=12.82 cfs 1.263 af

Pond 310P: CB310 TO CB305 Peak Elev=105.89' Inflow=11.77 cfs 1.186 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=11.77 cfs 1.186 af

Pond 315P: CB315 TO CB310 Peak Elev=108.60' Inflow=11.07 cfs 0.925 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=11.07 cfs 0.925 af

Pond 316P: CB316 TO CB315 Peak Elev=108.60' Inflow=0.51 cfs 0.038 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.51 cfs 0.038 af

Pond 320P: CB320 TO CB315 Peak Elev=111.05' Inflow=10.55 cfs 0.787 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=10.55 cfs 0.787 af

Pond 320Pa: Porous Walk Peak Elev=112.23' Storage=14 cf Inflow=0.06 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 321P: CB321 TO CB320 Peak Elev=114.15' Inflow=5.43 cfs 0.404 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=5.43 cfs 0.404 af

Pond 321Pa: Porous Walk Peak Elev=116.97' Storage=14 cf Inflow=0.06 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 322P: CB323 TO CB322 Peak Elev=119.58' Inflow=4.85 cfs 0.356 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=4.85 cfs 0.356 af

Pond 323P: CB324 to CB323 Peak Elev=122.77' Inflow=4.85 cfs 0.353 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=4.85 cfs 0.353 af

Pond 323Pa: Porous Walk Peak Elev=129.57' Storage=16 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.006 af

Pond 324P: CB325 to CB324 Peak Elev=123.30' Inflow=4.33 cfs 0.310 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=4.33 cfs 0.310 af

Pond 325P: CB326 TO CB325 Peak Elev=124.05' Inflow=4.02 cfs 0.286 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=4.02 cfs 0.286 af

Pond 326P: CB327 TO CB326 Peak Elev=125.08' Inflow=3.79 cfs 0.267 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=3.79 cfs 0.267 af

Pond 326Pa: Porous Walk Peak Elev=128.31' Storage=29 cf Inflow=0.12 cfs 0.008 af
Outflow=0.05 cfs 0.008 af

Pond 326Pb: Porous Walk Peak Elev=129.37' Storage=2 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 326Pc: Porous Walk Peak Elev=129.97' Storage=2 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 330P: CB330 T0 CB320 Peak Elev=112.04' Inflow=4.69 cfs 0.346 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=4.69 cfs 0.346 af

Pond 330Pa: Porous Walk Peak Elev=114.31' Storage=1 cf Inflow=0.03 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 330Pb: Porous Walk Peak Elev=113.03' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=112.18' Inflow=1.79 cfs 0.131 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=1.79 cfs 0.131 af

Pond 331Pa: Porous Walk Peak Elev=116.60' Storage=17 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 332P: CB332 to CB331 Peak Elev=112.18' Inflow=0.19 cfs 0.013 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.19 cfs 0.013 af

Pond 332Pa: Porous Walk Peak Elev=116.75' Storage=38 cf Inflow=0.14 cfs 0.010 af
Outflow=0.07 cfs 0.010 af

Pond 333P: CB333 TO CB331 Peak Elev=113.13' Inflow=0.59 cfs 0.049 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.59 cfs 0.049 af

Pond 333Pa: Porous Walk Peak Elev=128.99' Storage=11 cf Inflow=0.05 cfs 0.003 af
Outflow=0.02 cfs 0.003 af

Pond 335P: CB335 TO CB330 Peak Elev=112.31' Inflow=2.45 cfs 0.182 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=2.45 cfs 0.182 af

Pond 340P: CB340TO CB335 Peak Elev=112.51' Inflow=2.05 cfs 0.154 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=2.05 cfs 0.154 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.34' Inflow=1.76 cfs 0.134 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=1.76 cfs 0.134 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.34' Inflow=1.76 cfs 0.134 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=1.76 cfs 0.134 af

Pond 351P: CB351 TO CB350 Peak Elev=120.81' Inflow=0.35 cfs 0.026 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.35 cfs 0.026 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.34' Inflow=1.01 cfs 0.080 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=1.01 cfs 0.080 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.84' Inflow=1.01 cfs 0.080 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=1.01 cfs 0.080 af

Pond 365P: CB365 TO CB360 Peak Elev=133.03' Inflow=0.52 cfs 0.041 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.52 cfs 0.041 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=124.11' Inflow=2.32 cfs 0.409 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=2.32 cfs 0.409 af

Pond 405P: CB405 TO HW400 Peak Elev=102.56' Inflow=5.08 cfs 0.385 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=5.08 cfs 0.385 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.41' Inflow=4.02 cfs 0.305 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=4.02 cfs 0.305 af

Pond 415P: CB415 TO CB410 Peak Elev=103.57' Inflow=1.71 cfs 0.127 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=1.71 cfs 0.127 af

Pond 416P: CB416 TO CB415 Peak Elev=103.67' Inflow=1.00 cfs 0.075 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=1.00 cfs 0.075 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=119.11' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=13.11 cfs 1.267 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.86' Inflow=4.27 cfs 0.545 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=4.27 cfs 0.545 af

Pond 505P: dmh505 TO HW500 Peak Elev=105.18' Inflow=6.25 cfs 0.454 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=6.25 cfs 0.454 af

Pond 507P: CB507 TO CB505 Peak Elev=106.32' Inflow=6.25 cfs 0.454 af
Primary=6.25 cfs 0.454 af Secondary=0.00 cfs 0.000 af Outflow=6.25 cfs 0.454 af

Pond 508P: CB508 TO CB507 Peak Elev=108.49' Inflow=5.78 cfs 0.417 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=5.78 cfs 0.417 af

Pond 509P: CB509 to CB508 Peak Elev=109.62' Inflow=5.78 cfs 0.417 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=5.78 cfs 0.417 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.78' Storage=81,375 cf Inflow=17.07 cfs 2.205 af
Outflow=1.09 cfs 1.566 af

Pond 710P: CB710 TO HW700 Peak Elev=101.41' Inflow=7.87 cfs 0.593 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=7.87 cfs 0.593 af

Pond 711P: CB711 TO CB710 Peak Elev=103.56' Inflow=0.60 cfs 0.045 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.60 cfs 0.045 af

Pond 715P: CB715 TO CB710 Peak Elev=102.02' Inflow=6.65 cfs 0.501 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=6.65 cfs 0.501 af

Pond 720P: DCB720 TO CB715 Peak Elev=102.87' Inflow=6.22 cfs 0.470 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=6.22 cfs 0.470 af

Pond 725P: CB725 TO DCB720 Peak Elev=103.27' Inflow=3.79 cfs 0.286 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=3.79 cfs 0.286 af

Pond 801P: HW801 TO HW800 Peak Elev=102.46' Storage=11,605 cf Inflow=18.84 cfs 1.382 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=7.08 cfs 1.377 af

Pond 805P: CB805 TO HW802 Peak Elev=103.00' Inflow=8.32 cfs 0.650 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=8.32 cfs 0.650 af

Pond 806P: CB806 TO CB805 Peak Elev=104.26' Inflow=6.40 cfs 0.499 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=6.40 cfs 0.499 af

Pond 807P: CB807 TO CB806 Peak Elev=106.18' Inflow=3.27 cfs 0.255 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=3.27 cfs 0.255 af

Pond 808P: CB808 TO CB807 Peak Elev=107.04' Inflow=2.56 cfs 0.205 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=2.56 cfs 0.205 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=134.95' Inflow=6.05 cfs 0.524 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=6.05 cfs 0.524 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=134.99' Inflow=0.89 cfs 0.075 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.89 cfs 0.075 af

Pond 900P: POND 900 Peak Elev=100.66' Storage=88,635 cf Inflow=23.42 cfs 3.042 af
Discarded=1.06 cfs 2.429 af Primary=0.28 cfs 0.266 af Outflow=1.34 cfs 2.696 af

Pond 1000P: Sediment Forebay Peak Elev=111.56' Storage=89 cf Inflow=1.14 cfs 0.209 af
Outflow=1.14 cfs 0.209 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=120.75' Storage=3,966 cf Inflow=4.63 cfs 0.349 af
Discarded=0.13 cfs 0.212 af Primary=4.51 cfs 0.137 af Outflow=4.64 cfs 0.349 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=112.86' Storage=3,966 cf Inflow=3.22 cfs 0.280 af
Discarded=0.13 cfs 0.202 af Primary=1.95 cfs 0.078 af Outflow=2.08 cfs 0.280 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=138.29' Inflow=2.34 cfs 0.217 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=2.34 cfs 0.217 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=137.65' Inflow=3.69 cfs 0.340 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=3.69 cfs 0.340 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=138.07' Inflow=3.04 cfs 0.284 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=3.04 cfs 0.284 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.81' Inflow=0.09 cfs 0.006 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.09 cfs 0.006 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.58' Inflow=0.69 cfs 0.052 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.69 cfs 0.052 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.62' Inflow=0.33 cfs 0.028 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.33 cfs 0.028 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.73' Inflow=1.41 cfs 0.111 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=1.41 cfs 0.111 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.63' Inflow=1.41 cfs 0.111 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=1.41 cfs 0.111 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=124.36' Inflow=2.33 cfs 0.178 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=2.33 cfs 0.178 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.80' Inflow=0.48 cfs 0.032 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.48 cfs 0.032 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=122.52' Inflow=2.48 cfs 0.189 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=2.48 cfs 0.189 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=109.96' Inflow=1.14 cfs 0.209 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=1.14 cfs 0.209 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=121.01' Inflow=1.06 cfs 0.079 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=1.06 cfs 0.079 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=120.98' Inflow=4.21 cfs 0.316 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=4.21 cfs 0.316 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=120.75' Inflow=0.52 cfs 0.033 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.52 cfs 0.033 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=120.78' Inflow=4.21 cfs 0.316 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=4.21 cfs 0.316 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=120.75' Inflow=0.52 cfs 0.033 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.52 cfs 0.033 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=118.72' Inflow=4.51 cfs 0.137 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=4.51 cfs 0.137 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=111.38' Inflow=4.51 cfs 0.137 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=4.51 cfs 0.137 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=111.53' Inflow=5.79 cfs 0.519 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=5.79 cfs 0.519 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=106.03' Inflow=5.79 cfs 0.519 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=5.79 cfs 0.519 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=112.86' Inflow=0.10 cfs 0.006 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.10 cfs 0.006 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=114.20' Inflow=1.52 cfs 0.129 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=1.52 cfs 0.129 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=112.86' Inflow=0.96 cfs 0.060 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.96 cfs 0.060 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.93' Inflow=2.24 cfs 0.202 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=2.24 cfs 0.202 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=112.87' Inflow=2.24 cfs 0.202 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=2.24 cfs 0.201 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=112.86' Inflow=0.27 cfs 0.018 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.27 cfs 0.018 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=104.16' Inflow=6.50 cfs 0.597 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=6.50 cfs 0.597 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=112.86' Inflow=1.20 cfs 0.078 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=1.20 cfs 0.078 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=110.21' Inflow=1.95 cfs 0.078 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=1.95 cfs 0.078 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=104.54' Inflow=1.95 cfs 0.078 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=1.95 cfs 0.078 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=102.86' Inflow=4.72 cfs 0.386 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=4.72 cfs 0.386 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=103.51' Inflow=2.58 cfs 0.214 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=2.58 cfs 0.214 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.92' Inflow=0.42 cfs 0.028 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.42 cfs 0.028 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=110.18' Inflow=1.47 cfs 0.121 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=1.47 cfs 0.121 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.92' Inflow=2.20 cfs 0.186 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=2.20 cfs 0.186 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=106.84' Inflow=13.22 cfs 1.683 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=13.22 cfs 1.683 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=105.62' Inflow=15.65 cfs 1.914 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=15.65 cfs 1.914 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=103.91' Inflow=16.61 cfs 1.984 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=16.61 cfs 1.984 af

Pond 3200P: CB3200 TO CB320 Peak Elev=111.02' Inflow=0.01 cfs 0.003 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.01 cfs 0.003 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=109.71' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=13.11 cfs 1.267 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=108.02' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=13.11 cfs 1.267 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.50' Storage=4,039 cf Inflow=6.39 cfs 0.397 af
Discarded=0.01 cfs 0.059 af Primary=5.29 cfs 0.301 af Outflow=5.30 cfs 0.360 af

Pond C3P: CBC3 to CB509 Peak Elev=114.84' Inflow=4.80 cfs 0.348 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=4.80 cfs 0.348 af

Pond C4P: CBC4 to CBC3 Peak Elev=117.01' Inflow=3.09 cfs 0.220 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=3.09 cfs 0.220 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.53' Inflow=1.18 cfs 0.082 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=1.18 cfs 0.082 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.56' Inflow=1.75 cfs 0.127 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=1.75 cfs 0.127 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.93' Inflow=0.57 cfs 0.046 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.57 cfs 0.046 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.36' Inflow=0.57 cfs 0.046 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.57 cfs 0.046 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.50' Inflow=0.73 cfs 0.058 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.73 cfs 0.058 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.91' Inflow=0.52 cfs 0.041 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.52 cfs 0.041 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.64' Inflow=0.59 cfs 0.047 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.59 cfs 0.047 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=114.19' Inflow=0.58 cfs 0.046 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.58 cfs 0.046 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.77' Inflow=2.56 cfs 0.202 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=2.56 cfs 0.202 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.14' Inflow=0.07 cfs 0.006 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.07 cfs 0.006 af

Pond RD5P: RD5 TO CB806 Peak Elev=107.27' Inflow=2.61 cfs 0.206 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=2.61 cfs 0.206 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.71' Inflow=1.36 cfs 0.107 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.36 cfs 0.107 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.29' Inflow=0.32 cfs 0.025 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.32 cfs 0.025 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.67' Inflow=0.22 cfs 0.017 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.22 cfs 0.017 af

Total Runoff Area = 121.896 ac Runoff Volume = 16.706 af Average Runoff Depth = 1.64"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=1.50"
Flow Length=928' Tc=34.5 min CN=47 Runoff=2.08 cfs 0.334 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=3.04"
Flow Length=80' Tc=8.0 min CN=63 Runoff=1.30 cfs 0.101 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=4.75"
Flow Length=645' Tc=9.0 min CN=79 Runoff=20.17 cfs 1.600 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=416' Tc=9.0 min CN=72 Runoff=7.41 cfs 0.583 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.36"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.55 cfs 0.243 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.59"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=39.62 cfs 6.228 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=3.24"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=2.62 cfs 0.299 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=452' Tc=14.5 min CN=47 Runoff=3.82 cfs 0.436 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.55"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.50 cfs 0.131 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=70 Runoff=4.49 cfs 0.308 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=1.66 cfs 0.116 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=2.05"
Tc=5.0 min CN=53 Runoff=0.92 cfs 0.068 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.60 cfs 0.110 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.01 cfs 0.159 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=1.19 cfs 0.092 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=3.34 cfs 0.255 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=1.24"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.60 cfs 0.058 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=0.59 cfs 0.041 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=1.66 cfs 0.132 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=3.55 cfs 0.277 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=1.69 cfs 0.132 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=6.12"
Tc=5.0 min CN=91 Runoff=1.23 cfs 0.090 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=6.35"
Tc=5.0 min CN=93 Runoff=4.62 cfs 0.345 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=2.50 cfs 0.193 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=0.44 cfs 0.032 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=5.20"
Tc=5.0 min CN=83 Runoff=1.50 cfs 0.105 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=0.53 cfs 0.036 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=6.23"
Tc=5.0 min CN=92 Runoff=1.28 cfs 0.095 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=1.50"
Flow Length=469' Tc=13.1 min CN=47 Runoff=3.79 cfs 0.417 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.83"
Flow Length=537' Tc=9.9 min CN=39 Runoff=1.18 cfs 0.186 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.62 cfs 0.047 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=0.52 cfs 0.041 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.005 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.05 cfs 0.007 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.022 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=4.20"
Tc=5.0 min CN=74 Runoff=4.02 cfs 0.276 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=3.24"
Tc=5.0 min CN=65 Runoff=0.16 cfs 0.011 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.54 cfs 0.041 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=3.04"
Tc=5.0 min CN=63 Runoff=0.04 cfs 0.003 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=3.04"
Tc=5.0 min CN=63 Runoff=0.02 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=78 Runoff=1.29 cfs 0.089 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=3.24"
Tc=5.0 min CN=65 Runoff=0.10 cfs 0.007 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=5.20"
Tc=5.0 min CN=83 Runoff=0.24 cfs 0.017 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=0.19 cfs 0.013 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=2.53"
Tc=5.0 min CN=58 Runoff=0.07 cfs 0.005 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=0.52 cfs 0.036 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=82 Runoff=0.36 cfs 0.025 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=88 Runoff=0.48 cfs 0.035 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.43 cfs 0.032 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.59 cfs 0.047 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.62 cfs 0.049 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=2.11 cfs 0.151 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=1.07"
Flow Length=919' Tc=16.0 min CN=42 Runoff=2.80 cfs 0.403 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=1.00 cfs 0.077 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=2.78 cfs 0.215 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.85 cfs 0.064 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=1.20 cfs 0.091 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=4.20"
Tc=5.0 min CN=74 Runoff=3.78 cfs 0.259 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=3.56"
Tc=5.0 min CN=68 Runoff=2.68 cfs 0.184 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=6.12"
Tc=0.0 min CN=91 Runoff=7.78 cfs 0.488 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.56 cfs 0.044 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.83 cfs 0.125 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=2.43"
Tc=5.0 min CN=57 Runoff=2.58 cfs 0.185 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=3.14"
Tc=5.0 min CN=64 Runoff=1.39 cfs 0.096 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.63 cfs 0.050 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=62 Runoff=4.71 cfs 0.328 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=3.70 cfs 0.264 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.75 cfs 0.057 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.72 cfs 0.055 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=6.00"
Tc=5.0 min CN=90 Runoff=0.52 cfs 0.038 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=2.93 cfs 0.223 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=4.55 cfs 0.347 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=3.45"
Tc=5.0 min CN=67 Runoff=14.48 cfs 0.996 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=0.68 cfs 0.052 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=6.35"
Tc=5.0 min CN=93 Runoff=0.62 cfs 0.046 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=84 Runoff=0.80 cfs 0.056 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.05 cfs 0.006 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=2.09 cfs 0.144 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=51 Runoff=1.49 cfs 0.114 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.91"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.89 cfs 0.136 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=3.77"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.70 cfs 0.044 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=2.34"
Flow Length=466' Tc=10.6 min CN=56 Runoff=3.59 cfs 0.316 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=78 Runoff=1.04 cfs 0.072 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.32 cfs 0.091 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=2.73"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.13 cfs 0.009 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=3.88"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.81 cfs 0.061 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=2.34"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.50 cfs 0.041 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=3.66"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.63 cfs 0.042 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=3.14"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.65 cfs 0.048 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=3.66"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.66 cfs 0.044 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=3.45"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.22 cfs 0.015 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=3.04"
Flow Length=205' Tc=6.3 min CN=63 Runoff=1.50 cfs 0.109 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=3.98"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.90 cfs 0.065 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.62 cfs 0.208 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=3.14"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.13 cfs 0.009 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=3.45"
Flow Length=378' Tc=10.9 min CN=67 Runoff=2.09 cfs 0.176 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=3.66"
Flow Length=261' Tc=3.4 min CN=69 Runoff=1.51 cfs 0.098 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=5.20"
Flow Length=138' Tc=1.6 min CN=83 Runoff=1.09 cfs 0.068 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=3.14"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.39 cfs 0.026 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.62 cfs 0.208 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=4.31"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.55 cfs 0.037 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=3.56"
Flow Length=462' Tc=10.0 min CN=68 Runoff=2.00 cfs 0.163 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=3.77"
Flow Length=261' Tc=3.9 min CN=70 Runoff=1.32 cfs 0.087 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=1.32"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=4.52 cfs 0.683 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=3.77"
Flow Length=349' Tc=10.3 min CN=70 Runoff=3.78 cfs 0.310 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=4.64"
Flow Length=204' Tc=6.3 min CN=78 Runoff=1.24 cfs 0.090 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.04 cfs 0.006 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.88 cfs 0.069 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.62 cfs 0.049 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.71 cfs 0.056 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.69 cfs 0.055 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=3.06 cfs 0.243 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=3.13 cfs 0.248 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=1.62 cfs 0.129 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.021 af

Reach 1AR: STREAM Avg. Flow Depth=0.97' Max Vel=4.05 fps Inflow=25.53 cfs 6.616 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=25.17 cfs 6.615 af

Reach 1BR: STREAM Avg. Flow Depth=0.47' Max Vel=3.00 fps Inflow=7.41 cfs 0.583 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=7.26 cfs 0.583 af

Reach 1R: STREAM Avg. Flow Depth=1.28' Max Vel=3.43 fps Inflow=32.33 cfs 7.198 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=31.67 cfs 7.197 af

Reach 2R: REACH 2 Avg. Flow Depth=0.48' Max Vel=2.18 fps Inflow=5.19 cfs 2.280 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=5.16 cfs 2.277 af

Reach 3R: REACH 3 Avg. Flow Depth=0.28' Max Vel=1.66 fps Inflow=2.63 cfs 1.179 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=2.60 cfs 1.179 af

Reach 4R: REACH 4 Avg. Flow Depth=0.21' Max Vel=0.98 fps Inflow=3.82 cfs 0.436 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=3.60 cfs 0.436 af

Reach 5R: REACH 5 Avg. Flow Depth=0.08' Max Vel=0.62 fps Inflow=1.00 cfs 0.374 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.87 cfs 0.374 af

Reach 6R: REACH 6 Avg. Flow Depth=0.24' Max Vel=0.99 fps Inflow=3.62 cfs 0.810 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=3.44 cfs 0.810 af

Reach 7R: STREAM Avg. Flow Depth=0.47' Max Vel=2.62 fps Inflow=6.03 cfs 1.989 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=6.02 cfs 1.989 af

Reach 8R: STREAM Avg. Flow Depth=0.54' Max Vel=2.66 fps Inflow=7.61 cfs 4.266 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=7.59 cfs 4.264 af

Reach 9R: STREAM Avg. Flow Depth=1.30' Max Vel=3.69 fps Inflow=34.66 cfs 11.461 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=34.63 cfs 11.460 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.62' Max Vel=6.06 fps Inflow=3.70 cfs 0.264 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=3.70 cfs 0.264 af

Reach 41R: REACH Avg. Flow Depth=0.15' Max Vel=1.07 fps Inflow=0.82 cfs 0.880 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.82 cfs 0.880 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.61' Max Vel=2.76 fps Inflow=14.79 cfs 5.016 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=14.66 cfs 5.016 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.71' Inflow=67.75 cfs 17.688 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=67.75 cfs 17.688 af

Pond 11P: CB11 to CB12 Peak Elev=106.45' Inflow=2.01 cfs 0.159 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=2.01 cfs 0.159 af

Pond 12R: From CB12 out Peak Elev=106.17' Inflow=3.67 cfs 0.291 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.67 cfs 0.291 af

Pond 13P: CB13 to CB14 Peak Elev=107.49' Inflow=2.11 cfs 0.151 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=2.11 cfs 0.151 af

Pond 14P: CB14 to CB15 Peak Elev=106.51' Inflow=2.40 cfs 0.173 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=2.40 cfs 0.173 af

Pond 15P: CB15 out Peak Elev=105.61' Inflow=3.02 cfs 0.223 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=3.02 cfs 0.223 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.99' Storage=31,448 cf Inflow=16.93 cfs 5.060 af
Outflow=14.79 cfs 5.016 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.94' Storage=72,860 cf Inflow=49.40 cfs 4.100 af
Outflow=14.08 cfs 4.100 af

Pond 107P: CB107 TO HW106 Peak Elev=103.01' Inflow=4.92 cfs 0.377 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=4.92 cfs 0.377 af

Pond 108P: CB108 TO CB107 Peak Elev=103.29' Inflow=3.34 cfs 0.255 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=3.34 cfs 0.255 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.96' Inflow=0.60 cfs 0.058 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.60 cfs 0.058 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.84' Inflow=1.14 cfs 0.099 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=1.14 cfs 0.099 af

Pond 205P: CB205 TO HW200 Peak Elev=104.98' Inflow=13.57 cfs 1.037 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=13.57 cfs 1.037 af

Pond 206P: CB206 TO CB205 Peak Elev=104.99' Inflow=1.69 cfs 0.132 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.69 cfs 0.132 af

Pond 210P: CB210 TO CB205 Peak Elev=105.66' Inflow=8.34 cfs 0.628 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=8.34 cfs 0.628 af

Pond 215P: DCB215 TO CB210 Peak Elev=106.30' Inflow=7.11 cfs 0.538 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=7.11 cfs 0.538 af

Pond 220P: CB220 TO DCB215 Peak Elev=106.50' Inflow=2.50 cfs 0.193 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=2.50 cfs 0.193 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.78' Inflow=1.50 cfs 0.105 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=1.50 cfs 0.105 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=126.12' Inflow=3.14 cfs 0.240 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=3.14 cfs 0.240 af

Pond 305P: CB305 TO HW300 Peak Elev=105.92' Inflow=17.49 cfs 1.734 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=17.49 cfs 1.734 af

Pond 310P: CB310 TO CB305 Peak Elev=107.07' Inflow=16.24 cfs 1.640 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=16.24 cfs 1.640 af

Pond 315P: CB315 TO CB310 Peak Elev=111.55' Inflow=14.26 cfs 1.223 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=14.26 cfs 1.223 af

Pond 316P: CB316 TO CB315 Peak Elev=111.52' Inflow=0.62 cfs 0.047 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.62 cfs 0.047 af

Pond 320P: CB320 TO CB315 Peak Elev=115.39' Inflow=13.29 cfs 0.991 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=13.29 cfs 0.991 af

Pond 320Pa: Porous Walk Peak Elev=112.45' Storage=23 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 321P: CB321 TO CB320 Peak Elev=117.60' Inflow=6.93 cfs 0.513 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=6.93 cfs 0.513 af

Pond 321Pa: Porous Walk Peak Elev=117.16' Storage=23 cf Inflow=0.08 cfs 0.006 af
Outflow=0.03 cfs 0.006 af

Pond 322P: CB323 TO CB322 Peak Elev=120.27' Inflow=6.22 cfs 0.455 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=6.22 cfs 0.455 af

Pond 323P: CB324 to CB323 Peak Elev=123.44' Inflow=6.18 cfs 0.449 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=6.18 cfs 0.449 af

Pond 323Pa: Porous Walk Peak Elev=129.76' Storage=25 cf Inflow=0.08 cfs 0.007 af
Outflow=0.03 cfs 0.007 af

Pond 324P: CB325 to CB324 Peak Elev=124.34' Inflow=5.54 cfs 0.397 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=5.54 cfs 0.397 af

Pond 325P: CB326 TO CB325 Peak Elev=125.57' Inflow=5.17 cfs 0.367 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=5.17 cfs 0.367 af

Pond 326P: CB327 TO CB326 Peak Elev=126.71' Inflow=4.89 cfs 0.345 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=4.89 cfs 0.345 af

Pond 326Pa: Porous Walk Peak Elev=128.81' Storage=68 cf Inflow=0.16 cfs 0.011 af
Outflow=0.05 cfs 0.011 af

Pond 326Pb: Porous Walk Peak Elev=129.56' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 326Pc: Porous Walk Peak Elev=130.16' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 330P: CB330 T0 CB320 Peak Elev=116.89' Inflow=5.81 cfs 0.431 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=5.81 cfs 0.431 af

Pond 330Pa: Porous Walk Peak Elev=114.59' Storage=6 cf Inflow=0.04 cfs 0.003 af
Outflow=0.02 cfs 0.003 af

Pond 330Pb: Porous Walk Peak Elev=113.58' Storage=8 cf Inflow=0.02 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=117.09' Inflow=2.26 cfs 0.165 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=2.26 cfs 0.165 af

Pond 331Pa: Porous Walk Peak Elev=117.08' Storage=40 cf Inflow=0.10 cfs 0.007 af
Outflow=0.03 cfs 0.007 af

Pond 332P: CB332 to CB331 Peak Elev=117.10' Inflow=0.24 cfs 0.017 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.24 cfs 0.017 af

Pond 332Pa: Porous Walk Peak Elev=117.13' Storage=74 cf Inflow=0.19 cfs 0.013 af
Outflow=0.07 cfs 0.013 af

Pond 333P: CB333 TO CB331 Peak Elev=117.13' Inflow=0.73 cfs 0.060 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.73 cfs 0.060 af

Pond 333Pa: Porous Walk Peak Elev=129.61' Storage=31 cf Inflow=0.07 cfs 0.005 af
Outflow=0.02 cfs 0.005 af

Pond 335P: CB335 TO CB330 Peak Elev=117.27' Inflow=3.01 cfs 0.224 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=3.01 cfs 0.224 af

Pond 340P: CB340TO CB335 Peak Elev=117.55' Inflow=2.48 cfs 0.188 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=2.48 cfs 0.188 af

Pond 345P: DMH345 TO CB340 Peak Elev=117.75' Inflow=2.12 cfs 0.163 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=2.12 cfs 0.163 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.43' Inflow=2.12 cfs 0.163 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=2.12 cfs 0.163 af

Pond 351P: CB351 TO CB350 Peak Elev=120.84' Inflow=0.43 cfs 0.032 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.43 cfs 0.032 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.40' Inflow=1.21 cfs 0.096 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=1.21 cfs 0.096 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.90' Inflow=1.21 cfs 0.096 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=1.21 cfs 0.096 af

Pond 365P: CB365 TO CB360 Peak Elev=133.07' Inflow=0.62 cfs 0.049 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.62 cfs 0.049 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=125.68' Inflow=4.27 cfs 0.643 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=4.27 cfs 0.643 af

Pond 405P: CB405 TO HW400 Peak Elev=103.00' Inflow=6.10 cfs 0.467 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=6.10 cfs 0.467 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.69' Inflow=4.84 cfs 0.370 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=4.84 cfs 0.370 af

Pond 415P: CB415 TO CB410 Peak Elev=103.83' Inflow=2.06 cfs 0.155 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=2.06 cfs 0.155 af

Pond 416P: CB416 TO CB415 Peak Elev=103.91' Inflow=1.20 cfs 0.091 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=1.20 cfs 0.091 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=120.41' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=18.94 cfs 1.822 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=124.97' Inflow=6.51 cfs 0.827 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=6.51 cfs 0.827 af

Pond 505P: dmh505 TO HW500 Peak Elev=105.70' Inflow=8.73 cfs 0.628 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=8.73 cfs 0.628 af

Pond 507P: CB507 TO CB505 Peak Elev=107.39' Inflow=8.86 cfs 0.629 af
Primary=8.73 cfs 0.628 af Secondary=0.12 cfs 0.000 af Outflow=8.86 cfs 0.629 af

Pond 508P: CB508 TO CB507 Peak Elev=109.28' Inflow=8.30 cfs 0.584 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=8.30 cfs 0.584 af

Pond 509P: CB509 to CB508 Peak Elev=110.23' Inflow=8.30 cfs 0.584 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=8.30 cfs 0.584 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.96' Storage=87,182 cf Inflow=20.92 cfs 2.828 af
Outflow=5.07 cfs 2.179 af

Pond 710P: CB710 TO HW700 Peak Elev=101.79' Inflow=9.47 cfs 0.721 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=9.47 cfs 0.721 af

Pond 711P: CB711 TO CB710 Peak Elev=103.60' Inflow=0.72 cfs 0.055 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.72 cfs 0.055 af

Pond 715P: CB715 TO CB710 Peak Elev=102.67' Inflow=8.00 cfs 0.609 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=8.00 cfs 0.609 af

Pond 720P: DCB720 TO CB715 Peak Elev=103.91' Inflow=7.48 cfs 0.571 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=7.48 cfs 0.571 af

Pond 725P: CB725 TO DCB720 Peak Elev=104.49' Inflow=4.55 cfs 0.347 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=4.55 cfs 0.347 af

Pond 801P: HW801 TO HW800 Peak Elev=102.95' Storage=16,609 cf Inflow=24.50 cfs 1.784 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=8.19 cfs 1.779 af

Pond 805P: CB805 TO HW802 Peak Elev=103.73' Inflow=10.03 cfs 0.788 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=10.03 cfs 0.788 af

Pond 806P: CB806 TO CB805 Peak Elev=104.57' Inflow=7.73 cfs 0.606 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=7.73 cfs 0.606 af

Pond 807P: CB807 TO CB806 Peak Elev=106.31' Inflow=3.99 cfs 0.312 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=3.99 cfs 0.312 af

Pond 808P: CB808 TO CB807 Peak Elev=107.17' Inflow=3.10 cfs 0.249 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=3.10 cfs 0.249 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=136.79' Inflow=8.75 cfs 0.736 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=8.75 cfs 0.736 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=136.89' Inflow=1.49 cfs 0.114 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=1.49 cfs 0.114 af

Pond 900P: POND 900 Peak Elev=101.78' Storage=131,534 cf Inflow=42.02 cfs 4.609 af
Discarded=1.52 cfs 3.275 af Primary=0.82 cfs 0.880 af Outflow=2.34 cfs 4.155 af

Pond 1000P: Sediment Forebay Peak Elev=112.14' Storage=1,002 cf Inflow=2.08 cfs 0.334 af
Outflow=7.93 cfs 0.334 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=146.53' Storage=3,966 cf Inflow=6.40 cfs 0.477 af
Discarded=0.13 cfs 0.230 af Primary=9.05 cfs 0.247 af Outflow=9.17 cfs 0.477 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=116.35' Storage=3,966 cf Inflow=4.36 cfs 0.375 af
Discarded=0.13 cfs 0.219 af Primary=4.57 cfs 0.156 af Outflow=4.70 cfs 0.375 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=140.96' Inflow=3.59 cfs 0.316 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=3.59 cfs 0.316 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=139.48' Inflow=5.39 cfs 0.478 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=5.39 cfs 0.478 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=140.38' Inflow=4.55 cfs 0.407 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=4.55 cfs 0.407 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=146.37' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.13 cfs 0.009 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=148.88' Inflow=0.93 cfs 0.070 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.93 cfs 0.070 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=148.83' Inflow=0.50 cfs 0.041 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.50 cfs 0.041 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=150.83' Inflow=1.98 cfs 0.152 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=1.98 cfs 0.152 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=146.33' Inflow=1.98 cfs 0.152 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=1.98 cfs 0.152 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=148.12' Inflow=3.23 cfs 0.244 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=3.23 cfs 0.244 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=146.10' Inflow=0.66 cfs 0.044 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.66 cfs 0.044 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=149.07' Inflow=3.45 cfs 0.259 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=3.45 cfs 0.259 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=137.22' Inflow=7.71 cfs 0.463 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=7.71 cfs 0.463 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=147.66' Inflow=1.50 cfs 0.109 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=1.50 cfs 0.109 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=143.29' Inflow=5.84 cfs 0.433 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=5.84 cfs 0.433 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=142.43' Inflow=0.70 cfs 0.044 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.70 cfs 0.044 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=144.60' Inflow=5.84 cfs 0.433 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=5.84 cfs 0.433 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=144.47' Inflow=0.70 cfs 0.044 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.70 cfs 0.044 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=141.42' Inflow=9.05 cfs 0.247 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=9.05 cfs 0.247 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=142.90' Inflow=9.05 cfs 0.247 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=9.05 cfs 0.247 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=144.00' Inflow=11.78 cfs 0.917 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=11.78 cfs 0.917 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=122.65' Inflow=11.78 cfs 0.917 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=11.78 cfs 0.917 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=116.36' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.13 cfs 0.009 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=116.98' Inflow=2.09 cfs 0.176 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=2.09 cfs 0.176 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=114.39' Inflow=1.21 cfs 0.076 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=1.21 cfs 0.076 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=114.99' Inflow=3.08 cfs 0.273 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=3.08 cfs 0.273 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=115.68' Inflow=3.08 cfs 0.273 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=3.08 cfs 0.273 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=114.37' Inflow=0.39 cfs 0.026 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.39 cfs 0.026 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=113.40' Inflow=13.21 cfs 1.073 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=13.21 cfs 1.073 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=115.65' Inflow=1.56 cfs 0.102 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=1.56 cfs 0.102 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=113.01' Inflow=4.57 cfs 0.156 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=4.57 cfs 0.156 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=113.69' Inflow=4.57 cfs 0.156 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=4.57 cfs 0.156 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=103.86' Inflow=6.05 cfs 0.495 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=6.05 cfs 0.495 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=104.95' Inflow=3.49 cfs 0.287 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=3.49 cfs 0.287 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=105.10' Inflow=0.55 cfs 0.037 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.55 cfs 0.037 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=110.46' Inflow=2.00 cfs 0.163 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=2.00 cfs 0.163 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=110.20' Inflow=2.99 cfs 0.250 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=2.99 cfs 0.250 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=111.67' Inflow=19.61 cfs 2.505 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=19.61 cfs 2.505 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=108.97' Inflow=23.00 cfs 2.815 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=23.00 cfs 2.815 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=105.27' Inflow=24.23 cfs 2.905 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=24.23 cfs 2.905 af

Pond 3200P: CB3200 TO CB320 Peak Elev=115.35' Inflow=0.04 cfs 0.006 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.04 cfs 0.006 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=116.56' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=18.94 cfs 1.822 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=114.12' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=18.94 cfs 1.822 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.85' Storage=4,353 cf Inflow=7.78 cfs 0.488 af
Discarded=0.01 cfs 0.060 af Primary=5.68 cfs 0.392 af Outflow=5.69 cfs 0.452 af

Pond C3P: CBC3 to CB509 Peak Elev=115.08' Inflow=6.92 cfs 0.488 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=6.92 cfs 0.488 af

Pond C4P: CBC4 to CBC3 Peak Elev=117.26' Inflow=4.34 cfs 0.303 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=4.34 cfs 0.303 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.63' Inflow=1.60 cfs 0.110 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=1.60 cfs 0.110 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.77' Inflow=2.51 cfs 0.178 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=2.51 cfs 0.178 af

Pond C7P: CBC7 to DMHC6 Peak Elev=119.04' Inflow=0.92 cfs 0.068 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.92 cfs 0.068 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.48' Inflow=0.92 cfs 0.068 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.92 cfs 0.068 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=126.79' Inflow=0.88 cfs 0.069 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.88 cfs 0.069 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.95' Inflow=0.62 cfs 0.049 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.62 cfs 0.049 af

Pond RD2Pa: RD2a to CB333 Peak Elev=117.19' Inflow=0.71 cfs 0.056 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.71 cfs 0.056 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=117.62' Inflow=0.69 cfs 0.055 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.69 cfs 0.055 af

Pond RD3P: RD3 TO CB808 Peak Elev=108.22' Inflow=3.06 cfs 0.243 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=3.06 cfs 0.243 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.16' Inflow=0.08 cfs 0.007 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.08 cfs 0.007 af

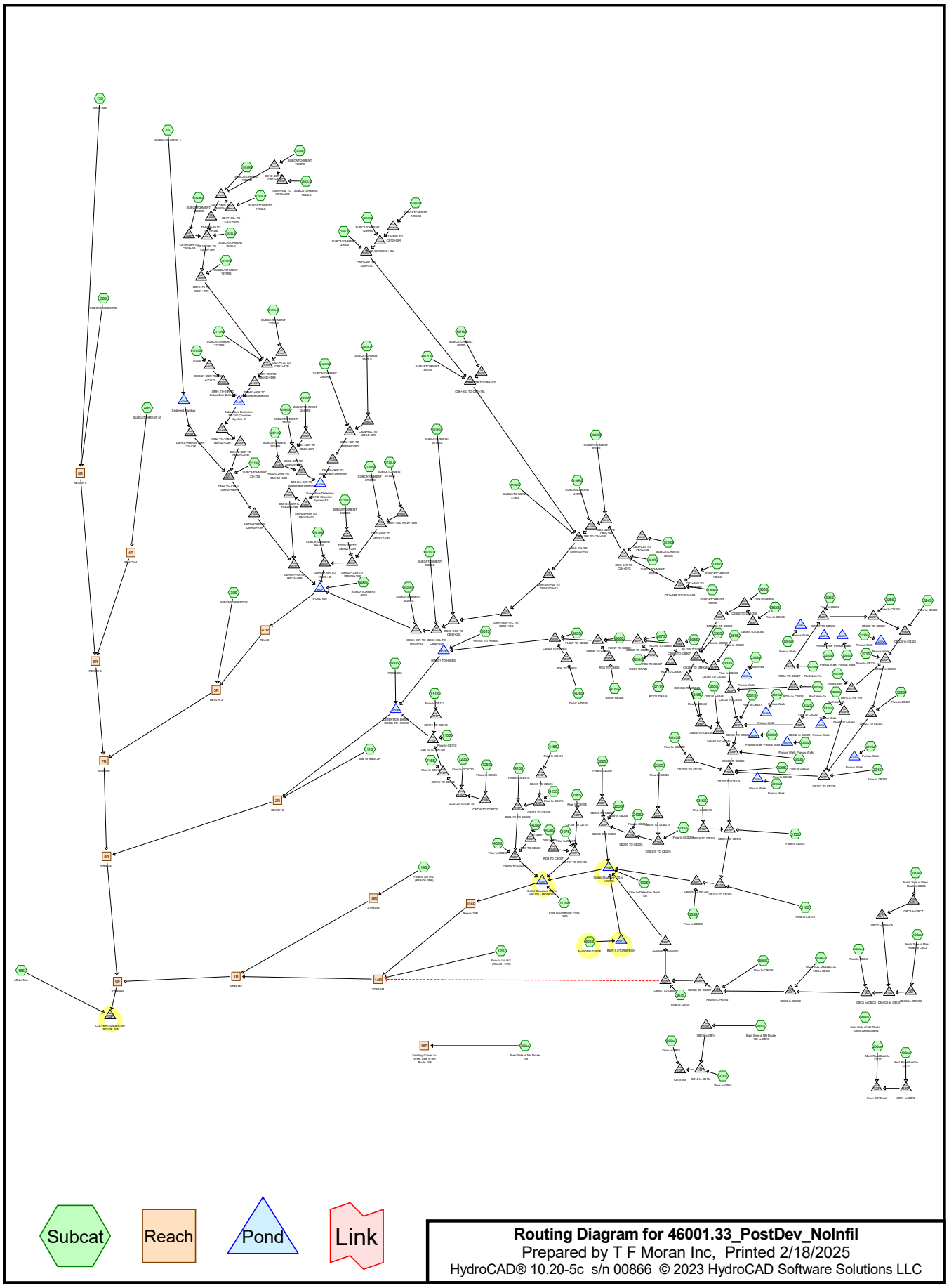
Pond RD5P: RD5 TO CB806 Peak Elev=107.60' Inflow=3.13 cfs 0.248 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=3.13 cfs 0.248 af

Pond RD6P: RD6 TO CB805 Peak Elev=104.02' Inflow=1.62 cfs 0.129 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.62 cfs 0.129 af

Pond RD8P: RD8 TO CB107 Peak Elev=103.01' Inflow=0.38 cfs 0.030 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.38 cfs 0.030 af

Pond RD9P: RD9 TO CB405 Peak Elev=103.00' Inflow=0.26 cfs 0.021 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.26 cfs 0.021 af

Total Runoff Area = 121.896 ac Runoff Volume = 23.410 af Average Runoff Depth = 2.30"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac



Routing Diagram for 46001.33_PostDev_NoInfil

Prepared by T F Moran Inc, Printed 2/18/2025

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Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=2.20"
Tc=0.0 min CN=91 Runoff=2.96 cfs 0.176 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.89' Inflow=6.75 cfs 2.807 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=6.75 cfs 2.807 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.57' Storage=20,040 cf Inflow=5.85 cfs 1.449 af
Outflow=0.87 cfs 1.422 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=102.30' Storage=20,090 cf Inflow=13.22 cfs 1.081 af
Outflow=1.05 cfs 1.081 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.04' Storage=3,489 cf Inflow=2.96 cfs 0.176 af
Outflow=1.09 cfs 0.102 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.176 af Average Runoff Depth = 2.20"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Summary for Subcatchment 505S: McDONALD SITE

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af, Depth= 2.20"
Routed to Pond BMP-1 : BMP-1 STORMTECH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	6,880	61	>75% Grass cover, Good, HSG B
	2,300	74	>75% Grass cover, Good, HSG C
*	25,140	98	Paved parking
*	3,726	98	Paved parking - Porous Pavement
*	3,694	98	Roofs
	41,740	91	Weighted Average
	9,180		21.99% Pervious Area
	32,560		78.01% Impervious Area

Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.45' @ 12.20 hrs

Inflow Area = 120.147 ac, 18.88% Impervious, Inflow Depth > 0.28" for 2 YR event
Inflow = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af, Atten= 0%, Lag= 0.0 min
Primary = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 68.89' @ 12.20 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=6.74 cfs @ 12.20 hrs HW=68.89' (Free Discharge)
1=Culvert (Barrel Controls 6.74 cfs @ 4.17 fps)

Summary for Pond 100AP: Outlet Structure 105 to HW100 - MODIFIED

[80] Warning: Exceeded Pond 107P by 0.09' @ 24.29 hrs (0.03 cfs 0.000 af)

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth = 1.03" for 2 YR event
Inflow = 5.85 cfs @ 12.07 hrs, Volume= 1.449 af
Outflow = 0.87 cfs @ 16.56 hrs, Volume= 1.422 af, Atten= 85%, Lag= 269.6 min
Primary = 0.87 cfs @ 16.56 hrs, Volume= 1.422 af
Routed to Reach 326R : Reach 1BR

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.57' @ 16.56 hrs Surf.Area= 7,314 sf Storage= 20,040 cf
Flood Elev= 104.00' Surf.Area= 10,000 sf Storage= 40,899 cf

Plug-Flow detention time= 413.0 min calculated for 1.422 af (98% of inflow)
Center-of-Mass det. time= 389.4 min (1,452.3 - 1,062.9)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	40,899 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,135	0	0
98.50	4,349	2,121	2,121
99.00	4,780	2,282	4,403
100.00	5,858	5,319	9,722
101.00	6,746	6,302	16,024
102.00	7,741	7,244	23,268
103.00	8,761	8,251	31,519
104.00	10,000	9,381	40,899

Device	Routing	Invert	Outlet Devices
#1	Primary	98.00'	**36.0" Round Culvert** L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 98.00' / 97.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	98.00'	**0.5" W x 43.2" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	101.60'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.90'	**48.0" x 60.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	101.65'	**8.0" Vert. Orifices (4) X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.87 cfs @ 16.56 hrs HW=101.57' TW=98.16' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.87 cfs of 41.92 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.87 cfs @ 6.06 fps)
—**3=Orifice/Grate** (Controls 0.00 cfs)
—**4=Grate** (Controls 0.00 cfs)
—**5=Orifices (4)** (Controls 0.00 cfs)

Summary for Pond 100P: Outlet Structure 110 to HW109

Inflow Area = 15.095 ac, 39.48% Impervious, Inflow Depth = 0.86" for 2 YR event
Inflow = 13.22 cfs @ 12.08 hrs, Volume= 1.081 af
Outflow = 1.05 cfs @ 12.53 hrs, Volume= 1.081 af, Atten= 92%, Lag= 26.9 min
Primary = 1.05 cfs @ 12.53 hrs, Volume= 1.081 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.30' @ 14.38 hrs Surf.Area= 10,172 sf Storage= 20,090 cf
Flood Elev= 106.00' Surf.Area= 33,480 sf Storage= 105,292 cf

Plug-Flow detention time= 342.1 min calculated for 1.081 af (100% of inflow)
Center-of-Mass det. time= 342.2 min (1,158.2 - 815.9)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	105,292 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	0	0	0
99.00	483	121	121
100.00	5,808	3,146	3,266
101.00	6,872	6,340	9,606
102.00	8,510	7,691	17,297
103.00	14,070	11,290	28,587
104.00	24,830	19,450	48,037
105.00	28,100	26,465	74,502
106.00	33,480	30,790	105,292

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.30' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 4.91 sf
#2	Device 1	98.50'	**0.5" x 58.8" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	103.40'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	104.70'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	105.40'	**174.0 deg x 5.0' long x 0.40' rise Sharp-Crested Vee/Trap Weir** Cv= 2.46 (C= 3.08)

Primary OutFlow Max=1.05 cfs @ 12.53 hrs HW=102.07' TW=100.83' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.05 cfs of 26.30 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.05 cfs @ 5.36 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond BMP-1: BMP-1 STORMTECH

DESIGN BY BOHLER
Add 0.705 feet to NAVD88 to get NGVD29 elevations.

Inflow Area = 0.958 ac, 78.01% Impervious, Inflow Depth = 2.20" for 2 YR event
Inflow = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af
Outflow = 1.09 cfs @ 12.16 hrs, Volume= 0.102 af, Atten= 63%, Lag= 10.0 min
Primary = 1.09 cfs @ 12.16 hrs, Volume= 0.102 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.04' @ 12.16 hrs Surf.Area= 2,035 sf Storage= 3,489 cf

Plug-Flow detention time= 201.2 min calculated for 0.102 af (58% of inflow)
Center-of-Mass det. time= 95.5 min (892.9 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	102.55'	1,943 cf	**30.00'W x 67.82'L x 3.75'H Field A** 7,629 cf Overall - 2,773 cf Embedded = 4,856 cf x 40.0% Voids
#2A	103.05'	2,773 cf	**ADS_StormTech SC-800 +Cap** x 54 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 54 Chambers in 6 Rows Cap Storage= 3.4 cf x 2 x 6 rows = 41.0 cf
		4,716 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	103.05'	**12.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.05' / 102.85' S= 0.0182 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	104.85'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.08 cfs @ 12.16 hrs HW=105.04' TW=101.35' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 1.08 cfs of 4.62 cfs potential flow)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.08 cfs @ 1.43 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=3.73"
Tc=0.0 min CN=91 Runoff=4.88 cfs 0.298 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.48' Inflow=15.72 cfs 7.087 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=15.72 cfs 7.087 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.94' Storage=22,813 cf Inflow=9.21 cfs 2.734 af
Outflow=2.69 cfs 2.696 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=103.82' Storage=43,758 cf Inflow=27.10 cfs 2.134 af
Outflow=2.17 cfs 2.134 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.34' Storage=3,864 cf Inflow=4.88 cfs 0.298 af
Outflow=4.42 cfs 0.224 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.298 af Average Runoff Depth = 3.73"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=4.97"
Tc=0.0 min CN=91 Runoff=6.39 cfs 0.397 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=70.60' Inflow=39.39 cfs 12.043 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=39.39 cfs 12.043 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.27' Storage=25,356 cf Inflow=11.71 cfs 3.910 af
Outflow=6.39 cfs 3.869 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.48' Storage=60,208 cf Inflow=38.78 cfs 3.123 af
Outflow=4.99 cfs 3.123 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.51' Storage=4,042 cf Inflow=6.39 cfs 0.397 af
Outflow=5.29 cfs 0.322 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.397 af Average Runoff Depth = 4.97"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=6.12"
Tc=0.0 min CN=91 Runoff=7.78 cfs 0.488 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.72' Inflow=68.05 cfs 17.710 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=68.05 cfs 17.710 af

Pond 100AP: Outlet Structure 105 to Peak Elev=103.00' Storage=31,515 cf Inflow=17.14 cfs 5.082 af
Outflow=15.05 cfs 5.038 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.95' Storage=72,964 cf Inflow=49.40 cfs 4.122 af
Outflow=14.25 cfs 4.122 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.86' Storage=4,358 cf Inflow=7.78 cfs 0.488 af
Outflow=5.68 cfs 0.414 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.488 af Average Runoff Depth = 6.12"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Section 6: Post Development Assuming No Infiltration @BMP-1

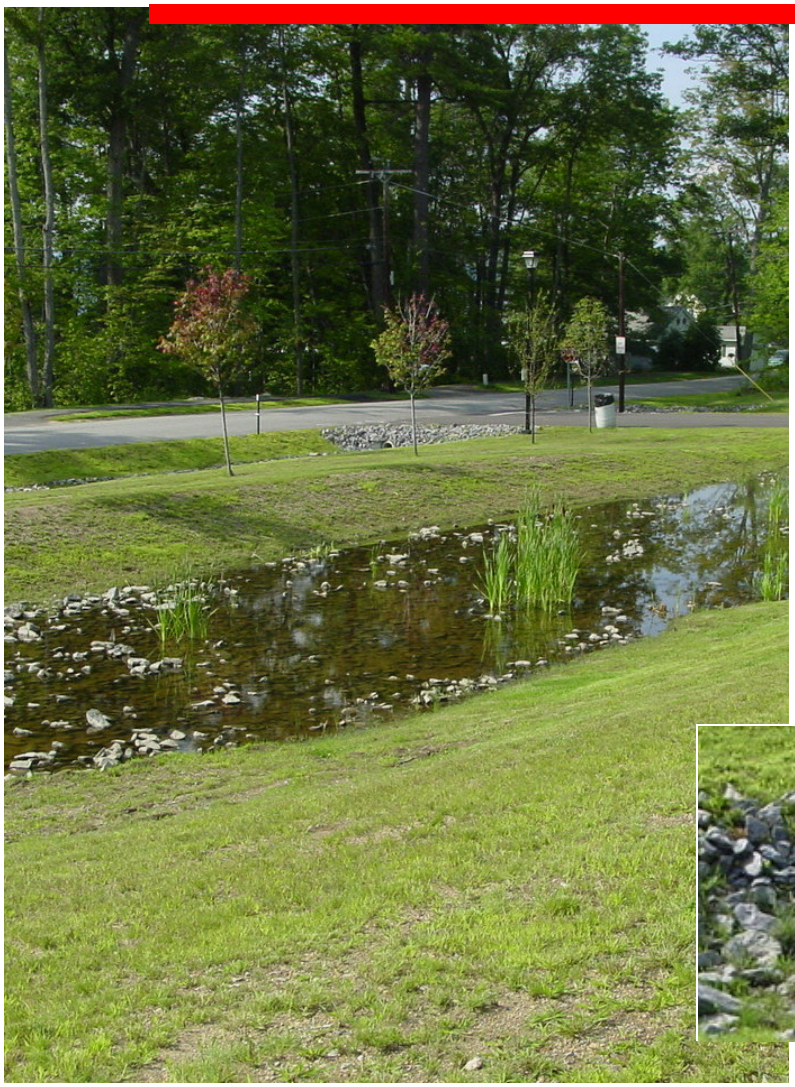
Basin Freeboard Summary (50-year):

Basin ID	Top of berm	Water Surface Elevation	**Freeboard**	Check
100P	106.0	104.95	1.05	Okay
100AP	104.0	103.00	1.00	Okay

BMP-1 Top of Stone: 106.50
BMP-1 50 Years Water Surface Elevation: 105.86 < Top of Stone OKAY

Discharge Point Summary

Discharge	**PRE-DEVELOPMENT**				**POST-DEVELOPMENT (proposed 2025)**			
Point	**2-yr**	**10-yr**	**25-yr**	**50-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
10P								
Qout (cfs)	7.0	24.8	56.6	93.3	6.8	15.7	39.4	68.1
Volume (af)	1.42	5.23	9.86	15.14	2.81	7.09	12.04	17.71



INSPECTION AND MAINTENANCE MANUAL

SUBSURFACE STORMWATER AND SURFACE STORMWATER SYSTEMS

May 25, 2006

Revised June 19, 2012 (Commercial Revised)
Revised September 13, 2012
2nd Revision October 1, 2012
3rd Revision October 4, 2012



Residential – Commercial Mixed Use Development: Senior Housing

Mast Road and Durham Road (NH Route 108)
DOVER, NH 03820

Prepared for:
Housing Initiatives of New England Corp.

Prepared by

TFMORAN INC.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects

554 Union Street, Manchester, NH 03104
(603) 647-2242 **www.tfmoran.com**

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Inspection & Maintenance Manual

HOUSING INITIATIVES SENIOR HOUSING
Grapevine Drive, Dover, NH

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Description of Project

Housing Initiatives of New England Corp is proposing revisions to the previously permitted Dover Mixed-Use Project, Commercial Phase on tax map H lot 4-3 at the intersection of Mast Road and Route 108 in Dover, NH. The site is located within the I-4 and B-4 zoning districts in the City of Dover with a portion of the residential phase located in the General Residential and Agricultural district in the Town of Madbury.

Other areas of the site are completed or are currently under construction, including a Hannaford grocery store and the residential components on tax map H lot 4. The project described herein refers to the proposed revisions which are only applicable to the commercial phase of the project, which involve revising the previously approved 15,600 sf medical office building to be a 60-unit congregate care facility.

Approval by the NHDES Alteration of Terrain Bureau and Conditional Approval by the Dover Planning Board have been received.

The revisions proposed as part of this project provide the appropriate stormwater management systems in accordance with the intent of the original design, and the requirements of NHDES and the City of Dover.

Responsible Party

Facility Owner: Housing Initiatives of New England Corp.

Address: 36 Union Wharf, Box 12, Portland, ME 04101

Reporting Requirements

An annual report shall be submitted to the City of Dover Engineering Division in December of each year. The report should document the inspections completed and any maintenance performed on the system during the previous 12 months.

Description of Stormwater Practices

The following descriptions are provided based on information contained in Volume 2 of the New Hampshire Stormwater Manual dated December 2008.

CATCH BASINS

Catch basins consist of a manhole-type structure with an inlet grate, an outlet pipe connected to the piped drainage system, and a sump with a depth several times the diameter of the outlet pipe. The inlet grate is located at the surface, and is sometimes combined with a vertical inlet integrated with a street or parking area curb. The sump's purpose is to capture coarse sediments and debris from the runoff intercepted by the structure. The outlet pipes are fitted with a "hood" consisting of a cast metal or formed plastic fitting, designed to prevent floating materials from exiting the structure.

The site design includes catch basins in both parking lots, as well as 3 catch basins on the east side of the building and one catch basin in the rain garden off the southwest corner of the building.

RAIN GARDEN AREA

A rain garden (sometimes referred to as a "bioretention area") is a type of filtration BMP designed to collect and filter moderate amounts of stormwater runoff using conditioned planting soil beds, gravel beds and vegetation within shallow depressions. The rain garden has been designed to infiltrate the treated water directly to the subsoil. Rain gardens are capable of reducing sediment, nutrients, oil and grease, and trace metals. Rain gardens should be sited in close proximity to the origin of the stormwater runoff to be treated.

The major difference between rain gardens and other filtration systems is the use of vegetation. A typical surface sand filter is designed to be maintained with no vegetation, whereas a rain garden is planted with a variety of shrubs and perennials whose roots assist with pollutant uptake. The use of vegetation allows these systems to blend in with other landscaping features.

One rain garden has been incorporated into the site design, off the southwest corner of the building.

POROUS PAVEMENT

Porous pavement consists of a porous surface, base, and sub-base materials which allow penetration of runoff through the surface into underlying soils. The surface materials for permeable pavement can consist of paving blocks or grids, pervious asphalt, or pervious concrete. These materials are installed on a base which serves as a filter course between the pavement surface and the underlying sub-base material.

Although traffic loading capacities vary, porous pavement alternatives are generally appropriate for low traffic areas (e.g. sidewalks, parking lots, overflow parking, residential roads). Pavement

type and thickness are selected based on anticipated load (light, moderate, heavy) and maintenance requirements. Careful maintenance is essential for long term use and effectiveness.

Frequently, porous pavements filter only the runoff generated on the pavement surface itself. However, runoff from other areas can be directed to porous pavement if properly designed.

Porous asphalt is very similar to conventional asphalt except that it is mixed without particles smaller than coarse sand (less than 600 µm or No. 30 sieve). Without these smaller size particles, water is able to pass through the surface and into a crushed stone storage area. The lack of fine particles in the asphalt, however, limits the loading capacity of the asphalt relative to conventional asphalt. Because of this limitation, pervious asphalt should not be used in high-traffic areas. An advantage to the use of porous asphalt is the reduced need for stormwater conveyance systems and other additional BMPs.

The site design includes porous sidewalks.

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually; once following snow-melt (spring) and once following leaf-drop (fall):

- Catch Basins
- Rain Garden Area
- Porous Pavement*

* Concrete pavers may be installed as an alternate to porous sidewalks.

Stormwater Practices – Maintenance Guidelines

I. CATCH BASIN - MAINTENANCE PROCEDURES:

STEP 1) INSPECT CATCH BASIN SEMI-ANNUALLY FOR SEDIMENT.
STEP 2) REMOVE GRATES AND COVERS.
STEP 3) SKIM OFF OILS AND FLOATABLES.
STEP 4) USING A STADIA ROD, MEASURE THE DEPTH OF SEDIMENT.
STEP 5) IF SEDIMENT IS AT A DEPTH GREATER THAN 6" PROCEED TO STEP 6, IF NOT, PROCEED TO STEP 7.
STEP 6) VACUUM OR MANUALLY REMOVE SEDIMENT. REPLACE GRATES OR COVERS.
STEP 7) RECORD DEPTH & DATE AND SCHEDULE NEXT INSPECTION.

II. RAIN GARDEN AREA MONITORING:

STEP 1) INSPECT AND REMOVE ROUTINELY ANY ACCUMULATED DEBRIS.
STEP 2) INSPECT PLANT SPECIES SEMI-ANNUALLY AND REMOVE DEAD, SERIOUSLY DISEASED, PLANTS LACKING SUFFICIENT VIGOR, OR PLANTS EXHIBITING SIZABLE DIE-BACK. REPLACE REMOVED VEGETATION AT THE SAME SIZE AND KIND REMOVED. PRUNE OR WEED, AS NECESSARY, TO MAINTAIN APPEARANCE.
STEP 3) INSPECT SUBSTRATE MEDIUM. REPLACE WHERE EROSION EVIDENT; ADD SUBSTRATE AMENDMENTS TO MAINTAIN PROPER SOIL pH; ADJUST SOIL MOISTURE CONTENT, AS NEEDED; REPLACE MEDIUM WHEN LEVELS OF POLLUTANTS REACH TOXIC LEVELS AND PLANT GROWTH IS IMPAIRED.
STEP 4) INSPECT EMBANKMENTS FOR NUISANCE PROBLEMS (e.g. EROSION, INVASIVE SPECIES OR BURROWING ANIMALS) AND REPAIR, IF NECESSARY.
STEP 5) INSPECT EMBANKMENTS FOR STRUCTURAL INTEGRITY, ESPECIALLY FOLLOWING MAJOR STORM EVENT AND CONSULT WITH PROJECT ENGINEER FOR REPAIR.
STEP 6) INSPECT RAIN GARDEN BOTTOM AND REMOVE ANY ACCUMULATED SEDIMENTS.

III. POROUS PAVEMENT – MAINTENANCE PROCEDURES:

STEP 1) INSPECT SIDEWALKS AT LEAST TWICE A YEAR (SPRING AND FALL) AND FOLLOWING ANY LARGE RAINFALL EVENT TO ENSURE THAT THE PAVEMENT IS DRAINING PROPERLY.
STEP 2) IF DETERIORATION OR SPALLING HAS OCCURRED, THEN MEASURES SHALL BE TAKEN TO REPAIR THE PAVEMENT.
STEP3) REMOVE AND DISPOSE OF ANY ACCUMULATED DEBRIS IN A LEGAL MANNER.
STEP 4) THERE SHALL BE NO WINTER SANDING OF POROUS ASPHALT.
STEP 5) POROUS ASPHALT SHOULD BE VACUUM SWEPT WITH A COMMERCIAL UNIT (DO NOT USE BRUSH WASH OR COMPRESSED AIR UNIT) AT LEAST TWO TIMES PER YEAR, FOLLOWED BY A HIGH PRESSURE HOSING TO FREE PORES IN THE TOP LAYER FROM CLOGGING.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

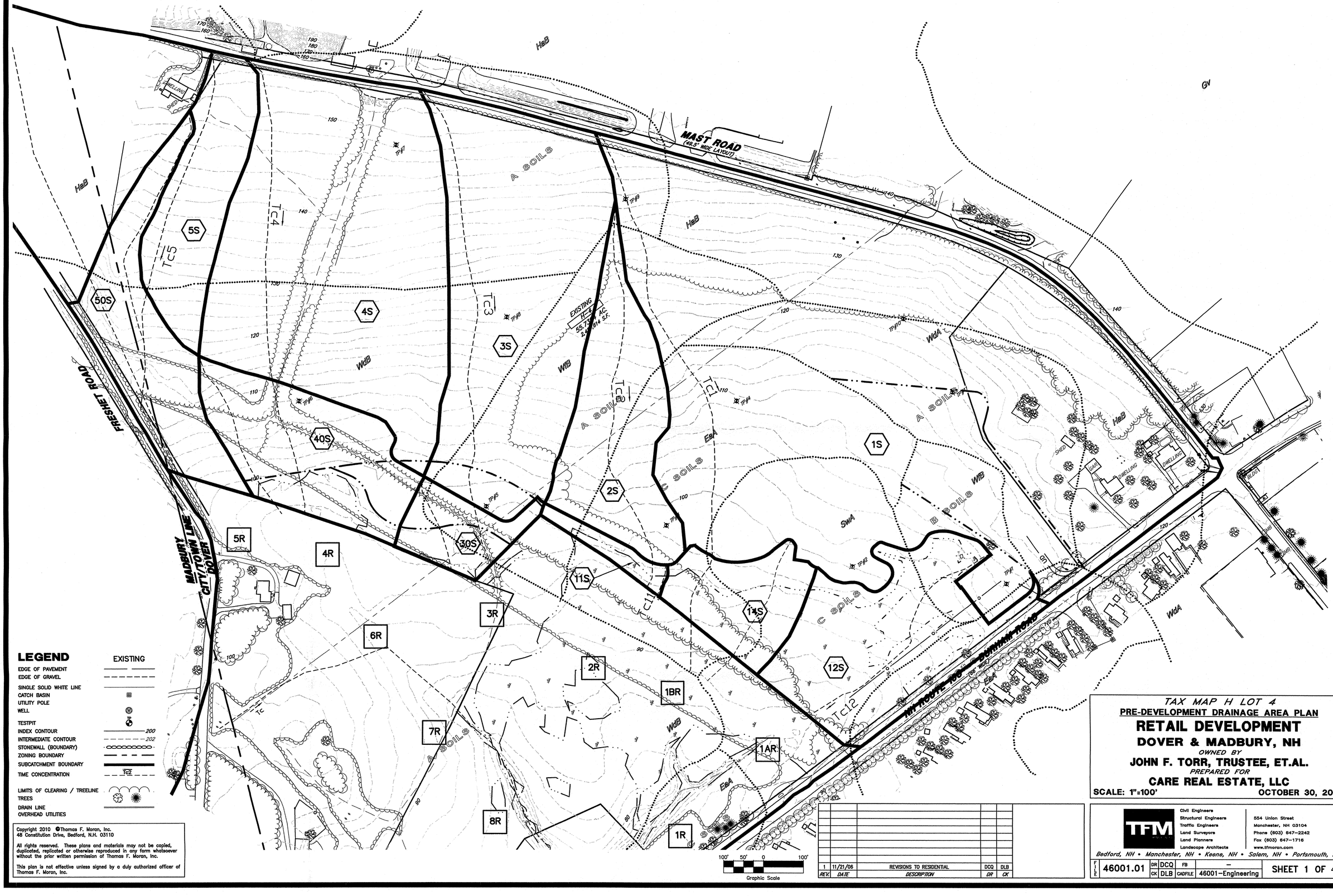
Inspection Checklist

Date:	**Project Name: Housing Initiatives Senior Housing**
Inspector's Name/Title:	
Inspector's Contact Information:	

☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: All

	BMP* **Refer to following Inspection & Maintenance Plan for BMP location**	Maintenance Required	Corrective Action Needed and Notes
1	Rain Garden	☐ Yes ☐ No	
2	Catch Basin DCB 331	☐ Yes ☐ No	
3	Catch Basin CB 332	☐ Yes ☐ No	
4	Catch Basin CB 333	☐ Yes ☐ No	
5	Catch Basin CB 321	☐ Yes ☐ No	
6	Catch Basin CB 322	☐ Yes ☐ No	
7	Catch Basin CB 323	☐ Yes ☐ No	
8	Catch Basin CB 324	☐ Yes ☐ No	
9	Catch Basin CB 325	☐ Yes ☐ No	
10	Catch Basin CB 326	☐ Yes ☐ No	
11	Catch Basin DCB 327	☐ Yes ☐ No	

12	Porous Sidewalk South Side of Building	☐ Yes ☐ No	
13	Porous Sidewalk Parking Lot Island	☐ Yes ☐ No	
14	Porous Sidewalk West Side of Driveway	☐ Yes ☐ No	
15	Porous Sidewalk Gazebo Area	☐ Yes ☐ No	
16	Porous Sidewalk East Side of Building	☐ Yes ☐ No	
17	Porous Sidewalk North Side of Building	☐ Yes ☐ No	
18	Porous Sidewalk West Side of Building	☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	



LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	W
TESTPIT	TP
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	

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REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=100' **OCTOBER 30, 2006**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects
554 Union Street
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Phone (603) 647-2242
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FILE	DR	CK	CADFILE	
46001.01	DCQ	DLB	46001-Engineering	SHEET 1 OF 4

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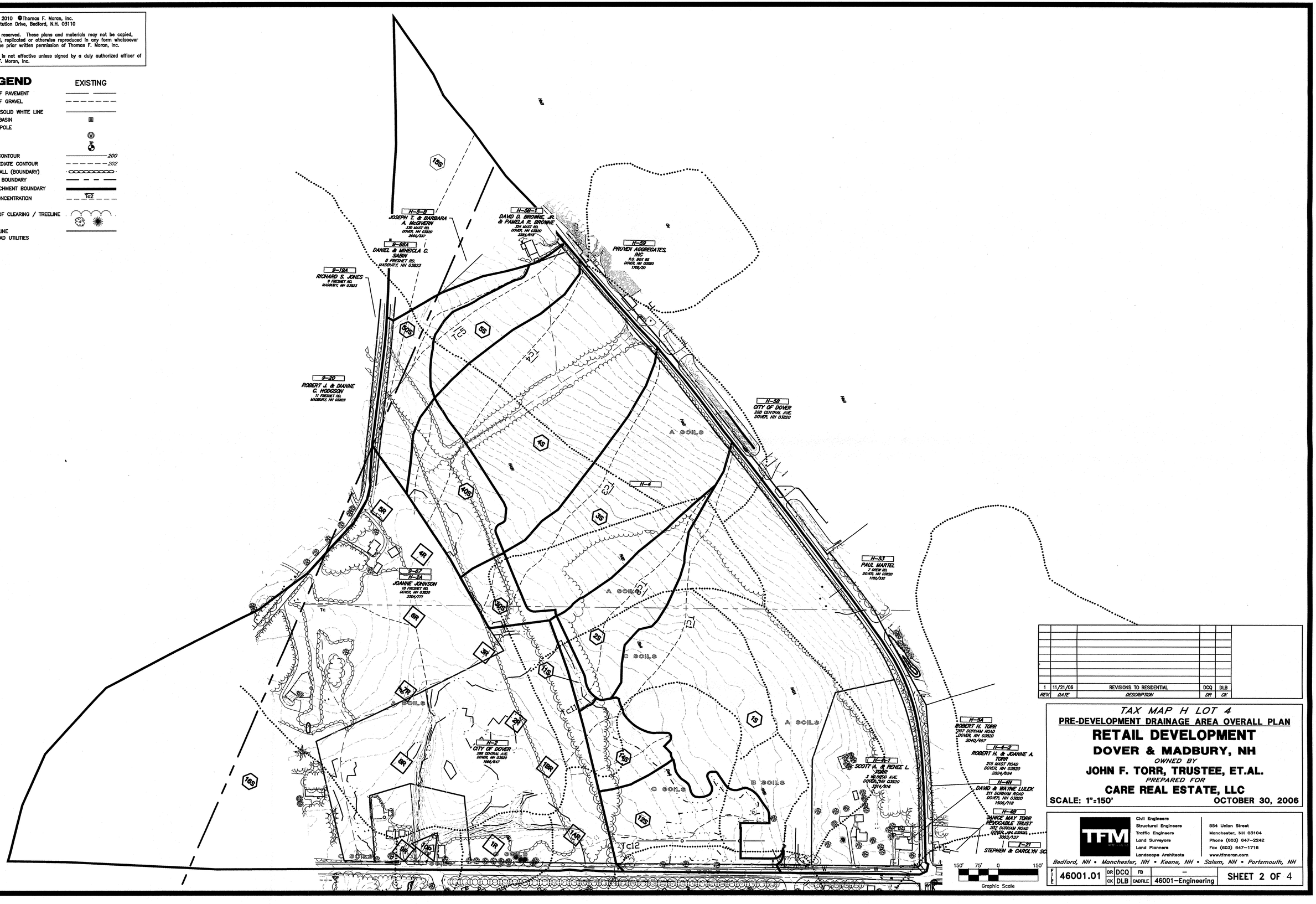
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LEGEND

EXISTING

- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- SINGLE SOLID WHITE LINE
- CATCH BASIN
- UTILITY POLE
- WELL
- TESTPIT
- INDEX CONTOUR — 200
- INTERMEDIATE CONTOUR — 202
- STONEWALL (BOUNDARY)
- ZONING BOUNDARY
- SUBCATCHMENT BOUNDARY
- TIME CONCENTRATION — Tc2
- LIMITS OF CLEARING / TREELINE
- TREES
- DRAIN LINE
- OVERHEAD UTILITIES



REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=150' OCTOBER 30, 2006

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FILE		DR	CK	FB	CADFILE	
46001.01		DCQ	DLB	–	46001-Engineering	SHEET 2 OF 4



LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- 5 — SUBCATCHMENT
- 1 — POND
- 9 — REACH
- A — DISCHARGE POINT

TAX MAP H LOT 4-3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
n/f VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

AND

APPLICANT/DEVELOPER
BOHLER ENGINEERING, LLC
352 TURNPIKE RD, 3RD FLOOR
SOUTHBOROUGH, MA 01772

SCALE: 1"=100'

DECEMBER 5, 2024

REV.	DATE	DESCRIPTION	DR	CK
1	2/14/25	REVISED PER CITY COMMENTS	JMR	RED

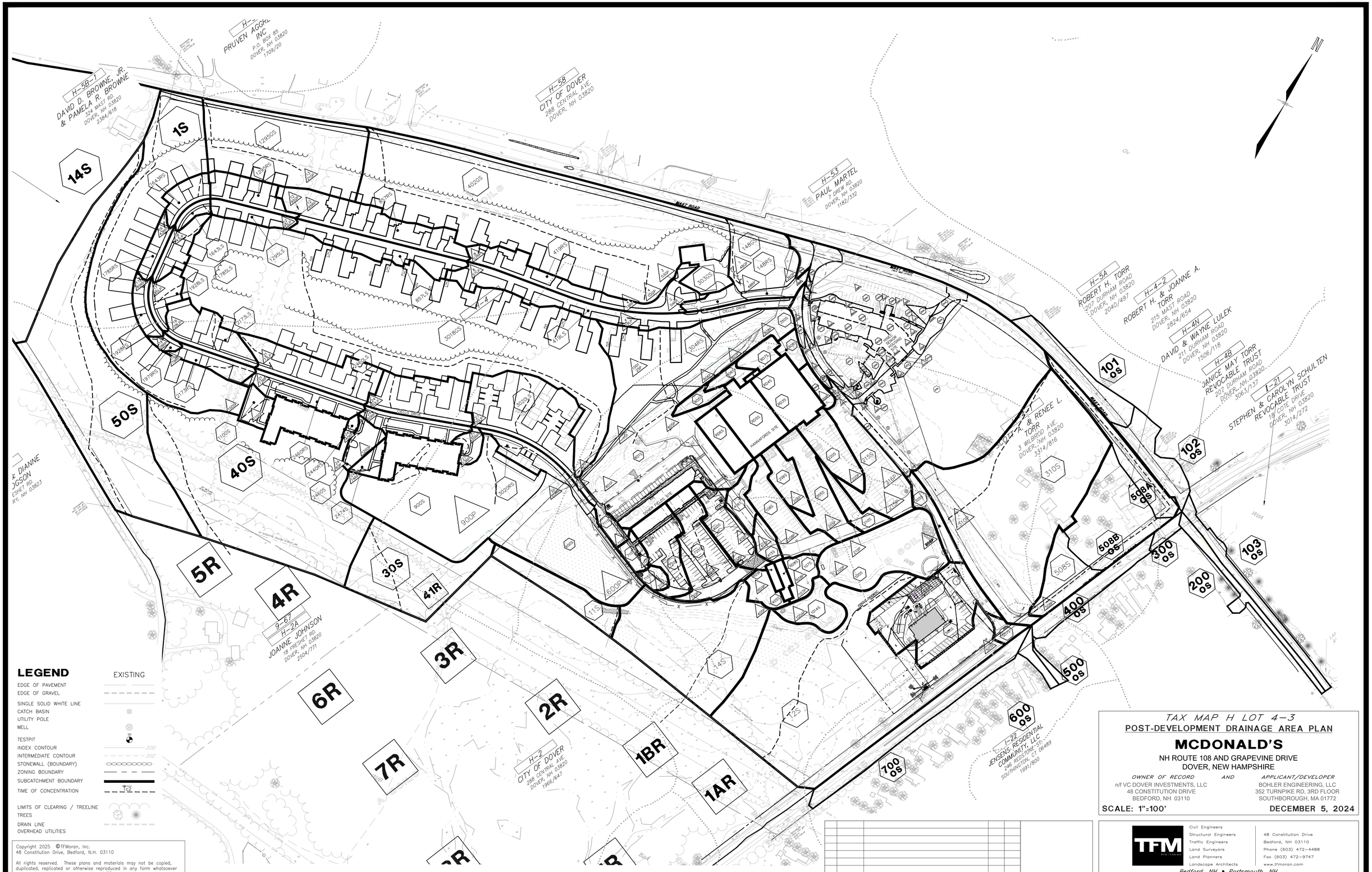
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PROJ. NO.	DR	CK	FB	CADFILE	SHEET
46001.33	JMR	RED	–	46001.33 DRAINAGE	SHEET 3 OF 4



LEGEND

EXISTING

- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- SINGLE SOLID WHITE LINE
- CATCH BASIN
- UTILITY POLE
- WELL
- TESTPIT
- INDEX CONTOUR — 200
- INTERMEDIATE CONTOUR — 202
- STONEWALL (BOUNDARY)
- ZONING BOUNDARY
- SUBCATCHMENT BOUNDARY
- TIME OF CONCENTRATION — Tc2
- LIMITS OF CLEARING / TREELINE
- TREES
- DRAIN LINE
- OVERHEAD UTILITIES

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100' 50' 0 100'
Graphic Scale

REV.	DATE	DESCRIPTION	DR	CK
1	2/14/25	REVISED PER CITY COMMENTS	JMR	RED

TAX MAP H LOT 4–3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
n/f VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

AND

APPLICANT/DEVELOPER
BOHLER ENGINEERING, LLC
352 TURNPIKE RD, 3RD FLOOR
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SCALE: 1"=100' **DECEMBER 5, 2024**

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PRT: 1 | 46001.33 | DR JMR | CK RED | FB – | CADFILE 46001.33 DRAINAGE

STORMWATER OPERATION AND MAINTENANCE PLAN

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY DURING CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY POST CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

Construction Phase

During the construction phase, all erosion control devices and measures shall be maintained in accordance with the final record plans, local/state approvals and conditions, the EPA Construction General Permit and the Stormwater Pollution Prevention Plan (SWPPP) if applicable. Additionally, the maintenance of all erosion / siltation control measures during construction shall be the responsibility of the general contractor. Contact information of the OWNER and CONTRACTOR shall be listed in the SWPPP for this site. The SWPPP also includes information regarding construction period allowable and illicit discharges, housekeeping and emergency response procedures. Upon proper notice to the property owner, the Town/City or its authorized designee shall be allowed to enter the property at a reasonable time and in a reasonable manner for the purposes of inspection.

Post Development Controls

Once construction is completed, the post development stormwater controls are to be operated and maintained in compliance with the following permanent procedures (note that the continued implementation of these procedures shall be the responsibility of the Owner or its assignee):

1. Parking lots: Sweep at least one (1) time per year and on a more frequent basis depending on sanding operations, preferably as soon as possible after the snow melts to reduce the amount of sand, grit, and debris and associated pollutants from winter sanding from entering surface waters. Swept areas shall include all parking, drive aisles, and access aisles. All resulting sweepings shall be collected and properly disposed of offsite in accordance with NHDES and other applicable requirements.

2. Catch basins, yard drains, manholes and piping: Inspect two (2) times per year at the end of foliage and snow-removal seasons. These features shall be cleaned two (2) times per year or whenever the depth of deposits is half the sump depth. Accumulated sediment and hydrocarbons present must be removed and properly disposed of off-site in accordance with NHDES and other applicable requirements.

3. Riprap apron / Scour Hole: Riprap and scour holes should be checked at least annually and after every major storm event (generally equal or greater to 3.0 inches in 24 hours) for displaced stones, slumping, and erosion at edges, especially downstream or downslope. If the riprap is damaged, it should be repaired before further damage can take place. Note and repair any erosion, stone displacement or low spots in the areas. Woody vegetation should be removed from the riprap annually.

4. Underground Infiltration Basins: Follow manufacturer's recommendations (attached). At a minimum, inspection of infiltration components at least twice annually and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection. Inspection of pretreatment measures at least twice annually, and removal of accumulated sediment as warranted by inspection, but no less than once annually. If an infiltration 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 infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration basin.

5. Water Quality Swale: Inspect swales for the first few months after construction and at least twice a year thereafter to make sure vegetation is adequate and slopes are not eroding. Check for rilling and gullying. Repair eroded areas and revegetate. Mow dry swales as needed. Wet swales may not need to be mowed depending on vegetation. Do not cut the grass shorter than four inches, and do not let the grass height exceed six inches. Regular maintenance includes mowing, fertilizing, liming, watering, pruning, weeding, and pest control as necessary. Remove sediment and debris manually at least once a year. Re-seed as necessary. Any sediment removed shall be disposed of in accordance with NHDES and other applicable requirements.

6. Trench Drain: Inspect four (4) times per year at the end of foliage and snow-removal seasons and throughout the summer season. These features shall be cleaned four (4) times per year including at the end of snow-removal season to remove debris accumulated during the winter months, in the summer to prevent debris build-up, maintain efficient drainage, and inspect for any signs of blockage, and in the autumn to remove leaves, twigs, and other debris to prepare the channel drainage system for increased winter runoff. These features shall also be cleaned whenever the depth of deposits is half the sump depth to prevent excess sediment build up. Accumulated sediment and hydrocarbons present must be removed and properly disposed of off-site in accordance with NHDES and other applicable requirements.

All components of the stormwater system shall be accessible by the owner or their assignee.

STORMWATER MANAGEMENT SYSTEM

POST-CONSTRUCTION INSPECTION REPORT

LOCATION:

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

NAME OF INSPECTOR:	INSPECTION DATE:
Note Condition of the Following (sediment depth, debris, standing water, damage, etc.):	
Catch Basins:	
Discharge Points/ Flared End Sections / Rip Rap:	
Underground Infiltration Basins:	
Water Quality Swale:	
Trench Drain:	
Other:	

Note Recommended Actions to be taken (sediment and/or debris removal, repairs, etc.):
Catch Basins:
Discharge Points/ Flared End Sections / Rip Rap:
Underground Infiltration Basins:
Water Quality Swale:
Trench Drain:
Other:
Comments:

STORMWATER INSPECTION AND MAINTENANCE LOG FORM

McDonald's
NH Route 108 & Grapevine Drive – Dover, NH 03820

Stormwater Management Practice	Responsible Party	Date	Maintenance Activity Performed

LONG-TERM POLLUTION PREVENTION PLAN

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY DURING CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY POST CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

For this site, the Long-Term Pollution Prevention Plan (LTPPP) will consist of the following:

- The property owner shall be responsible for "good housekeeping" including proper periodic maintenance of building and pavement areas, curbing, landscaping, etc.
- Proper storage and removal of solid waste (dumpsters).
- Sweeping of roadways, parking lots, drive aisles and access aisles a minimum of twice per year with a commercial cleaning unit. Any sediment removed shall be disposed of in accordance with applicable local and state requirements.
- Regular inspections and maintenance of Stormwater Management System as noted in the "O&M Plan".
- No outdoor maintenance or washing of vehicles allowed.
- Trash and other debris shall be removed from all areas of the site at least twice yearly.
- Reseed any bare areas as soon as they occur. Erosion control measures shall be installed in these areas to prevent deposits of sediment from entering the drainage system.
- Grass shall be maintained at a minimum blade height of two to three inches and only 1/3 of the plant height shall be removed at a time. Clippings shall not be disposed of within stormwater management areas or adjacent resource areas.
- Deliveries shall be monitored by owner or owner's representative to ensure proper delivery and in the event that a spillage occurs it shall be contained and cleaned up immediately in accordance with the spill prevention program for the project.

- Recycle materials whenever possible. Provide separate containers for recycle materials. Recycling products will be removed by a certified waste hauler.

- Long-Term Pollution Prevention measures during winter conditions:

    - Snow removal shall be the responsibility of the property owner. Snow shall not be plowed, dumped and/or placed in forebays, infiltration basins or similar stormwater controls. Salting and/or sanding of pavement / walkway areas during winter conditions shall only be done in accordance with all state/local requirements and approvals.

    - Snow piles shall be located adjacent to or on pervious surfaces in upland areas. This will allow snow melt water to filter into the soil, leaving behind sand and debris which can be removed in the springtime.

    - In no case shall snow be disposed of or stored in resource areas (wetlands, floodplain, streams, or other water bodies).

    - If necessary, stockpiled snow will be removed from the Site and disposed of at an off-site location in accordance with all local, state and federal regulations.

    - The amount of sand and deicing chemicals shall be kept at the minimum amount required to provide safe pedestrian and vehicle travel.

    - Deicing chemicals are recommended as a pretreatment to storm events to minimize the amount of applied sand.

    - Sand and deicing chemicals should be stockpiled under covered storage facilities that prevent precipitation and adjacent runoff from coming in contact with the deicing materials. Stockpile areas shall be located outside resource areas.

    - The primary agents used for deicing at parking lots, sidewalks and the access roads shall consist of salt alternatives such as calcium carbonate ($CaCO3$) or potassium chloride (KCl).

SPILL PREVENTION AND RESPONSE PROCEDURES (POST CONSTRUCTION)

In order to prevent or minimize the potential for a spill of Hazardous Substances or Oil or come into contact with stormwater, the following steps will be implemented:

1. All Hazardous Substances or Oil (such as pesticides, petroleum products, fertilizers, detergents, acids, paints, paint solvents, cleaning solvents, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided on site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

5. It is the OWNER's responsibility to ensure that all Hazardous Waste on site is disposed of properly by a licensed hazardous material disposal company. The OWNER is responsible for not exceeding Hazardous Waste storage requirements mandated by the EPA or state and local authorities.

In the event of a spill of Hazardous Substances or Oil, the following procedures should be followed:

1. All measures should be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to stormwater or off-site. (The spill area should be kept well ventilated and personnel should wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.)

2. For spills of less than five (5) gallons of material, proceed with source control and containment, clean-up with absorbent materials or other applicable means unless an imminent hazard or other circumstances dictate that the spill should be treated by a professional emergency response contractor.

3. For spills greater than five (5) gallons of material immediately contact the NHDES at the toll-free 24-hour statewide emergency number: **1-603-271-3899**, the local fire department (**9-1-1**) and an approved emergency response contractor. Provide information on the type of material spilled, the location of the spill, the quantity spilled, and the time of the spill to the emergency response contractor or coordinator, and proceed with prevention, containment and/or clean-up if so desired. (Use the form provided, or similar).

4. If there is a Reportable Quantity (RQ) release, then the National Response Center should be notified immediately at (800) 424-8802; within 14 days a report should be submitted to the EPA regional office describing the release, the date and circumstances of the release and the steps taken to prevent another release. This Pollution Prevention Plan should be updated to reflect any such steps or actions taken and measures to prevent the same from reoccurring.

SPILL PREVENTION CONTROL AND COUNTERMEASURE FORM

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

Where a release containing a hazardous substance occurs, the following steps shall be taken by the facility manager and/or supervisor:

1. Immediately notify The City of Dover Fire Department (at **9-1-1**)

2. All measures must be taken to contain and abate the spill and to prevent the discharge of the pollutant(s) to off-site locations, receiving waters, wetlands and/or resource areas.

3. Notify the City of Dover Health Officer at (603) 516-6038 and the Conservation Commission at (603) 781-7297.

4. Provide documentation from licensed contractor showing disposal and cleanup procedures were completed as well as details on chemicals that were spilled to the Health Officer and Conservation Commission.

Date of spill:_____ Time:_____ Reported By:_____

Weather Conditions:_____

Material Spilled	**Location of Spill**	**Approximate Quantity of Spill (in gallons)**	**Agency(s) Notified**	**Date of Notification**

Cause of Spill:_____

_____

Measures Taken to Clean up Spill:_____

_____

Type of equipment: _____ Make: _____ Size:_____

License or S/N: _____

Location and Method of Disposal_____

_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring:_____

_____

_____

Additional Contact Numbers:

- NHDES SPILL RESPONSE EMERGENCY PHONE:
  - MON-FRI 8AM-4PM: (603) 271-3899
  - ALL OTHER TIMES: (603) 223-4381
- NATIONAL RESPONSE CENTER PHONE: (800) 424-8802
- U.S. ENVIRONMENTAL PROTECTION AGENCY PHONE: (888) 372-7341

Isolator® Row Plus
O&M Manual



ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

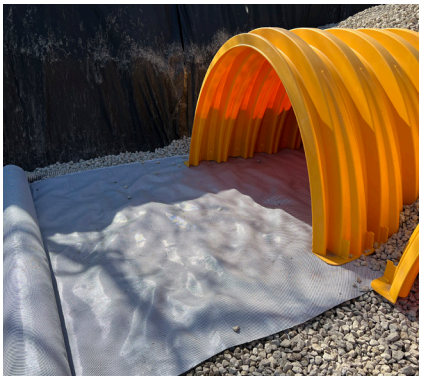
The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

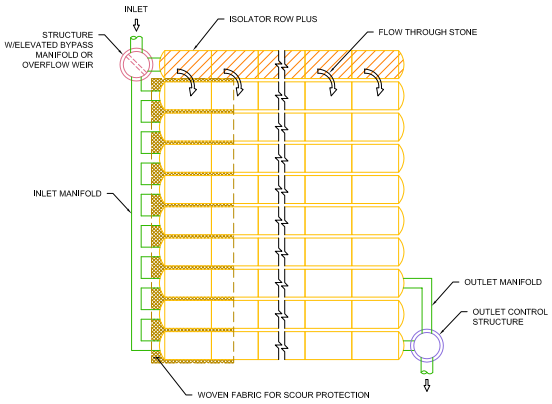
Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*



Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

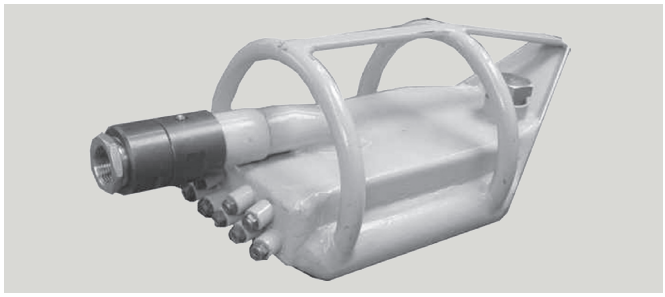
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

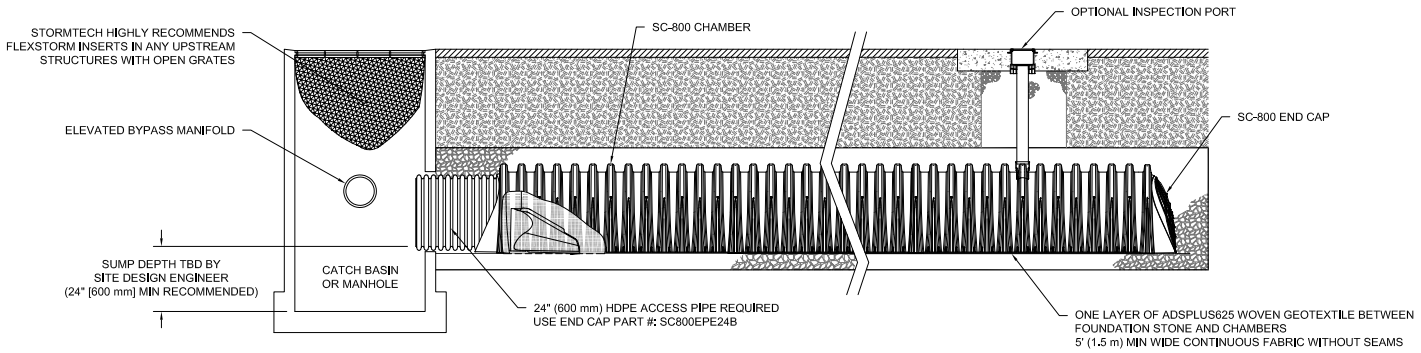
Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**







StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

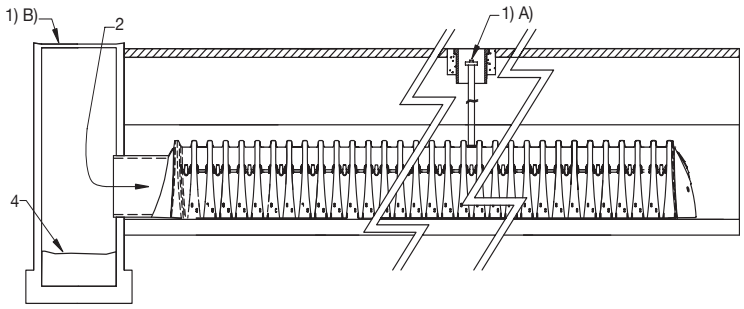
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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Proposed McDonald's
Durham Road & Grapevine Drive
Dover, NH
Bohler Job Number: MAA240177.00
February 18, 2025

Rip Rap Sizing Calculations

Rip Rap Sizing Calculations						
Design Period Storm:		**100**	**Year**			
Location	Pipe Size (in)	Pipe Size (ft)	Q (cfs)	TW* (ft)	D_{50} (ft)	D_{50**} (in)
B-10	12	1.0	0.86	0.3	0.03	**6**
C-10	12	1.0	1.77	0.3	0.09	**6**
C-20	12	1.0	1.77	0.3	0.09	**6**

Based on Eq. 11.35 of ConnDOT Drainage Manual

* Assume tailwater =
** Q<10 cfs - min. 6" stone size, Q>10 cfs - min. 12" stone size

Outlet Protection Sizing Calculations						
Design Period Storm:		**100**	**Year**			
Location	Pipe Size (in)	Pipe Size (ft)	Q (cfs)	W1 (ft)	La (ft)	W2 (ft)
B-10	12	1.0	0.86	3.00	10	10
C-10	12	1.0	1.77	3.00	10	12
C-20	12	1.0	1.77	3.00	10	12

Based ConnDOT Drainage Manual - Type A Riprap Apron

Prepared By: Bohler Engineering
352 Turnpike Road
Southborough, MA 01772
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WHITESTONE
An Employee-Owned Company

3 EXECUTIVE PARK DRIVE
SUITE 202
BEDFORD, NH 03110
603.514.2230
whitestoneassoc.com

REPORT OF GEOTECHNICAL INVESTIGATION

PROPOSED McDONALD'S RESTAURANT #28-0178
NEW HAMPSHIRE ROUTE 108 & GRAPEVINE DRIVE
MAP H4, PORTION OF LOT 3
DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE



Prepared for:

McDONALD'S USA, LLC
110 North Carpenter Street
Chicago, Illinois 60607

Prepared by:

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Richard W.M. McLaren
Senior Consultant

Ryan R. Roy, P.E.
Vice President

Whitestone Project No.: GM2421922.000
June 11, 2024

WHITESTONE
An Employee-Owned Company

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BEDFORD, NH 03110
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whitestoneassoc.com

June 11, 2024

via email

McDONALD'S USA, LLC
110 North Street
Chicago, Illinois 60607

Attention: Mr. Eric Wagner
Area Construction Manager

Regarding: PROPOSED McDONALD'S RESTAURANT #28-0178
NEW HAMPSHIRE ROUTE 108 & GRAPEVINE DRIVE
MAP H4, PORTION OF LOT 3
DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE
WHITESTONE PROJECT NO.: GM2421922.000

Dear Mr. Wagner:

Whitestone Associates, Inc. (Whitestone) is pleased to submit the attached *Report of Geotechnical Investigation* for the above-referenced project. The report presents the results of Whitestone's site visit and subsurface exploration, and includes design recommendations for the proposed foundations, floor slab, and pavements, and related earthwork associated with the proposed McDonald's restaurant.

Whitestone appreciates the opportunity to be of continued service to McDonald's USA, LLC. Should you have questions regarding the attached report, please contact us at (603) 514-2230.

Sincerely,

WHITESTONE ASSOCIATES, INC.

Richard W.M. McLaren, P.E.
Senior Consultant

Ryan R. Roy, P.E.
Vice President

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Enclosures
Copy: Laurence W. Keller, P.E., Whitestone Associates, Inc.

REPORT OF
GEOTECHNICAL INVESTIGATION
Proposed McDonald's Restaurant #28-0178
New Hampshire Route 108 & Grapevine Drive
Dover, Strafford County, New Hampshire

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REPORT OF
GEOTECHNICAL INVESTIGATION
Proposed McDonald's Restaurant #0178
New Hampshire Route 108 & Grapevine Drive
Dover, Strafford County, New Hampshire

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APPENDIX B Laboratory Test Results
APPENDIX C Supplemental Information (USCS, Terms & Symbols)

SECTION 1.0
Summary of Findings

Whitestone Associates, Inc. (Whitestone) has conducted an exploration and evaluation of the subsurface conditions at the site of the proposed McDonald's restaurant to be located southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire. Based on an April 29, 2024 *Concept Sketch 'A'* prepared by Bohler Engineering MA, LLC of Bedford, New Hampshire, the proposed project will include the construction of new single-story restaurant with a footprint of 3,694 square feet, drive-thru facilities, pavement, utilities, and landscaped areas. Whitestone anticipates that the building will be constructed close to existing site grade. Stormwater management areas are planned to the west and south of the restaurant. No new retaining walls are shown on the *Concept Sketch 'A'*.

The geotechnical investigation included conducting a reconnaissance of the project site, advancing 14 borings, and collecting soil samples for laboratory testing and characterization. Site subsurface conditions consisted of topsoil/subsoil overlying intermittent existing fill, which is underlain by a natural marine deposit. Groundwater was encountered in the borings during the exploration at depths ranging from two feet below ground surface (fbgs) to seven fbgs.

The results of the investigation indicate the site is suitable for conventional shallow foundations bearing on properly inspected and approved natural marine deposit or structural fill placed over the marine deposit, and the subgrade reviewed by the geotechnical engineer, as specified in this report. Footing subgrade should be undercut by a minimum of eight inches and replaced with crushed stone wrapped in geotextile separation fabric. Intermittent existing fill, which was encountered at the site to a depth of more than six fbgs, was within the northern portion of the site and outside the proposed building footprint. However, existing fill may be encountered during building construction between the widely spaced borings and associated with the retaining wall to be removed. Overexcavation of existing fill within foundation influence zones and replacement with structural fill may be required within a portion of the building footprint. The results of the investigation also indicate the site is suitable for a ground-supported floor slab deriving support from the properly inspected, improved, and approved marine deposit or existing fill, and/or compacted structural fill, as specified in this report. Additionally, the site conditions support the use of typical pavement sections using standard State of New Hampshire Department of Transportation (NHDOT) specified materials.

The above summary is intended to provide an overview of the geotechnical findings and recommendations and is not fully developed. Greater detail is presented in the following sections. The entire report must be read for comprehensive understanding of the information contained herein.

SECTION 2.0
Introduction

2.1 AUTHORIZATION

Mr. Eric Wagner, Area Construction Manager at McDonald's USA, LLC issued authorization to Whitestone to conduct a geotechnical investigation on the site relevant to a proposed McDonald's restaurant southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire. The geotechnical investigation was conducted in general accordance with Whitestone's May 17, 202 *Service Supplier Proposal*.

2.2 PURPOSE

The purpose of this exploration and analysis was to:

- ascertain the various soil profile components at test locations;
- conduct preliminary infiltration testing;
- estimate the engineering characteristics of the proposed foundation bearing and subgrade materials;
- provide geotechnical criteria for use by the design engineers in preparing the foundation, floor slab, and pavement design;
- provide recommendations for required earthwork and subgrade preparation;
- record groundwater and/or bedrock levels (if encountered) at the time of the investigation and discuss the potential impact on the proposed construction; and
- recommend additional investigation and/or analysis, if warranted.

2.3 SCOPE

The scope of the exploration and analysis included the subsurface exploration, field testing and sampling, laboratory testing, evaluation of the subsurface materials, and a geotechnical engineering analysis. This *Report of Geotechnical Investigation* is limited to addressing the site conditions related to the physical support of the proposed construction. A *Phase I Environmental Site Assessment* (ESA) was completed concurrently with the geotechnical investigation. The ESA report was issued under separate cover.

2.3.1 Field Exploration

Field exploration of the project site was conducted by means of 14 borings, identified as B-1 through B-14, advanced with an all terrain vehicle (ATV) mounted CME 55LC drill rig equipped with hollow stem

augers to termination depths that ranged from approximately six fbgs to 22 fbgs. The borings were backfilled with excavated soils generated from the investigation. Test locations are shown on the *Boring Location Plan* included as Figure 1.

Test locations were based on project information provided to Whitestone at the time of the investigation, including the April 29, 2024 *Concept Sketch 'A'*. The subsurface testing was conducted in the presence of a Whitestone representative, who conducted field tests, recorded visual classifications, and collected samples of the various strata encountered. The tests were located in the field using phone-based GPS. These locations are presumed to be accurate to the degree implied by the method used (± 20 feet).

Borings and Standard Penetration Tests (SPTs) were conducted in general accordance with ASTM International (ASTM) designation D1586. The Standard Penetration Resistance value (N) can be used as an indicator of the consistency of fine-grained soils and the relative density of coarse-grained soils. The N-value for various soil types can be correlated with the engineering behavior of earthworks and foundations. The soil classification information along with other pertinent information was recorded on the boring logs and included in Appendix A on the *Records of Subsurface Exploration*.

Groundwater level observations, where encountered, were recorded during and immediately following the completion of the field operations prior to backfilling the borings. Seasonal variations, temperature effects, and recent rainfall conditions may influence the levels of the groundwater, and observed levels will depend on the permeability of the soils. Groundwater elevations derived from sources other than seasonally observed groundwater monitoring wells may not be representative of true groundwater levels.

2.3.2 Infiltration Testing

Borings B-8 and B-11 were advanced to a depth of seven fbgs to evaluate soil conditions prior to infiltration testing. Infiltration tests I-1 and I-2 were then conducted as falling head tests in cased holes at the locations shown on the *Boring Location Plan*. PVC casing, four inches in diameter, was installed to the depths tabulated below. The soil was pre-soaked for approximately 30 minutes. Following testing, the casings were removed. The results are tabulated below.

SUMMARY OF INFILTRATION TESTING				
Location	**Approximate Ground Elevation (feet)**	**Test Depth (fbgs)**	**Approximate Test Elevation (feet)**	**Infiltration Rate (in/hr)**
I-1 (B-8)	110	4.2	106	0.0
I-1 (B-11)	100	3.6	96	0.0

Typically, a Factor of Safety (FoS) is applied to measured infiltration rates to account for siltation and consolidation of soil below the systems over time. Safety factors used should consider how critical the systems are to the development and the available storage. If the system is critical or storage limited, a higher FoS should be applied. Infiltration rates are variable and dependent on test depth and stratification.

2.3.3 Laboratory Testing

Laboratory testing was conducted to determine pertinent engineering characteristics of representative samples of on-site soils. The laboratory testing was conducted in general accordance with applicable ASTM standard test methods and included physical testing of the marine deposit.

Physical/Textural Analysis: Two representative samples of the site soils were subjected to laboratory testing that included moisture content determinations (ASTM D2216) and washed gradation analyses (ASTM D422) in order to conduct supplementary engineering soil classifications and to assess possible re-use of the site soils as structural fill. The results of the laboratory testing are summarized in the following table:

LABORATORY TESTING SUMMARY					
Boring	**Sample Number**	**Depth (fbgs)**	**Moisture Content (%)**	**Passing No. 200 Sieve (%)**	**USCS Classification**
B-2	S-2	2.0 - 4.0	26.9	78.3	ML
B-4	S-3	5.0 - 7.0	33.0	28.6	SM

The engineering classifications are useful when considered in conjunction with the additional site data to estimate properties of the soil types encountered and to predict soil behavior under construction and service loads. Laboratory test results are provided in Appendix B.

SECTION 3.0
Site Description

3.1 LOCATION & DESCRIPTION

The subject property is located immediately southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire, Latitude 43.1664 North, and Longitude 70.8922 West. The undeveloped site is an approximately 0.5-acre portion of a 10.85-acre parcel, further identified as Map H4, Lot 3.

The approximately rectangular site is bounded to the east by New Hampshire Route 108 (Durham Road); to the north by Grapevine Drive; to the west by a large stormwater management basin; and to south by undeveloped land, then a high tension power corridor. Access to the site is from Grapevine Drive. The site of the proposed construction is shown on the *Boring Location Plan* included as Figure 1.

3.2 EXISTING CONDITIONS

Existing Development: At the time of Whitestone's investigation, the site was generally undeveloped and grass covered. However, there was a low, masonry block retaining wall extending approximately north to south, just to the west of the proposed building footprint. Whitestone understands that this retaining wall will be removed and the site regraded.

Topography: Based on a review of the *USGS 7.5 Minute Series Dover West Quadrangle, New Hampshire* (2021) and on Whitestone's visual observations, the site slopes down to the southwest from approximately 110 feet above National American Vertical Datum of 1988 (NAVD) to 100 feet above NAVD.

Utilities: The site is not serviced by underground utilities. The utility information contained in this report is presented for general discussion only and is not intended for construction purposes.

Site Drainage: Surface run-off will follow site topography, flowing to the southwest.

3.3 SITE GEOLOGY

From a review of the *Surficial Geologic Map of the Dover West Quadrangle, Strafford County, New Hampshire (1989)*, the site is underlain by marine sand. The mapped boundary with stratified glacial sand and gravel is immediately west of the site. The *Geologic Map of New Hampshire*, prepared by U.S. Geological Survey, indicates that the subject property is underlain, at depth, by Early Devonian-age Exeter Diorite, consisting of gabbro and diorite, with minor granite and granodiorite.

3.4 PROPOSED CONSTRUCTION

Based on the aforementioned Bohler *Concept Sketch 'A'*, the proposed project will include the construction of new single-story restaurant with a footprint of 3,694 square feet, drive-thru facilities, pavement, utilities, and landscaped areas. Whitestone anticipates that the building will be constructed close to existing site grade. Stormwater management areas are planned to the west and south of the restaurant. No new retaining walls are shown on the *Concept Sketch 'A'*.

Whitestone anticipates the proposed building will be a single-story, masonry and metal-framed structure constructed with a ground-supported concrete floor slab and no basement. Maximum column and wall loads are expected to be on the order of:

- interior column loads - 60.0 kips;
- load bearing walls - 2.0 kips per linear foot; and
- floor slab loads - 100 pounds per square foot.

The scope of Whitestone's investigation and the professional advice contained in this report were generated based on the project details and loading noted herein. Revisions or additions to the design details enumerated in this report should be brought to the attention of Whitestone for additional evaluation as warranted.

SECTION 4.0
Subsurface Conditions

Details of the subsurface materials encountered in the borings are presented on the *Records of Subsurface Exploration* in Appendix A of this report. The subsurface soil conditions encountered in the test locations consisted of the following generalized strata in order of increasing depth.

4.1 SUBSURFACE SOIL CONDITIONS

Surface Cover Materials: The borings encountered three inches to nine inches of topsoil at the ground surface, generally underlain by three inches to 11 inches of subsoil with roots.

Existing Fill (intermittent): Beneath the surface cover materials, borings B-13 and B-14 encountered existing fill, consisting of brown to gray-brown, medium dense to dense, silty sand with gravel. SPT N-values recorded within the existing fill were variable, ranging from 21 blows per foot (bpf) to 37 bpf. Where penetrated in boring B-13, the existing fill extended to a depth of four fbgs. Boring B-14 terminated in the existing fill at a depth of six fbgs. Existing fill should also be expected in the vicinity of the retaining wall to be removed.

Marine Deposit: Beneath the surface cover materials or existing fill, the borings, except B-14, encountered a marine deposit, consisting of gray to brown, loose to medium dense (occasionally very loose), sandy silt (USCS: ML) to silty sand (USCS: SM). SPT N-values recorded within the marine deposit were variable, ranging from two bpf to 29 bpf. The borings, except B-14, terminated in the marine deposit at depths of six fbgs to 22 fbgs.

4.2 GROUNDWATER

Groundwater was encountered in the borings at depths ranging from two fbgs to seven fbgs during Whitestone's subsurface exploration activities. The shallower groundwater is likely perched. Static and perched/trapped water conditions generally will fluctuate seasonally and following periods of precipitation.

SECTION 5.0
Conclusions & Recommendations

5.1 GENERAL

The results of the investigation indicate the site is suitable for conventional shallow foundations bearing on properly inspected and approved natural marine deposit or structural fill placed over the marine deposit, and the subgrade reviewed by the geotechnical engineer, as specified in this report. Footing subgrade should be undercut by a minimum of eight inches and replaced with crushed stone wrapped in geotextile separation fabric. Intermittent existing fill, which was encountered at the site to a depth of more than six fbgs, was within the northern portion of the site and outside the proposed building footprint. However, existing fill may be encountered during building construction between the widely spaced borings and associated with the retaining wall to be removed. Overexcavation of existing fill within foundation influence zones and replacement with structural fill may be required within a portion of the building footprint. The results of the investigation also indicate the site is suitable for a ground-supported floor slab deriving support from the properly inspected, improved, and approved marine deposit or existing fill, and/or compacted structural fill, as specified in this report. Additionally, the site conditions support the use of typical pavement sections using standard NHDOT specified materials.

5.2 SITE PREPARATION & EARTHWORK

Surface Cover Stripping and Demolition: Prior to stripping operations, any utilities should be identified and secured. Vegetation, topsoil, organic subsoil, and other organic matter should be removed from within and at least five feet beyond the limits of the proposed building footprint, as well as any other area that will require controlled structural fill placement. Any tree/shrub removal should include the removal of stumps and root material, which will require removal of more than the few inches of topsoil encountered in the borings. The existing retaining wall should be removed entirely within and up to five feet around the proposed building footprint. Elsewhere, under paved areas, the retaining wall components should be removed to a minimum of two feet below pavement subgrade. The contractor should be required to conduct earthwork in accordance with the recommendations in this report, including backfilling any excavation, etc. with structural fill. Fill or backfill placed within the proposed building and slab areas should be placed as structural fill in accordance with Sections 5.2, 5.3, and 5.11 of this report.

Surface Preparation/Proofrolling: Prior to placing fill or subbase materials to raise or restore grades to the desired subgrade elevations, the existing exposed soils should be compacted to a firm surface with several passes in two perpendicular directions of a minimum 10-ton vibratory roller. The surface should then be proofrolled with a loaded tandem axle truck in the presence of the geotechnical engineer to help identify soft or loose pockets that may require removal and replacement, or further evaluation. Proofrolling should be conducted after a suitable period of dry and non-freezing weather to reduce the

likelihood of degrading an otherwise stable subgrade. Should construction be attempted in the winter or when temperatures are below freezing, Whitestone should be contacted for alternative surface preparation recommendations. Fill or backfill should be placed and compacted in accordance with Section 5.3.

Weather Performance Criteria: The site soils are moisture sensitive. Every effort should be made to maintain drainage of surface water runoff away from construction areas by grading and limiting the exposure of excavations and prepared subgrades to rainfall. Accordingly, excavation and fill placement procedures should be conducted during favorable weather conditions. Overexcavation of wet or disturbed soils and replacement with controlled structural fill per Section 5.3 of this report may be required prior to resuming work on subgrade soils.

Subgrade Protection and Maintenance: The site soils are moisture sensitive and will degrade if exposed to inclement weather, freeze-thaw cycles, or repeated construction traffic. However, if properly protected and maintained as recommended herein, the site soils will provide adequate support for the proposed construction. The site contractors should employ appropriate means and methods to protect the subgrade, including but not limited to the following:

- sealing exposed subgrade soils on a daily basis with a smooth drum roller operated in static mode;
- regrading the site as needed to maintain positive drainage away from open earthwork construction areas and to prevent standing water;
- removing wet surficial soils and ruts immediately; and
- limiting exposure to construction traffic and precipitation especially following inclement weather and subgrade thawing.

5.3 STRUCTURAL FILL & BACKFILL

Imported Fill Material: Imported material placed as structural fill or backfill to raise elevations or restore design grades should consist of clean, relatively well graded sand or gravel with a maximum particle size of three inches and up to 15 percent, by weight, of material finer than a #200 sieve. Imported material should be free of silt, clay, organics, and deleterious material. Imported material should be approved by a qualified geotechnical engineer prior to delivery to the site.

On-Site Material Reuse: The fine-grained marine deposit encountered throughout the site is marginally acceptable for reuse as structural fill and/or backfill because of its difficult workability. Reuse of the fine-grained soil will likely require extensive moisture conditioning and/or drying during extended periods of warm, dry weather to facilitate reuse, workability, and compaction in fill areas. The more granular portions of the existing fill may be suitable for reuse as structural fill and/or backfill, but the quantity is limited. Reuse of the site soils will be contingent on careful inspection in the field by the owner's geotechnical engineer.

Stringent quality control and inspection by the geotechnical engineer will be required for suitable portions of the on-site soils to be reused as structural fill and backfill, and to confirm that the soils are properly placed and compacted within two percent of their optimum moisture content.

Immediate re-use of on-site soils for structural fill or backfill should not be anticipated as the natural soils are moisture sensitive. On-site materials that are or become wet will require extensive handling, such as discing and aerating, which may not be practical during wet seasons or where site area is limited. In order to attempt the re-use of on-site soil, the contractor should cover stockpiled soils, seal subgrades each day with a smooth drum roller, and provide proper surface drainage during forecasted wet weather. Alternatively, imported fill materials may be required to expedite earthwork operations. The stripped surface cover materials should not be used as structural fill or backfill.

Submerged Fill: In the wet (flooding, perched water, or groundwater), consideration should be given to placing an open-graded, 0.75-inch crushed stone to provide a working mat, expedite dewatering efforts and enable subsequent placement of structural fill or backfill in the dry. Prior to placing submerged fill materials, free water and disturbed materials should be removed to the extent recommended by the geotechnical engineer. A fines barrier geotextile, such as *Mirafi 140N* or equivalent, should be placed at the base and sides of the overexcavation to separate the crushed stone from underlying and adjacent soils. The fabric also should be placed on top of the crushed stone prior to subsequent fill placement, if fill soils with a substantial amount of fines are to be used to restore grade.

Compaction and Placement Requirements: Fill and backfill should be placed in maximum 12-inch thick loose lifts when compacted using a vibratory drum roller with a minimum weight of one ton, and in maximum eight-inch thick loose lifts when compacted with a plate compactor. A sheepsfoot roller may be appropriate if fine-grained material is used as fill. Structural fill and backfill should be compacted to at least 95 percent of the maximum dry density within three percent of the optimum moisture content, as determined by ASTM D1557 (Modified Proctor).

Structural Fill Testing: A sample of the imported fill material or on-site material proposed for reuse as structural fill or backfill should be submitted to the owner's geotechnical engineer for analysis and approval at least one week prior to its use. The placement of fill and backfill should be monitored by a qualified engineering technician, such that the specified material and lift thicknesses are properly installed. A sufficient number of in-place density tests should be conducted, such that the specified compaction is achieved throughout the height of the fill or backfill.

5.4 GROUNDWATER CONTROL

Shallow groundwater was encountered within the borings during this investigation. In addition, perched/trapped water may be encountered during construction above non-permeable strata. As such, construction phase dewatering will consist of temporarily lowering the groundwater table and removing surface water runoff, infiltrating water, or trapped water. While construction phase dewatering may be possible by installing temporary sump pits and filtered pumps within trenches and excavations, depending on depth of excavation, groundwater level at time of construction, and rate of flow into the excavation, an enhanced dewatering system, such as well points, may be required.

Proper grading and drainage should be incorporated into the site design and construction phase grading to discourage ponding of surface runoff. Every effort should be made to maintain drainage of surface run-off away from construction areas by grading. The contractor should limit exposure of excavations and prepared subgrades to rainfall. Overexcavation of wet soils and replacement with controlled structural fill per Section 5.3 of this report may be required prior to resuming work on disturbed subgrade soils.

Because of the shallow groundwater, Whitestone recommends that permanent drainage measures be implemented. The permanent drainage should include a foundation perimeter drain close to the underside of footing level around the building and a network of interceptor drains extending from stormwater inlet structures within proposed pavement areas.

5.5 FOUNDATIONS

Whitestone considers that the proposed structure may be supported on conventional spread and continuous wall footings designed to bear on the natural marine deposit or structural fill placed on the marine deposit, provided these materials are properly evaluated, placed, and compacted in accordance with Sections 5.2, 5.3, and 5.11 of this report. Existing fill was not encountered in the five borings advanced within or close to the proposed building footprint, however, existing fill was encountered to a depth of more than six fbgs in boring B-14, north of the proposed building footprint. In addition, existing fill may be encountered during construction between the widely spaced borings and associated with the retaining to be removed. Therefore, overexcavation of existing fill under footings and replacement with structural fill may be required within a portion of the building footprint. Foundation subgrades in the marine deposit should be undercut by at least eight inches and replaced with minus 0.75-inch crushed stone wrapped in geotextile separation fabric (*Mirafi 140N*, or similar). Foundations bearing on suitably prepared subgrades may be designed to impart a maximum allowable net bearing pressure of 3,000 pounds per square foot. Regardless of loading conditions, new foundations should be sized no less than minimum dimensions of 24 inches for continuous wall footings and 36 inches for isolated column footings.

Foundation subgrades should be compacted with a roller operated in static mode in the presence of the geotechnical engineer to densify any disturbed soils. The fine-grained soils are susceptible to disturbance by vibrations from compaction equipment and other construction activity. Compaction should therefore only be attempted under the direction of the geotechnical engineer, such that the underlying fine-grained materials do not become disturbed by the compaction process. A smooth bladed bucket would be appropriate for excavation of the fine-grained soils. Consideration should be given to the option of placing geotextile separation fabric and a few inches of crushed stone over the fine-grained soils exposed in the bottom of foundation excavations to reduce the likelihood of disturbance and provide a working surface for formwork and reinforcing steel placement.

Footings should be designed such that the maximum toe pressure due to the combined effect of vertical loads (including soil weight) and overturning moment does not exceed the recommended maximum allowable bearing pressure. In addition, positive contact pressure should be maintained throughout the base of the footings such that no uplift or tension exists between the base of the footings and the

supporting soil. Uplift loads should be resisted by the weight of the concrete footing. Side friction should be neglected when proportioning the footings, and lateral resistance should be provided by friction resistance at the base of the footings. A coefficient of friction (ultimate) against sliding of 0.3 is recommended for use in the design of concrete foundations bearing within the site soils or imported structural fill.

Foundation Inspection/Overexcavation Criteria: Whitestone recommends that the suitability of the bearing materials along new footing bottoms be reviewed by a geotechnical engineer prior to placing concrete for the footings. Special attention should be given to any areas of the site underlain by soft/loose conditions. In the event that isolated areas of unsuitable materials are encountered in footing excavations, overexcavation and replacement of the materials or deeper foundation embedment may be necessary to provide a suitable footing subgrade. Overexcavation to be restored with structural fill should extend at least one foot laterally beyond footing edges for each vertical foot of overexcavation. Lateral overexcavation may be eliminated if grade is restored with lean concrete.

Settlement: Whitestone estimates post construction settlements of new building foundations will be on the order of less than one inch, if the recommendations outlined in this report are properly implemented. Differential settlements of new building foundations should be less than about one half inch.

Frost Coverage: Footings subject to frost action should be placed at least 48 inches below adjacent exterior grades, in accordance with the *State of New Hampshire Building Code* to provide protection from frost penetration. Interior footings not subject to frost action (including during construction) may be placed at a minimum depth of 18 inches below the slab subgrade, but should not be placed on existing fill.

5.6 FLOOR SLAB

Whitestone anticipates that the properly inspected and approved marine deposit, or existing fill improved with surface compaction, and/or compacted structural fill will be suitable for support of the proposed floor slab provided these materials are properly evaluated, compacted, and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions. Areas that are, or become, softened or disturbed as a result of wetting and/or repeated exposure to construction traffic or contain objectionable materials should be removed and replaced with compacted structural fill. The properly prepared on-site soils are expected to yield a minimum subgrade modulus (k) of 150 psi/in.

A minimum 12-inch thick layer of NHDOT *304.3 Crushed Gravel* (or approved equivalent) should be placed below the floor slab to provide a uniform subbase. A moisture vapor barrier should be installed beneath the floor slab in accordance with flooring manufacturer's recommendations. A moisture vapor barrier should also be installed if the floor supports moisture-sensitive equipment.

5.7 PAVEMENT DESIGN CRITERIA

General: Whitestone anticipates that the properly inspected and approved marine deposit, or existing fill improved with surface compaction, and/or compacted structural fill placed to raise or restore design elevations will be suitable for support of the proposed pavements, provided these materials are properly evaluated, compacted, and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions.

Design Criteria: A California Bearing Ratio of 5.0 has been assigned to the properly prepared subgrade soils for pavement design purposes. This value was correlated with pertinent soil support values and assumed traffic loads to prepare flexible and rigid pavement designs per the AASHTO *Guide for the Design of Pavement Structures*.

Design traffic loads were assumed based on typical volumes for similar facilities and correlated with 18-kip equivalent single axle loads (ESAL) for a 20-year life. Estimated maximum pavement loads of 30,000 ESALs and 75,000 ESALs were used for the standard-duty and heavy-duty pavement areas, respectively. These values assume the pavements primarily will accommodate both automobile and limited heavier truck traffic, with the heavier truck traffic designated to the main drive lanes. Actual loading experienced is anticipated to be less than these values.

Pavement Sections: Pavement components should meet material specifications from NHDOT *Standard Specifications* specified below. The recommended flexible pavement sections are tabulated below:

FLEXIBLE PAVEMENT SECTION			
LAYER	**Material**	**Standard-Duty Thickness (inches)**	**Heavy-Duty Thickness (inches)**
Asphalt Surface Course	NHDOT "Wearing Course"	1.5	1.5
Asphalt Binder Course	NHDOT "Binder Course"	1.5	2.5
Granular Subbase	NHDOT 304.3 Crushed Gravel	12.0	12.0

A rigid concrete pavement should be used to provide suitable support at areas of high traffic or severe turns, such as at the drive-thru, trash enclosure, and ingress/egress locations. The recommended rigid pavement is tabulated below:

RIGID PAVEMENT SECTION		
LAYER	**Material**	**Thickness (inches)**
Surface	4,000 psi Air-Entrained Concrete	6.0[1]
Granular Subbase	NHDOT 304.3 Crushed Gravel	12.0

Note [1]: The outer edges of concrete pavements are susceptible to damage as trucks move from rigid pavement to adjacent flexible pavement. Therefore, the thickness at the outer two feet of the rigid concrete pavement should be 12 inches. The concrete should be reinforced with at least one layer of six-inch by six-inch W5.4/W5.4 welded wire fabric (ASTM A185).

Pavement Drainage Systems: Because of the shallow groundwater, Whitestone recommends installing a network of interceptor drains extending from stormwater inlet structures to improve drainage within proposed pavement areas. Interceptor drains typically consist of top perforated polyvinyl chloride (PVC) piping within a 12-inch by 12-inch, clean 0.75-inch crushed stone layer surrounded by a fines separation fabric. For the fine-grained soils present on the subject site, a woven fabric, such as long term clog resistant *Mirafi FW700*, or approved equivalent, is recommended. Interceptor drains should be designed to pitch towards and discharge into the stormwater drainage system. The pipes should have a minimum slope of 0.5 percent.

Additional Design Considerations: The pavement section thickness designs presented in this report are based on the design parameters detailed herein and are contingent on proper construction, inspection, and maintenance. Additional pavement thickness may be required by local code. The designs are contingent on achieving the minimum soil support value in the field. To accomplish this requirement, subgrade soil and supporting fill or backfill should be placed, compacted, and evaluated in accordance with Sections 5.2, 5.3, and 5.11 of this report. Proper drainage should be provided for the pavement structure, including appropriate grading and surface water control, a network of interceptor drains, and an edge drain where the pavement abuts higher ground.

The performance of the pavement also will depend on the quality of materials and workmanship. Whitestone recommends that NHDOT standards for materials, workmanship, and maintenance be applied to this site. Project specifications should include verifying that the installed asphaltic concrete material composition is within tolerance for the specified materials and that the percentage of air voids of the installed pavement is within specified ranges for the respective materials. Rigid concrete pavements should be suitably air-entrained, jointed, and reinforced in general accordance with ACI 330R-08 *Guide for the Design and Construction of Concrete Parking Lots*.

5.8 RETAINING WALLS/BELOW GRADE WALLS

Proposed site retaining walls were not indicated at this time. Whitestone should be notified if retaining walls or structures resisting lateral earth pressures are planned. The following recommendations are provided for preliminary planning of any retaining walls, below-grade walls, and other structures reliant on granular materials to provide adequate drainage. However, the parameters are not directly applicable to the design of mechanically stabilized earth (MSE) retaining walls, which require proprietary design methods for the selected earth retention system.

Lateral Earth Pressures: Retaining/below-grade walls should be capable of withstanding active and at-rest earth pressures. With an active earth pressure coefficient (K_a) of 0.33 and assuming a level backfill and an assumed maximum backfill soil unit weight of 140 pounds per cubic foot (pcf), an equivalent fluid pressure of 46 psf per foot of wall height should be used in design of retaining/below-grade walls which are free to rotate.

Retaining/below-grade walls and wall corners typically are restrained from lateral movement and should be designed using at-rest earth pressures. A coefficient of at-rest earth pressure (K_o) of 0.5, for a level backfill, is recommended for retaining/below-grade walls designed to resist at-rest earth pressures, which assume no lateral movement. With an assumed maximum total unit weight of backfill of approximately 140 pcf, an equivalent fluid pressure of 70 psf of wall height should be used in design of restrained retaining/below-grade wall and wall corners. A coefficient of friction of 0.3 against sliding can be used for concrete on the existing site soils. Additional lateral earth pressures from a sloped backfill or any temporary or long-term surcharge loads also should be included in the design. Retaining wall design should include a global stability analysis.

Backfill Criteria: Whitestone recommends that granular soils be used to backfill behind retaining walls. The granular backfill materials should consist of clean, relatively well-graded sand or gravel with a maximum particle size of three inches and up to 15 percent of material finer than a #200 U.S. Standard sieve.

Whitestone recommends that backfill directly behind any walls be compacted with light, hand-held compactors. Heavy compactors and grading equipment should not be allowed to operate within a zone of influence measured at a 45-degree angle from the base of the walls during backfilling to avoid developing excessive temporary or long-term lateral soil pressures.

Wall Drainage: Positive drainage should be provided at the base of the below-grade walls. Where wall drainage is not provided, the wall should be designed to withstand full hydrostatic pressure. All below grade walls should also include a minimum 18 inches of open graded stone backfill immediately adjacent to the wall that re-directs water from the building. Geotextile separation fabric should be placed between the open graded stone and the site soils.

Whitestone should be notified if any retaining structures or design considerations requiring lateral earth pressure estimations are proposed. Specific recommendations for temporary retaining structures are beyond Whitestone's scope of services.

5.9 SEISMIC & LIQUEFACTION CONSIDERATIONS

The subsurface conditions are most consistent with a Site Class D, as defined by the *State of New Hampshire Building Code*. Based on the building type (single story), seismic zone, and soil profile, liquefaction considerations are not expected to have a substantial impact on design.

5.10 EXCAVATIONS

The site soils encountered during this investigation typically are, at a minimum, consistent with Type C Soil Conditions as defined by 29 CFR Part 1926 (OSHA), which require a maximum unbraced excavation angle of 1.5:1 (horizontal:vertical). Actual conditions encountered during construction should be evaluated by a competent person (as defined by OSHA), such that safe excavation methods and/or shoring and bracing requirements are implemented.

5.11 SUPPLEMENTAL POST INVESTIGATION SERVICES

Structural & Grading Plan Review: Whitestone should be provided with the final structural and grading plans to review and confirm the final design plans are consistent with the recommendations in this report. Whitestone should review site grading and proposed fill placement.

Construction Inspection and Monitoring: Earthwork inspections, testing, and consultation should be conducted during construction as described in previous sections of this report. Monitoring and testing should also be conducted to confirm that any encountered underground structures are properly backfilled, the existing surface cover materials are properly removed, and suitable materials, used for controlled fill, are properly placed and compacted over suitable subgrade soils. Overexcavation of any existing fill beneath proposed foundations and proofrolling of all subgrades prior to foundation, slab, and pavement support should be witnessed and documented by the owner's geotechnical engineer to confirm earthwork is conducted in accordance with the recommendations herein.

SECTION 6.0
General Comments

Supplemental recommendations may be required upon finalization of construction plans or if significant changes are made in the characteristics or location of the proposed structure. Soil bearing conditions should be checked at the appropriate time for consistency with those conditions encountered during Whitestone's geotechnical investigation.

The recommendations presented herein should be utilized by a qualified engineer in preparing the project plans and specifications. The engineer should consider these recommendations as minimum physical standards, which may be superseded by local and regional building codes and structural considerations. These recommendations are prepared for the sole use of the McDonald's USA, LLC for the specific project detailed and should not be used by any third party. These recommendations are relevant to the design phase and should not be substituted for construction specifications.

The possibility exists that conditions between borings may differ from those at specific test locations, and conditions may not be as anticipated by the designers or contractors. In addition, the construction process may alter soil and rock conditions. Therefore, experienced geotechnical personnel should observe and document the construction procedures used and the conditions encountered.

Whitestone assumes that a qualified contractor will be employed to conduct the construction work, and that the contractor will be required to exercise care to ensure excavations are conducted in accordance with applicable regulations and good practice. Particular attention should be paid to avoiding damaging or undermining adjacent buildings/properties and maintaining slope stability.

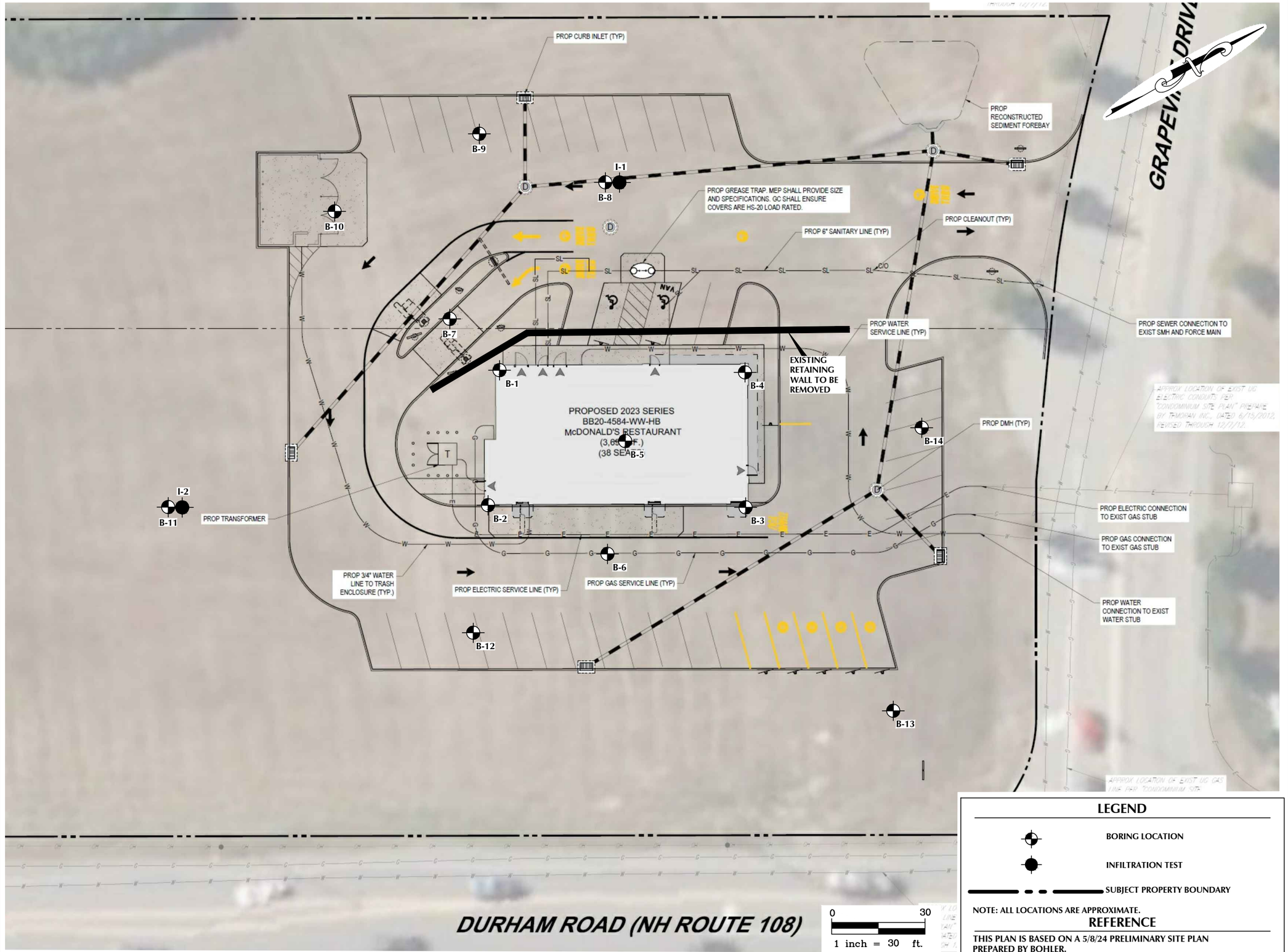
Whitestone recommends that the services of the geotechnical engineer be engaged to test and evaluate the materials in the footing excavations prior to concreting in order to determine that the materials will support the bearing pressures. Monitoring and testing also should be conducted to check that suitable materials are used for controlled fills and that they are properly placed and compacted over suitable subgrade.

The exploration and analysis of the foundation conditions reported herein are considered sufficient in detail and scope to form a reasonable basis for the foundation design. The recommendations submitted for the proposed construction are based on the available soil information and the design details furnished by McDonald's USA, LLC and Bohler Engineering MA, LLC. Deviations from the noted subsurface conditions encountered during construction should be brought to the attention of the geotechnical engineer.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology. No other warranties, express or implied, are made.

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FIGURE 1
Boring Location Plan



LEGEND

- BORING LOCATION
- INFILTRATION TEST
- SUBJECT PROPERTY BOUNDARY

NOTE: ALL LOCATIONS ARE APPROXIMATE.

REFERENCE

THIS PLAN IS BASED ON A 5/8/24 PRELIMINARY SITE PLAN PREPARED BY BOHLER.

WHITESTONE
An Employee-Owned Company
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PHONE: 603.514.2230 WHITESTONEASSOC.COM

DRAWING TITLE: **BORING LOCATION PLAN**

CLIENT: McDONALD'S USA, LLC

PROJECT: PROPOSED McDONALD'S RESTAURANT # 28-0178
NH ROUTE 108 & GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

PROJECT #: GM2421922.000	
DESIGNED BY: MR	PROJ. MGR.: RR
DATE: 5/31/24	FIGURE: 1
SCALE: 1" = 30'	

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APPENDIX A
Records of Subsurface Exploration

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RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	22.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 5.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		6" Topsoil	
0 - 2	S-1	X	WOH - 1 - 3 - 5	16	4				Gray-Brown, Very Loose to Loose, Sandy Silt (ML)	
2 - 4	S-2	X	4 - 4 - 7 - 9	24	11				As Above, Gray, Medium Dense (ML)	
						5.0 ▽				
5 - 7	S-3	X	3 - 4 - 5 - 6	24	9				As Above, Gray-Brown, Loose (ML)	
7 - 9	S-4	X	4 - 6 - 5 - 6	24	11				As Above, Medium Dense (ML)	
						10.0				
10 - 12	S-5	X	3 - 4 - 6 - 6	21	10		MARINE DEPOSIT		As Above, Brown, Loose to Medium Dense (ML)	
						15.0				
15 - 17	S-6	X	1 - 1 - 1 - 3	22	2				As Above, Gray, Very Loose (ML)	
						20.0				
20 - 22	S-7	X	2 - 1 - 2 - 4	22	3				As Above, Gray-Brown (ML)	
						25.0			Boring Log B-1 Terminated at Depth of 22.0 feet below ground surface.	

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-2

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024				
Proposed Location:	Building	**Logged By:**	ZH	**During:**	2.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	7.0 | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	1 - 2 - 2 - 3	21	4		TS		3" Topsoil	
							SUBSOIL		9" Subsoil, Roots	
									Gray-Brown, Very Loose to Loose, Sandy Silt (ML)	
2 - 4	S-2	X	3 - 4 - 7 - 9	24	11				As Above, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	4 - 4 - 5 - 5	24	9				As Above, Loose (ML)	
7 - 9	S-4	X	5 - 5 - 5 - 6	24	10				As Above, Loose to Medium Dense (ML)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	2 - 3 - 5 - 5	24	8				As Above, Loose (ML)	
						15.0				
15 - 17	S-6	X	WOH - 1 - 2 - 2	24	3				As Above, Very Loose (ML)	
17 - 19	S-7	X	1 - 2 - 2 - 1	22	4				As Above, Very Loose to Loose (ML)	
						20.0			Boring Log B-2 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-3

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	3 - 4 - 5 - 6	21	9		TS		9" Topsoil	
							SUBSOIL		10" Subsoil	
2 - 4	S-2	X	4 - 7 - 5 - 6	15	12				Gray-Brown, Medium Dense, Silty Sand (SM)	
						5.0				
5 - 7	S-3	X	3 - 4 - 6 - 7	22	10				As Above, Loose to Medium Dense (SM)	
7 - 9	S-4	X	6 - 6 - 6 - 7	23	12				As Above, Medium Dense (SM)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	4 - 6 - 9 - 8	24	15				As Above, Brown (SM)	
						15.0				
15 - 17	S-6	X	3 - 5 - 6 - 4	16	11				As Above, Gray to Brown (SM)	
17 - 19	S-7	X	2 - 2 - 7 - 13	24	9				As Above, Gray-Brown, Loose (SM)	
						20.0			Boring Log B-3 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-4

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	2 - 3 - 4 - 4	21	7		TS		8" Topsoil	
							SUBSOIL		11" Subsoil	
2 - 4	S-2	X	4 - 5 - 4 - 7	16	9				Gray-Brown, Loose, Silty Sand (SM)	
						5.0				
5 - 7	S-3	X	2 - 3 - 5 - 6	22	8				As Above (SM)	
7 - 9	S-4	X	5 - 6 - 7 - 9	24	13				As Above, Medium Dense (SM)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	2 - 2 - 5 - 7	24	7				As Above, Loose (SM)	
						15.0				
15 - 17	S-6	X	1 - 2 - 3 - 2	24	5				As Above (SM)	
17 - 19	S-7	X	5 - 7 - 8 - 8	24	15				As Above, Brown, Medium Dense (SM)	
						20.0			Boring Log B-4 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-5

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	2 - 3 - 5 - 5	20	8		TS		3" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
									Brown, Loose, Sandy Silt (ML)	
2 - 4	S-2	X	4 - 6 - 5 - 5	18	11				As Above, Gray-Brown, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	3 - 4 - 5 - 5	20	9				As Above, Gray, Loose (ML)	
7 - 9	S-4	X	5 - 6 - 5 - 6	22	11				As Above, Gray-Brown, Medium Dense (ML)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	4 - 5 - 8 - 8	23	13				As Above, Brown (ML)	
						15.0				
15 - 17	S-6	X	3 - 6 - 5 - 5	18	11				As Above (ML)	
17 - 19	S-7	X	2 - 3 - 6 - 10	23	9				As Above, Loose (ML)	
						20.0			Boring Log B-5 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-6

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)	**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	17.0 feet bgs	**Date Completed:**	5/28/2024			
Proposed Location:	Grease Trap	**Logged By:**	ZH	**During:**	7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	1 - 1 - 2 - 3	19	3		TS		4" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
									Gray, Loose, Sandy Silt (ML)	
2 - 4	S-2	X	3 - 3 - 6 - 8	22	9				As Above (ML)	
						5.0				
5 - 7	S-3	X	4 - 5 - 4 - 4	24	9				As Above (ML)	
7 - 9	S-4	X	4 - 5 - 5 - 5	24	10				As Above, Gray-Brown, Loose to Medium Dense (ML)	
							MARINE DEPOSIT			
						10.0				
10 - 12	S-5	X	2 - 3 - 4 - 6	23	7				As Above, Brown, Loose (ML)	
						15.0				
15 - 17	S-6	X	WOH - 1 - 1 - 1	24	2				As Above, Gray, Very Loose (ML)	
									Boring Log B-6 Terminated at Depth of 17.0 feet below ground surface.	
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-7

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	12.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	Drive-thru / Order Boards	**Logged By:**	ZH	**During:** 5.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		WOH - 2 - 2 - 8	15	4		TS		5" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
									Brown, Loose, Silty Sand (SM)	
2 - 4	S-2		8 - 10 - 8 - 6	18	18				As Above, Gray-Brown, Medium Dense (SM)	
						5.0				
5 - 7	S-3		3 - 2 - 4 - 3	24	6		MARINE DEPOSIT		Gray-Brown, Loose, Sandy Silt (ML)	
7 - 9	S-4		4 - 5 - 5 - 6	24	10				As Above, Loose to Medium Dense (ML)	
						10.0				
10 - 12	S-5		6 - 8 - 6 - 6	24	14				As Above, Gray, Medium Dense (ML)	
									Boring Log B-7 Terminated at Depth of 12.0 feet below ground surface.	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-8

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	SWM Area	**Logged By:**	ZH	**During:**	6.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		5" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
1 - 3	S-1	X	2 - 3 - 4 - 5	23	7				Gray, Loose, Sandy Silt (ML)	
3 - 5	S-2	X	5 - 6 - 8 - 10	18	14		MARINE DEPOSIT		As Above, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	3 - 3 - 8 - 8	12	11				As Above, Gray-Brown (ML)	
									Boring Log B-8 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-9

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	-- | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		6" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
1 - 3	S-1	X	2 - 3 - 4 - 4	15	7		MARINE DEPOSIT		Gray- Brown, Loose, Sandy Silt (ML)	
3 - 5	S-2	X	4 - 6 - 9 - 11	21	15	5.0			As Above, Medium Dense (ML)	
5 - 7	S-3	X	3 - 4 - 10 - 9	20	14				As Above, Gray (ML)	
									Boring Log B-9 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-10

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Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	11.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	Dumpster Pad	**Logged By:**	ZH	**During:** 5.5 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		4" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
1 - 3	S-1	X	3 - 6 - 6 - 8	24	12				Gray-Brown, Medium Dense, Sandy Silt (ML)	
3 - 5	S-2	X	2 - 5 - 5 - 9	17	10				As Above, Gray, Loose to Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	5 - 7 - 7 - 8	24	14		MARINE DEPOSIT		As Above, Medium Dense (ML)	
7 - 9	S-4	X	6 - 7 - 6 - 6	24	13				As Above, Brown (ML)	
9 - 11	S-5	X	3 - 3 - 3 - 4	9	6	10.0			As Above, Loose (ML)	
									Boring Log B-10 Terminated at Depth of 11.0 feet below ground surface.	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-11

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	SWM Area	**Logged By:**	ZH	**During:**	3.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		5" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
1 - 3	S-1	X	2 - 4 - 8 - 11	24	12				Gray-Brown, Medium Dense, Silty Sand (SM)	
3 - 5	S-2	X	3 - 6 - 9 - 15	20	15		MARINE DEPOSIT		As Above (SM)	
						5.0				
5 - 7	S-3	X	4 - 6 - 8 - 12	12	14				As Above, Brown (SM)	
									Boring Log B-11 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-12

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	6.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	2.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		4" Topsoil; 3" Subsoil, Roots	
0 - 2	S-1		1 - 2 - 3 - 5	24	5				Gray-Brown, Loose, Sandy Silt (ML)	
2 - 4	S-2		6 - 9 - 11 - 11	24	20		MARINE DEPOSIT		As Above, Medium Dense (ML)	
4 - 6	S-3		4 - 6 - 6 - 9	11	12	5.0			As Above (ML)	
									Boring Log B-12 Terminated at Depth of 6.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-13

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	17.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Sign	**Logged By:**	ZH	**During:**	7.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		6" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
1 - 3	S-1	X	5 - 6 - 15 - 28	24	21		EXISTING FILL		Brown, Medium Dense, Silty Sand with Gravel (FILL)	
3 - 5	S-2	X	18 - 13 - 10 - 15	20	23	4.0			As Above (FILL)	
						5.0			Gray, Medium Dense, Sandy Silt (ML)	
5 - 7	S-3	X	4 - 5 - 10 - 12	18	15				As Above (ML)	
7 - 9	S-4	X	12 - 14 - 15 - 15	24	29				As Above (ML)	
						10.0				
10 - 12	S-5	X	2 - 3 - 7 - 10	23	10		MARINE DEPOSIT		Brown, Loose to Medium Dense, Silty Sand (SM)	
						15.0				
15 - 17	S-6	X	4 - 2 - 3 - 4	17	5				Brown, Loose, Sandy Silt (ML)	
									Boring Log B-13 Terminated at Depth of 17.0 feet below ground surface.	
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-14

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	6.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	-- | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

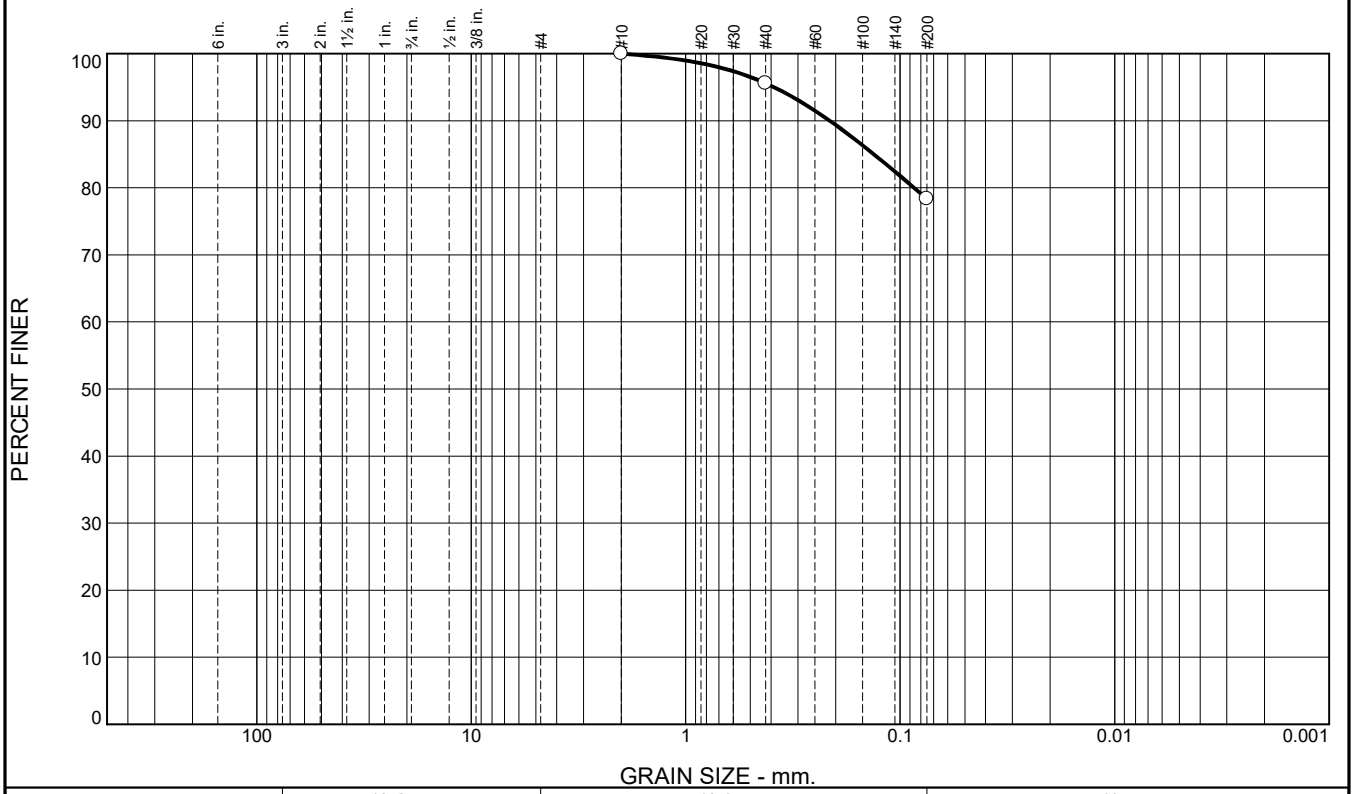
SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		2 - 6 - 22 - 16	22	28		TS		5" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
							EXISTING FILL		Brown, Dense, Silty Sand with Gravel (FILL)	
2 - 4	S-2		6 - 7 - 25 - 33	24	32				As Above (FILL)	
4 - 6	S-3		15 - 22 - 15 - 14	22	37	5.0			As Above, Gray-Brown (FILL)	
									Boring Log B-14 Terminated at Depth of 6.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

APPENDIX B
Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.4	17.3	78.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	95.6		
#200	78.3		

* (no specification provided)

Material Description

Silt with Sand

Atterberg Limits

PL= NP LL= NV PI= NV

Coefficients

D_{90}= 0.2137 D_{85}= 0.1331 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Moisture Content: 26.9%

Location: B-2
Sample Number: S-2 **Depth:** 2' - 4' **Date:** 6/4/24

WHITESTONE

Client: McDonald's USA, LLC
Project: Proposed McDonald's Restaurant #28-0178
NH Route 108 & Grapevine Drive, Dover, Strafford County, NH
Project No: GM2421922.000 **Figure** S-1

Tested By: MM **Checked By:** RWM

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.3	26.5	41.6	28.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	96.7		
#40	70.2		
#200	28.6		

* (no specification provided)

Material Description

Silty Sand

Atterberg Limits

PL= NP LL= NV PI= NV

Coefficients

D_{90}= 1.1558 D_{85}= 0.8638 D_{60}= 0.2730
D_{50}= 0.1795 D_{30}= 0.0795 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 33.0%

Location: B-4
Sample Number: S-3 **Depth:** 5' - 7' **Date:** 6/4/24

WHITESTONE

Client: McDonald's USA, LLC
Project: Proposed McDonald's Restaurant #28-0178
NH Route 108 & Grapevine Drive, Dover, Strafford County, NH
Project No: GM2421922.000 **Figure** S-2

Tested By: MM **Checked By:** RWM

WHITESTONE

APPENDIX C
Supplemental Information (USCS, Terms & Symbols)

WHITESTONE
An Employee-Owned Company

3 EXECUTIVE PARK DRIVE
SUITE 202
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UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMITS LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMITS GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS FOR SAMPLES WITH 5% TO 12% FINES

GRADATION*

% FINER BY WEIGHT

TRACE..... 1% TO 10%
LITTLE..... 10% TO 20%
SOME..... 20% TO 35%
AND..... 35% TO 50%

COMPACTNESS*
Sand and/or Gravel

RELATIVE DENSITY

LOOSE. ..... 0% TO 40%
MEDIUM DENSE.... 40% TO 70%
DENSE..... 70% TO 90%
VERY DENSE..... 90% TO 100%

CONSISTENCY*
Clay and/or Silt

RANGE OF SHEARING STRENGTH IN POUNDS PER SQUARE FOOT

VERY SOFT..... LESS THAN 250
SOFT..... ..... 250 TO 500
MEDIUM..... 500 TO 1000
STIFF..... 1000 TO 2000
VERY STIFF..... 2000 TO 4000
HARD..... GREATER THAN 4000

** VALUES ARE FROM LABORATORY OR FIELD TEST DATA, WHERE APPLICABLE. WHEN NO TESTING WAS PERFORMED, VALUES ARE ESTIMATED.*

L:\Geotechnical Forms and References\Reports\USCSTRMSSYM MA.docx

WHITESTONE
An Employee-Owned Company

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GEOTECHNICAL TERMS AND SYMBOLS

SAMPLE IDENTIFICATION

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

N: Standard Penetration Value: Blows per ft. of a 140 lb. hammer falling 30" on a 2" O.D. split-spoon.
Qu: Unconfined compressive strength, TSF.
Qp: Penetrometer value, unconfined compressive strength, TSF.
Mc: Moisture content, %.
LL: Liquid limit, %.
PI: Plasticity index, %.
δd: Natural dry density, PCF.
▼: Apparent groundwater level at time noted after completion of boring.

DRILLING AND SAMPLING SYMBOLS

NE: Not Encountered (Groundwater was not encountered).
SS: Split-Spoon - 1 ⅜" I.D., 2" O.D., except where noted.
ST: Shelby Tube - 3" O.D., except where noted.
AU: Auger Sample.
OB: Diamond Bit.
CB: Carbide Bit
WS: Washed Sample.

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Term (Non-Cohesive Soils)	Standard Penetration Resistance
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Term (Cohesive Soils)	Qu (TSF)
Very Soft	0 - 0.25
Soft	0.25 - 0.50
Firm (Medium)	0.50 - 1.00
Stiff	1.00 - 2.00
Very Stiff	2.00 - 4.00
Hard	4.00+

PARTICLE SIZE

Boulders	8 in.+	Coarse Sand	5mm-0.6mm	Silt	0.074mm-0.005mm
Cobbles	8 in.-3 in.	Medium Sand	0.6mm-0.2mm	Clay	-0.005mm
Gravel	3 in.-5mm	Fine Sand	0.2mm-0.074mm		



Front Elevation



Rear Elevation



Non-Drive-Thru Side Elevation



Drive-Thru Side Elevation

Materials Legend

- *Fiber Cement Lap Siding*
  Hardie - Board Plank
  "Monterey Taupe" by James Hardie
- *Architectural Wall Panels by Nichiha*
  "Light Mist"
- *Architectural Wall Panels by Nichiha*
  "Sand"
- Brick by Hebron Brick Company
  "Silverado"
- Aluminum Canopy (Prefinished Metal)
  "White"
- Aluminum Underscore (Prefinished)
  "Gold"
- Aluminum Trellis (Prefinished)
  "RAL 7022"
- Glazing (Windows & Storefront)
  1" Insulated Clear Glass
- Storefront Mullions
  "Deep Bronze"
- Metal Coping
  "Light Mist"
- Fascia Band
  "Cityscape"
- Service Doors & Frames
  "Fairview Taupe" by Benjamin Moore

CORE STATES GROUP

Proposed McDonald's Restaurant #028-0178
NH Route 108 & Grapevine Drive
Dover, NH
April 2, 2025




1
2
Drive-Thru


WELCOME

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

July 2, 2025

City of Dover
Planning and Community Development
288 Central Avenue
Dover, NH 03820

Attn: Donna Benton, AICP – Director of Planning and Community Development

Re: Water Main Extension Memorandum
Proposed McDonald's Restaurant with Drive-Thru
NH-108 & Grapevine Drive
Dover, NH 03820

Dear Ms. Benton,

It was requested by the City Engineer we prepare this memorandum acknowledging that the Applicant, McDonald's USA, LLC, understands any future construction activities conducted by the City to extend of the existing water main within Durham Road along the site frontage may temporarily restrict the right-out driveway to Durham Road. The Applicant is aware of the potential temporary impacts to the site egress, and they anticipate the full access drive proposed at Grapevine Drive will be sufficient for temporary conditions when the right-out driveway to Durham Road is temporarily unavailable.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

PERMIT SNAPSHOT REPORT COND-2025-0002
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	01/30/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: For project impacts within the Dover Conservation District.

Parcel: 07014-000000 Main	**Address:** 35 Boston Harbor Rd Main Dover, NH	**Zone:** R-20(Residential - Low Density)

Plan Preparer
Stephen Haight
Business: (603) 749-0443

Owner
Zachery Leavitt
Mobile: (603) 501-9107

Engineer
Joe Griffin
P.O. Box 1166
Dover, NH 03821
Business: (603) 749-0443

Applicant
Civilworks New England
Steve Haight
181 Watson Road PO Box 1166
Dover, NH 03820
Business: (603) 749-0443
Mobile: (603) 817-6651

Permit Custom Fields

Select Permit Type	Conservation District	General Purpose	New Construction	Project Zone	Residential
What is the parcel zoned?	R-20	Work	To allow proposed sewer lines for 2 (TDR approved) single-family homes to be connected to the existing public sewer system located within the Dover Conservation District, and to mitigate pre-existing drainage issues with additional grading along the abutting parcels.	permitstatefed	NHDES Shoreland Permit NHDES Wetland Permit

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_1/30/2025.jpg	01/30/2025 16:14	Haight, Steve		Uploaded via CSS
Permit Snapshot Report.pdf	01/30/2025 16:14	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
24097-EXP WETLAND APPLICATION_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
CNE24097-35 Boston Harbor RD-Permit Plan (1-30-25)_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
Conditional Use Permit Application_v1.pdf	03/26/2025 14:54	Haight, Steve		
Owner-Applicant Authorization Letter_v1.pdf	03/26/2025 14:54	Haight, Steve	Available Online	
2025.02.10_ConservationCommission.Minutes.final.pdf	06/26/2025 11:08	Blonigen, Rachel		Final Con Com Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00011039	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-00011039	$200.00	$200.00
	Grand Total for Permit	**$200.00**	**$200.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	Approved	01/31/2025	02/07/2025	06/27/2025	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date

PERMIT SNAPSHOT REPORT (COND-2025-0002)

Planning	Planning	Bassegio, Erin	Approved	01/31/2025	02/28/2025	06/27/2025

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		01/31/2025 12:39	06/27/2025 13:53
Confirm application complete v.1	Generic Action		01/31/2025 12:39
Conditional Use Review v.1	Receive Submittal	01/31/2025 0:00	06/27/2025 13:53
Planning Board v.1		06/27/2025 13:53	
Planning Board Agenda v.1	Task	06/27/2025 13:53	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: True North Development, LLC Telephone # 603-501-9107

Address of Applicant: 99 Columbus Avenue Dover, NH 03820

E-Mail Address: leavittzachery@gmail.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 7 Lot(s) # 14

Address of Property: 35 Boston Harbor Road

Zoning District(s) R-20 Overlay District(s) Dover Conservation District

Existing Use of Property: Single Family Residential

CONDITIONAL USE PERMIT INFORMATION

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

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

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

To allow installation of proposed sewer lines associated with the construction of two (2) single family homes, to be connected to the existing public sewer system. Additionally, there will be drainage improvements made to address pre-existing draiange issues affecting the abutting parcels. The proposed work will collectively impact 6,000 s.f. within the Dover Conservation District.

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

NH DES Shoreland Permit #2025-00234, approved 4/29/2025
NH DES Wetland Permit # 2025-00783, approved 6/27/2025

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

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

Professional License #: NH PE #7978 E-mail address: shaight@civilworksne.com

SIGNATURES

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

Signature of Property Owner: _____ Date: 6/30/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 6/30/25

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
7	14	True North Development, LLC	99 Columbus Avenue Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	PO Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # 1 per Application = $ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $ 200.00

AND

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

True North Development, LLC
99 Columbus Avenue
Dover, New Hampshire 03820

January 30, 2025

City of Dover
288 Central Avenue
Dover, NH 03820

Attn: Planning Board

Re: LETTER OF APPLICANT/OWNER AUTHORIZATION
Conditional Use Permit Application & Approval
35 Boston Harbor Road – Tax Map 7, Lot 14

I, Zachery Leavitt, authorize Civilworks New England and McEneaney Survey Associates to represent all applications made on behalf of me as Member of True North Development, LLC (OWNER/APPLICANT) to the City of Dover Planning Board and any other Dover Board or Committee, as well as any State of NH departments, as necessary, relative to the pursuit of approvals and permits for the development of the subject parcel.

Sincerely,

Zachery Leavitt, Member
True North Development, LLC

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday February 10, 2025
Meeting Time:	**5:30 pm**

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

1. CALL TO ORDER AND ROLL CALL

The meeting was convened at 5:30 PM.

2. ANNUAL NOMINATIONS AND ELECTIONS OF OFFICERS FOR 2025

The current officers all agreed to serve another year unless someone else was interested.
The members voted all in favor for the slate of officers as is for another year.

3. CITIZENS' FORUM

The Chair gave instructions for Citizens' forum.
No one spoke

4. APPROVAL OF THE PRIOR MEETING MINUTES- JANUARY 13, 2025

S. Fellows moved to approve the minutes of January 13, 2025 as submitted. A. Lyon seconded. Vote: U/A

5. OLD BUSINESS:

M. Edgecomb noted staff is working on a committee handbook starting with Planning Board as a template and will move to other boards and committees after that. The goal is to have one in the next few months.

6. NEW BUSINESS

The Chair noted there has been a request to proceed with the meeting out of order as listed on the agenda. No one had an objection.

B. City of Dover Conditional Use Permit for Summit Land Development, LLC, (Owner: 16 Industrial Park, LLC), Assessor's Map G, Lot 4-1, zoned CM, located at Industrial Park Road. Proposal is for a stormwater management system and associated site grading for a seasonal automobile storage and maintenance facility, resulting in 6,830 ± s.f. of wetland buffer impacts and no direct wetland impacts.

Jace Gregoire, Civil Works represented the item, described the site and noted the proposal is to is for a stormwater management system and associated site grading for a seasonal automobile storage and maintenance facility. The wetland buffer impacts result in 6,830 ± s.f. with no direct wetland impacts.

Committee members asked some clarifying questions which were addressed by the applicant.

S. Fellows moved to endorse the CUP as presented. Seconded by: R. Atwood. Vote: All in favor with 0 opposed.

A. City of Dover Conditional Use Permit and NHDES Expedited Minimum Impact Wetlands Permit for True North Development, LLC, Assessor's Map 7, Lot 14, zoned R-20, located at 35 Boston Harbor Rd. . Proposal is to construct utility lines and drainage and grading improvements to support the development of two (2) new single-family homes, resulting in 2,756 square feet of impact within the Conservation District. *(The two single-family homes were previously approved through Transfer of Development Rights (TRAN-2024_0013) and are proposed outside of the Conservation District*

Proposal is to construct utility lines and drainage and grading improvements to support the development of two (2) new single-family homes, resulting in 2,756 square feet of impact within the Conservation District. Approval required of NHDES Expedited Minimum Impact Wetlands Permit for True North Development, LLC

Jace Gregoire, Civil Works presented the item. He explained the site: location and existing elements. He explained the proposal to the committee.

D. Benton explained the transfer of development rights program/ options.

The applicant answered questions from committee members.

Members expressed concerns about the proposed impervious cover so close to the bay. The applicant addressed the concern by giving additional details.
Discussion occurred relating to the approved development and its relation to the water.
Continued discussion items included: trees/ vegetation, culverts, drainage, stormwater maintenance and management.

S. Fellows noted hesitation to approve, but as the buildings have been approved for construction, it seems reasonable to make the allowances for utilities and drainage.

S. Fellows moved to endorse the CUP and wetlands permit as presented. Seconded by: K. Murphy.
Additional discussion:

- The drainage will be reviewed by City Engineer for compliance/ requirements. There is concern about the future with run-off and the TDR program should be looked at and sensitive areas like this should perhaps not be granted TDR approval.
- Interested to have DES input prior to a vote. There was a recent item that was approved by Conservation Commission and then denied by DES.
- Plantings

Vote: 3 in favor with 4 opposed. Request is not approved.

Discussion with committee and staff on next steps. Committee should write up a list of items they have concerns about and provide that information to staff so the items can be addressed by staff and the applicant as appropriate.

- Run model again
- City Engineering review
- Have DES weigh in first

Details about concerns were reviewed with the applicant.

R. Warnock moved to continue the item for the reasons discussed. Seconded by: A. Lyon. Vote: All in favor

C. Conservation Fund Request for Staff Administration Costs

D. Benton explained the annual request.

S. Fellows moved to approve the fund request of $110,000. K. Murphy seconded. Vote: All in favor.

7. REPORT FROM THE CHAIR

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

M. Edgecomb noted the correspondence received is one letter from NHDES, an approval of a tidal docking structure at the undeveloped lot on Back Rd.

8. OTHER BUSINESS

A. Update from Forest Management Subcommittee

- **a.** Ash trees
  - **i.** Met with John Storer of Community Services
  - **ii.** How can Con Com help?
  - **iii.** Focus on replacing non-ash trees with current budget funds
  - **iv.** subcommittee will work on a plan to most efficiently replace the ash trees
    1. Prep a Grant for a plan for the ash trees- in progress
    2. Discussion on timeline

B. **City Nature Challenge**

- a. B. Group looking to set this up in Dover. It's April 25-28. She explained the details.
  - i. Discussion and ideas

9. ADJOURNMENT

S. Fellows moved to adjourn. R. Warnock seconded. Vote: U/A
The meeting was adjourned at 6:47 PM.

PROJECT NARRATIVE

for

Trust North Development

Conditional Use Permit

Residential Site Development

35 Boston Harbor Road

Tax Map 7, Lot 14

PROJECT OVERVIEW & SITE CHARACTERISTICS

The subject parcel is located at 35 Boston Harbor Road, Dover, NH, shown on Tax Map 7 as Lot 14 and is located within the City of Dover's R-20 District. The 0.98± acre lot is currently developed with an existing single-family home, detached garage, paved driveway, shared gravel drive, landscape and lawn areas, and utilities. The subject parcel is located adjacent to Little Bay and the entire lot is subject to the NHDES 250' Protected Shoreland and 100' Tidal Buffer Zone. Additionally, a portion of the parcel is within a Special Flood Hazard Area, Zone AE, Elevation 6, as shown on Flood Insurance Rate Map 33017C0340E.

The proposed design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The total proposed project disturbance is 29,963 sf, with 23,963 sf within the NHDES 250' Protected Shoreland jurisdiction, and 6,000 sf within the NHDES 100' Tidal Buffer Zone jurisdiction and City of Dover Conservation District. The proposed work within Conservation District includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area. There is no work proposed within the Special Flood Hazard area.

CONSERVATION DISTRICT SETBACK & IMPACT

The site is located directly adjacent to Little Bay and is subject to the City of Dover's 100' Conservation District. The proposed work within the Conservation District includes 6,000 sf of temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area.

PERMIT SUMMARY

City of Dover Conditional Use Permit: Pending
NHDES Shoreland Permit: APPROVED 4/29/2025 # 2025-00234
NHDES Wetlands Permit: APPROVED 6/27/2025 # 2025-00783

DRAINAGE

Historically, stormwater runoff backs up between the paved and gravel sections of Boston Harbor Road. The raised gravel section prevents stormwater runoff from draining and discharging into Little Bay. This is a known concern that has been acknowledged by the abutters and City of Dover's Engineering department. As part of this project, the applicant has agreed to install two (2) 12" HDPE cross-culverts under the gravel section Boston Harbor Road (one (1) on either side of the subject parcel). Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

The proposed project will implement stone drip edges along the edges of the existing & proposed buildings and along the proposed edges of pavement. This will the ability for stormwater to be infiltrated and treated prior to discharging to Little Bay.

The proposed project will have a minimal impact on the watershed and will improve the current drainage situation in the area.

CONDITIONAL USE PERMIT NARRATIVE
§170-27
DOVER CONSERVATION DISTRICT
for
True North Development, LLC
Residential Site Development
35 Boston Harbor Road
Tax Map 7, Lot 14

C. Conditional Use Permits

(2) The undertaking of a use not otherwise permitted in the Conservation District, which may include the erection of a structure, dredging, filling, draining or otherwise altering the surface configuration of the land, provided that:

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

(1) Attempted avoidance of the impact:

The proposed site design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The project proposes a total disturbance of 29,963 sf, with the majority, 23,963 sf, being located upland and outside of the City of Dover's Conservation District, and 6,000 sf within the Conservation District. The proposed work within the Conservation District includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with demolition and reconstruction of the single-family home, and impacts associated with the removal of existing paved area.

(2) Minimization of the impacts:

The project has been designed to limit impacts to the greatest extent possible within the Conservation District. The estimated total disturbance for the proposed project is 29,963 sf, with the majority, 23,963 sf, located upland and outside of the City of Dover's Conservation District, and 6,000 sf within the Conservation District.

(3) Planned mitigation of the effects of the impact:

The project proposes two (2) cross-culverts to be installed along the property lines under Boston Harbor Road to help address known ponding issues. Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

This project also includes a net reduction of 577 sf of impervious area within the Conservation District, including the removal of paved areas between the existing home and Little Bay, as well as the implementation of stone drip edges around the existing foundations and proposed buildings on the property.

Additionally, all disturbed areas will be loamed and seeded.

(4) Efficacy of the soil erosion and sedimentation control plan:

During construction a double row siltsoxx is proposed along the edge of disturbance, this will prevent silt and construction debris from washing into Little Bay. At the completion of the project, the areas that are disturbed will be re-graded, and loamed and seeded. The siltsoxx will not be removed until the site is stable. See plan set for locations, specifications, and details for erosion control.

DRAINAGE NARRATIVE

PROJECT SITE CHARACTERISTICS

The subject parcel is located at 35 Boston Harbor Road, Dover, NH shown on Tax Map 7 as Lot 14 and located within the City of Dover's R-20 District. The 0.98± acre lot is currently developed as residential with an existing single-family home, detached garage, paved driveway, shared gravel drive, landscape and lawn areas, and utilities. The subject parcel is located adjacent to Little Bay and the entire lot is subject to the NHDES 250' Protected Shoreland and 100' Tidal Buffer Zone. Additionally, a portion of the parcel is within a Special Flood Hazard Area, Zone AE, Elevation 6, as shown on Flood Insurance Rate Map 33017C0340E.

PROJECT OVERVIEW

The proposed site design includes the demolition and reconstruction of the existing single-family home, the construction of two (2) new single-family homes, grading and drainage improvements, utility improvements, along with the reconstruction of the paved site access. The total proposed project disturbance is 29,963 sf, with 23,963 sf within the NHDES 250' Protected Shoreland jurisdiction, and 6,000 sf within the NHDES 100' Tidal Buffer Zone jurisdiction and City of Dover Conservation District. The proposed work within the 100' Tidal Buffer Zone includes temporary impacts associated with underground utility installation and permanent impacts associated with the grading and drainage impacts from the installation of the culverts, impacts associated with the demolition and reconstruction of the single-family home, and impacts associated with the removal of an existing paved area. NHDES Shoreland Permit # 2025-00234, issued 4/29/2025 and Wetland Permit # 2025-00783, issued 6/27/2025. There is no proposed work within the Special Flood Hazard area.

DRAIANGE

Historically, stormwater runoff backs up between the paved and gravel sections of Boston Harbor Road. The raised gravel section prevents stormwater runoff from draining and discharging into Little Bay. This is a known concern that has been acknowledged by the abutters and City of Dover's Engineering department. As part of this project, the applicant has agreed to install two (2) 12" HDPE cross-culverts under the gravel section Boston Harbor Road (one (1) on either side of the subject parcel). Additionally, swales will be graded at the outfalls of the culverts to facilitate proper drainage into Little Bay.

The proposed project will implement stone drip edges along the edges of the existing & proposed buildings and along the proposed edges of pavement. This will the ability for stormwater to be infiltrated and treated prior to discharging to Little Bay.

The proposed project will have a minimal impact on the watershed and will improve the current drainage situation in the area.

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

SHORELAND IMPACT PERMIT 2025-00234

NOTE CONDITIONS

PERMITTEE:	**TRUE NORTH DEVELOPMENT LLC** **99 COLUMBUS AVE** **DOVER NH 03820**
PROJECT LOCATION:	**35 BOSTON HARBOR RD, DOVER** **Tax Map/Block/Lot(s): 7/no block/14**
WATERBODY:	**LITTLE BAY**
APPROVAL DATE:	**APRIL 29, 2025** **EXPIRATION DATE: APRIL 29, 2030**

Shoreland Permit Application 2025-00234 has been found to meet or exceed the requirements of RSA 483-B as required per RSA 483-B:6, II. The New Hampshire Department of Environmental Services (NHDES) hereby issues this Shoreland Impact Permit with conditions pursuant to RSA 483-B:6, II.

PERMIT DESCRIPTION:
Impact 23,963 square feet (SF) of protected shoreland in order to demolish and reconstruct the existing single-family home, construct two (2) new single-family homes, grade and provide drainage improvements, utility improvements, along with the reconstruction of the paved site access.

Impervious Surface Percentage Approved: 29.4%

Natural Woodland Area Required per RSA 483-B:9, V, (b): 4,575 SF.

THE FOLLOWING PROJECT-SPECIFIC CONDITIONS HAVE BEEN APPLIED TO THE PERMIT PURSUANT TO ENV-WQ 1406.15(c):

1. All work shall be in accordance with plans by Civilworks New England dated March 31, 2025 and received by the New Hampshire Department of Environmental Services (NHDES) on March 31, 2025 pursuant to Env-Wq 1406.15(f).
2. Within three days of final grading or temporary suspension of work in an area that is in or adjacent to wetlands or surface waters, all exposed soil areas shall be stabilized by seeding and mulching during the growing season, or if not within the growing season, by mulching with tack or netting and pinning on slopes steeper than 3:1 as required pursuant to RSA 483-B:9, V(d) Erosion and Siltation, (1).
3. All pervious technologies used shall be installed and maintained to effectively absorb and infiltrate stormwater as required per RSA 483-B:6, II and Rule Env-Wq 1406.15(c) in order to ensure compliance with RSA 483-B:9, V(g).
4. The proposed stormwater management structure shall be installed and maintained to effectively absorb and infiltrate stormwater in order to ensure compliance with RSA 483-B:9, V(g).
5. Photographs documenting the construction of the proposed stormwater management shall be submitted to the Department prior to any party taking up occupancy of the new residential primary structure as required per RSA 483-B:6, II and Rule Env-Wq 1406.15(c) in order to ensure compliance with RSA 483-B:9, V(g).
6. This permit shall not be interpreted as acceptance or approval of any impact that will occur within wetlands jurisdiction regulated under RSA 482-A including all wetlands, surface waters and their banks, the tidal-buffer zone,

and sand dunes. The owner is responsible for maintaining compliance with RSA 482-A and Administrative Rules Env-Wt 100 - 900 and obtaining any Wetland Impact Permit that may be required prior to construction, excavation or fill that will occur within Wetlands jurisdiction as required pursuant to RSA 483-B:6, I(b).

7. This permit shall not preclude NHDES from taking any enforcement or revocation action as authorized pursuant to 483-B:5, I, if NHDES later determines that any of the structures depicted as "existing" on the plans submitted by the applicant were not previously permitted or grandfathered.

THE FOLLOWING STANDARD PROJECT CONDITIONS SHALL BE MET PURSUANT TO ENV-WQ 1406.20:

1. Erosion and siltation control measures shall be installed prior to the start of work, be maintained throughout the project, and remain in place until all disturbed surfaces are stabilized.
2. Erosion and siltation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.
3. No person undertaking any activity in the protected shoreland shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards established in Env-Wq 1700, and the requirements in Env-Wq 1404.01(a) and(b).
4. Any fill used shall be clean sand, gravel, rock, or other suitable material.
5. For any project where mechanized equipment will be used, orange construction fence shall be installed prior to the start of work at the limits of the temporary impact area as shown on the approved plans; be maintained throughout the project; and remain in place until all mechanized equipment has been removed from the site.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:

1. During construction, a copy of this permit should be posted on site in a prominent location visible to inspecting personnel.
2. This permit does not convey a property right, nor authorize any injury to property of others, nor invasion of rights of others.
3. Pursuant to Env-Wq 1406.21, transfer of this permit to a new owner requires notification to, and approval of, NHDES.
4. This project has been screened for potential impact to **known** occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

APPROVED:



Craig W. Day
Shoreland/Shoreline Specialist, Shoreland Program
Wetlands Bureau, Land Resources Management
Water Division

THIS PERMIT IS NOT VALID UNTIL SIGNED BY THE PARTIES BELOW (Env-Wq 1406.21(c))

PERMITTEE SIGNATURE (required)

PRINCIPAL CONTRACTOR SIGNATURE (required, if any)

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

June 30, 2025

TRUE NORTH DEVELOPMENT LLC
99 COLUMBUS AVE
DOVER NH 03820

Re: Approved Standard Dredge and Fill Wetlands Permit Application (RSA 482-A)
NHDES File Number: 2025-00783
Subject Property: 35 Boston Harbor Rd, Dover, Tax Map/Block/Lot(s): 7/no block/14

Dear Applicant:

On June 27, 2025, the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau approved the above-referenced Standard Dredge and Fill Wetlands Permit Application. Enclosed please find Wetlands Permit # 2025-00783 to Impact 6,000 square feet of previously developed 100-foot tidal buffer zone to remove and reconstruct an existing primary structure, install underground utilities, improve stormwater drainage and site grading. The permittee shall notify the department in writing at least one week prior to commencing any work under this permit and shall file a notice of completion of work and certificate of compliance with the department within 10 working days of completion of the work authorized by this permit.

This permit is not valid unless signed by the permittee and the principal contractor, if any, who will build or install the project. Prior to start of construction, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project**.** It shall remain posted until the project is completed. Transfer of this permit to a new owner shall require notification to, and approval of, the NHDES. **This permit does not convey any property right, nor does it preclude the need to meet any other applicable state, federal, or municipal legal requirements.**

In accordance with RSA 482-A:10, RSA 21-O:14, and Rules Ec-Wet 100-200, **any person aggrieved by this decision may file a Notice of Appeal directly with the NH Wetlands Council (Council) within 30 days of the decision date, June 27, 2025.** Every ground claiming the decision is unlawful or unreasonable must be fully set forth in the Notice of Appeal. Only the grounds set forth in the Notice of Appeal are considered by the Council. Information about the Council, including Council Rules, is available at https://www.nhec.nh.gov/wetlands-council/about. For appeal related issues, contact the Council Appeals Clerk at (603) 271-3650.

This approval is based on the following findings:
1. This project is classified as a minor impact project in accordance with Env-Wt 610.17(b)(3) for any dredging, filling, or construction activity, or any combination thereof, that will disturb 3,000 SF or more but less than 10,000 SF in the developed upland tidal buffer.
2. Per Rule Env-Wt 311.06(h), the Dover Conservation Commission did not provide comments on the proposed project.

If you have any questions, please contact me at Alexander.D.Feuti@des.nh.gov or (603) 271-2917.

Sincerely,



Alexander Feuti
Wetlands Specialist, Wetlands Bureau
Land Resources Management, Water Division

Enclosure

Copied: Stephen Haight, Civilworks New England
Municipal Clerk/Conservation Commission

WETLANDS PERMIT 2025-00783
NOTE CONDITIONS

PERMITTEE:	**TRUE NORTH DEVELOPMENT LLC** **99 COLUMBUS AVE** **DOVER NH 03820**
PROJECT LOCATION:	**35 BOSTON HARBOR RD, DOVER** **Tax Map/Block/Lot(s): 7/no block/14**
WATERBODY:	
APPROVAL DATE:	**JUNE 27, 2025** **EXPIRATION DATE: JUNE 27, 2030**

The New Hampshire Department of Environmental Services' (NHDES) review of permit application 2025-00783 has found that it is consistent with RSA 482-A. NHDES hereby issues this Wetlands Permit authorizing the impacts described provided the Conditions imposed are met. To validate this Permit, the Permittee and the Principal Contractor are required to sign below.

PERMIT DESCRIPTION:
Impact 6,000 square feet of previously developed 100-foot tidal buffer zone to remove and reconstruct an existing primary structure, install underground utilities, improve stormwater drainage and site grading.

THIS PERMIT IS SUBJECT TO THE FOLLOWING PROJECT-SPECIFIC CONDITIONS:
1. In accordance with Env-Wt 307.16, all work shall be done in accordance with the revised plans by Civilworks New England, dated March 31, 2025 and as received by the NH Department of Environmental Services (NHDES) on April 28, 2025.
2. In accordance with Env-Wt 314.02(b) and (c), the permittee shall record the permit at the Strafford County Registry of Deeds. Any limitations or conditions in the permit so recorded shall run with the land beyond the expiration of the permit. The permittee shall provide the department with a copy of the permit stamped by the registry with the book and page and date of receipt.
3. All work shall be conducted and maintained in such a way as to protect water quality as required by Rule Env-Wt 307.03(a) through (h).
4. In accordance with Env-Wt 307.15(b), mobile heavy equipment working in wetlands shall not be stored, maintained, or repaired in wetlands, except that repairing or refueling in a wetland is allowed if equipment cannot practicably be removed and secondary containment is provided.
5. In accordance with Env-Wt 307.03(g)(1), the person in charge of construction equipment shall inspect such equipment for leaking fuel, oil, and hydraulic fluid each day prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands.
6. In accordance with Env-Wt 307.03(g)(2), the person in charge of construction equipment shall repair any leaks prior to using the equipment in an area where such fluids could reach groundwater, surface waters, or wetlands.
7. In accordance with Env-Wt 307.03(g)(3) and (4), the person in charge of construction equipment shall maintain oil spill kits and diesel fuel spill kits, as applicable to the type(s) and amount(s) of oil and diesel fuel used, on site so as to be readily accessible at all times during construction; and train each equipment operator in the use of the spill kits.
8. In accordance with Env-Wt 307.12(c), any seed mix used shall not contain plant species that are exotic aquatic weeds.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:
1. This permit does not preclude the need to meet any other applicable state, federal, or municipal legal requirements.

2. The permit holder is responsible for reading, and ensuring compliance with, the applicable general conditions established in Env-Wt 307.
3. This permit does not in any way authorize the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.
4. This approval does not convey any property right. The permittee is responsible for ensuring that they have the legal authority to access the subject lands and conduct the impacts described.

APPROVED:



Alexander Feuti
Wetlands Specialist, Wetlands Bureau
Land Resources Management, Water Division

THE SIGNATURES BELOW ARE REQUIRED TO VALIDATE THIS PERMIT (Env-Wt 314.01).

_____ _____

PERMITTEE SIGNATURE (required) PRINCIPAL CONTRACTOR SIGNATURE (required)

NHDES SHORELAND/WETLANDS PERMIT & CITY OF DOVER CONDITIONAL USE PERMIT PLAN

TAX MAP 7, LOT 14

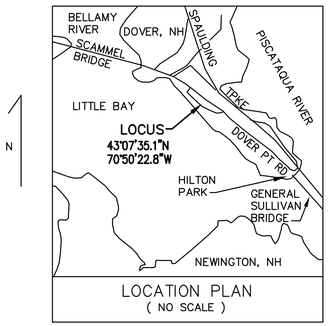
35 BOSTON HARBOR ROAD

DOVER, NH

JANUARY 30, 2025

REVISED: MARCH 31, 2025

REVISED: JUNE 30, 2025



LOCATION PLAN
(NO SCALE)

_____ _____
DATE

OWNER/APPLICANT

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

SITE CIVIL ENGINEER

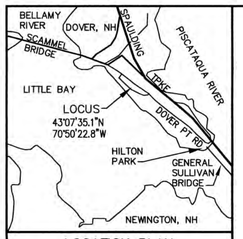
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LAND SURVEYOR

MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 1166
181 WATSON ROAD
DOVER, NH 03821
(603) 742-0911

SHEET INDEX

	SHEET
COVER SHEET	1
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	2
TDR SITE PLAN (BY MCENEANEY SURVEY)	3
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GRADING, DRAINAGE, & EROSION CONTROL PLAN	6
EROSION CONTROL NOTES	7
EROSION CONTROL DETAILS	8
DETAILS	9



LOCATION PLAN
(NO SCALE)

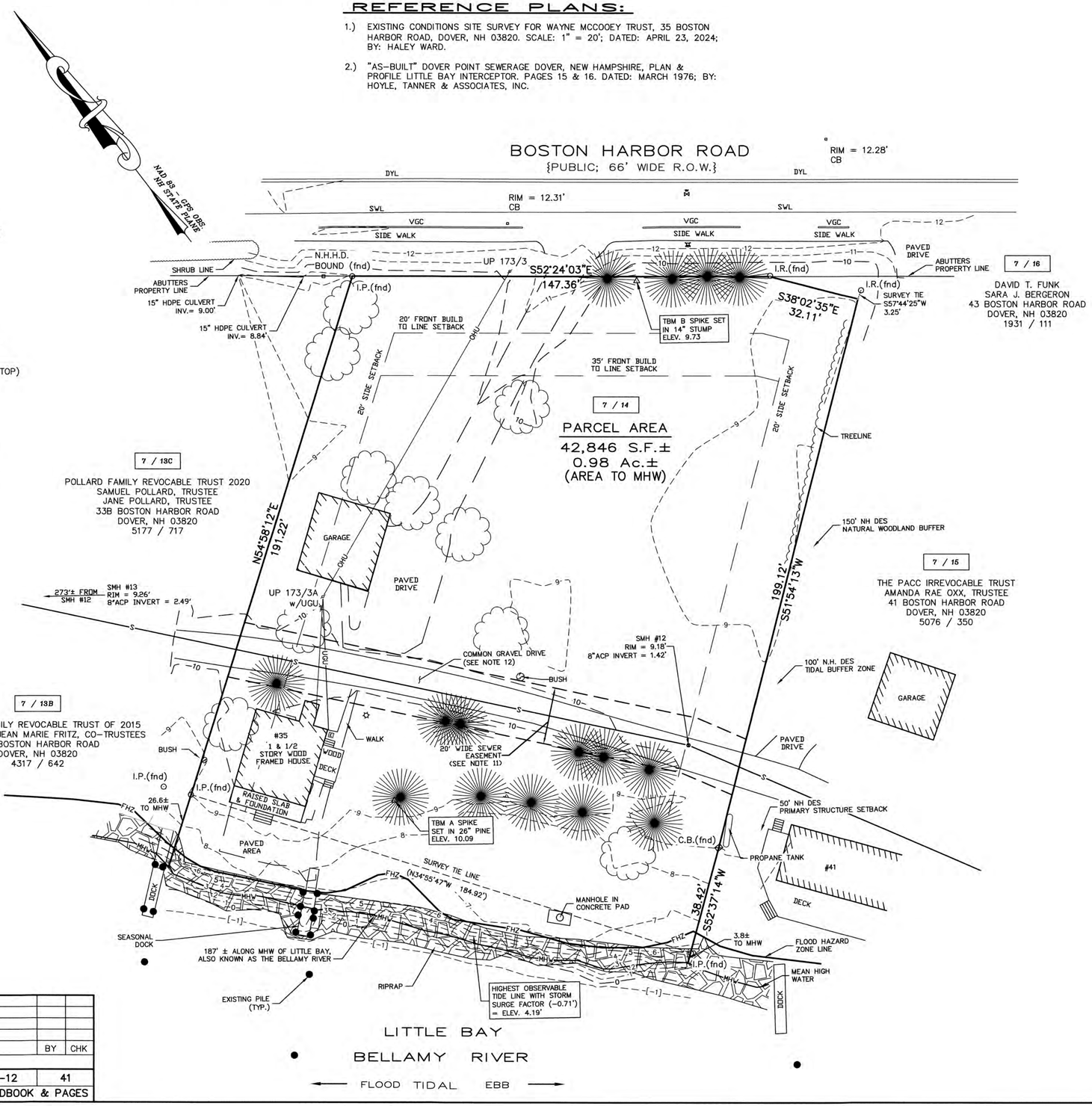
LEGEND

I.P.(fnd) – IRON PIPE (FOUND)
I.R.(fnd) – IRON ROD (FOUND)
C.B.(fnd) – CONCRETE BOUND (FOUND)
CB – CATCH BASIN
WG – WATER GATE VALVE
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o-UP 410/5 – UTILITY POLE W/ I.D. Nos.
R.O.W. – RIGHT OF WAY
— 10 — — — CONTOUR LINE
WSO – WATER SHUT OFF (CURB STOP)
HYD. – FIRE HYDRANT
— W — WATER SERVICE LINE
— S — SEWER LINE
MHW – MEAN HIGH WATER
SMH – SEWER MANHOLE
OHU – OVERHEAD UTILITIES
UGU – UNDERGROUND UTILITIES
SWL – SINGLE WHITE LINE
DYL – DOUBLE YELLOW LINE
VGC – VERTICAL GRANITE CURB
– LAMP POST
– DECIDUOUS TREE
– CONIFEROUS TREE

REFERENCE PLANS:

1.) EXISTING CONDITIONS SITE SURVEY FOR WAYNE MCCOOEY TRUST, 35 BOSTON HARBOR ROAD, DOVER, NH 03820. SCALE: 1" = 20'; DATED: APRIL 23, 2024; BY: HALEY WARD.

2.) "AS-BUILT" DOVER POINT SEWERAGE DOVER, NEW HAMPSHIRE, PLAN & PROFILE LITTLE BAY INTERCEPTOR. PAGES 15 & 16. DATED: MARCH 1976; BY: HOYLE, TANNER & ASSOCIATES, INC.



NOTES:

1.) OWNER OF RECORD:
TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 5196, PAGE 358

2.) 7 / 14 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA = 42,846 S.F.± / 0.98 Ac. ±

4.) THE INTENT OF THIS PLAN IS TO DEPICT THE PARCEL BOUNDARIES AND EXISTING SITE CONDITIONS AS OF NOVEMBER 21, 2024.

5.) ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20)
DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE (20,000 x 3)	= 60,000 S.F.*
* 170-28.1. RIVERFRONT RESIDENTIAL OVERLAY DISTRICT. THE MINIMUM LOT SIZE SHALL BE THREE TIMES THE MINIMUM LOT SIZE	
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 125 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD TO LINE	= 20 FEET MINIMUM – 35 FEET MAXIMUM
SIDE SETBACK	= 20 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET
WETLAND BUFFER	= 50 FEET

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION PER REFERENCE PLAN No. 1.

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

9.) NO WETLANDS WERE OBSERVED ON THE SITE PER REFERENCE PLAN No. 1, IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL.

10.) PARCEL IN ITS ENTIRETY IS SUBJECT TO THE STATE OF NEW HAMPSHIRE SHORELINE WATER QUALITY PROTECTION ACT (SWQPA). THOSE AREAS WITHIN 250 FEET OF THE BELLAMY RIVER REFERENCE LINE.

11.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.
THE PARCEL IS SUBJECT TO A SEWER EASEMENT TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. BOOK 1007, PAGE 166.

12.) THE PARCEL IS SUBJECT TO A COMMON DRIVEWAY EASEMENT LOCATED OVER THE PARCEL. S.C.R.D. VOL. 396, PAGE 136, NO WIDTH GIVEN.

THE PARCEL BENEFITS FROM ACCESS EASEMENTS OVER VARIOUS ABUTTING PARCELS PROVIDING ACCESS TO BOSTON HARBOR ROAD OVER THE EXISTING DRIVEWAY.

13.) THE SOIL TYPE ON THE SITE IS:
Sb SAUGATUCK LOAMY SAND
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

14.) INVERT DATA WAS PROVIDED BY THE CITY OF DOVER AND NEEDS TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION. THE INFORMATION PROVIDED CAN BE FOUND ON REFERENCE PLAN #2.

NO.	DATE	DESCRIPTION	BY	CHK
	24097	REVISIONS		

24-2628	EC	24-12 / 41
PROJECT NO	TYPE	FIELDBOOK & PAGES

EXISTING CONDITIONS PLAN
PREPARED FOR
TRUE NORTH DEVELOPMENT, LLC
TAX MAP 7, LOT No. 14
35 BOSTON HARBOR ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

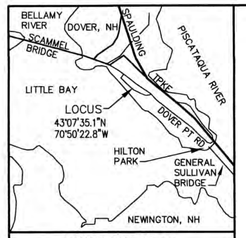
DRAWN BY: JJH	FILE: M:\2628\DWG\2628 EC
SCALE: 1" = 20'	DATE: JANUARY 24, 2025

20 10 0 10 20 40 60 80

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

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

24-2628 EC.dwg 22x34 1/24/2025 12:19:10

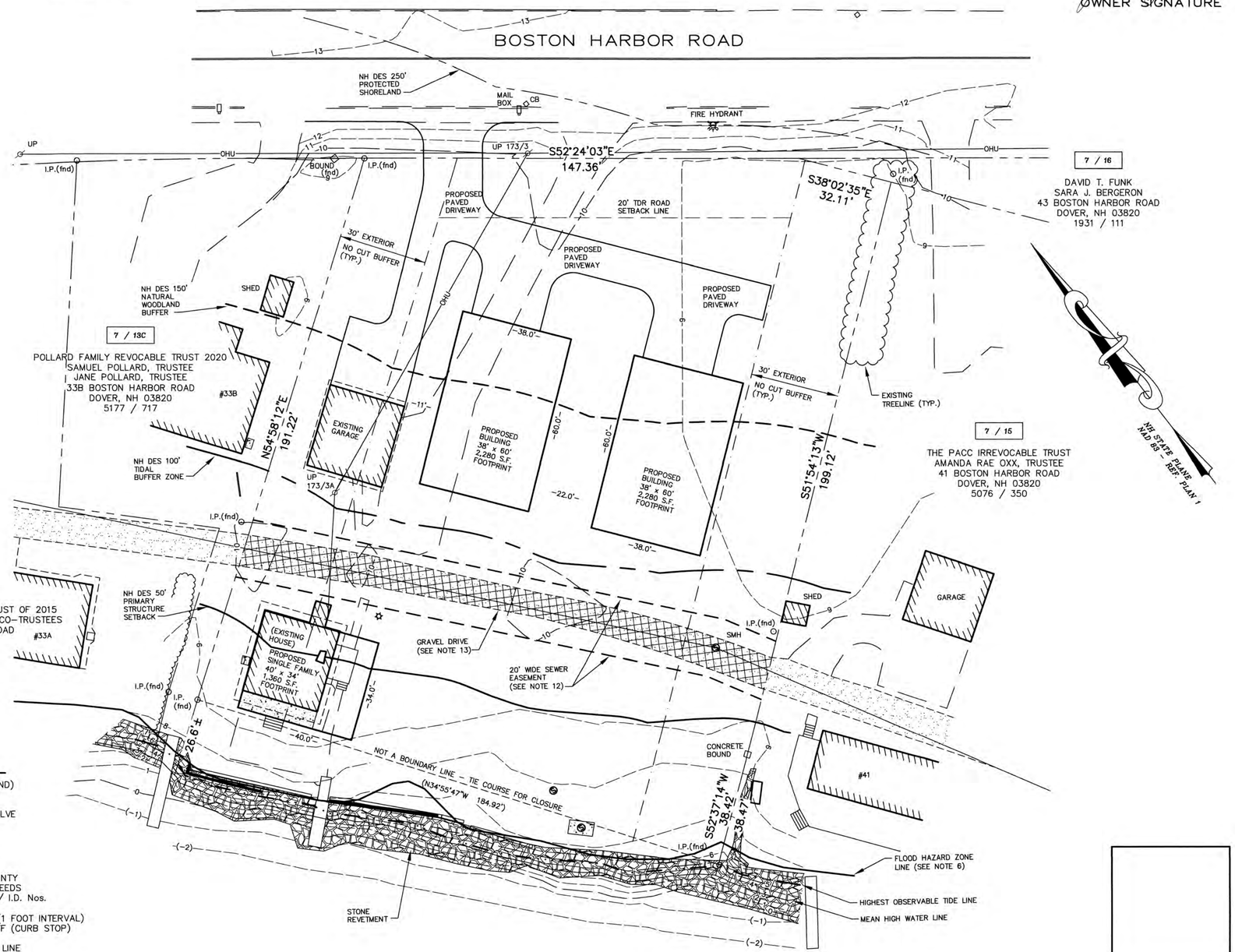


LOCATION PLAN
(NO SCALE)

REFERENCE PLANS:

1.) EXISTING CONDITIONS SITE SURVEY FOR WAYNE MCCOOEY TRUST, 35 BOSTON HARBOR ROAD, DOVER, NH 03820. SCALE: 1" = 20'; DATED: APRIL 23, 2024; BY: HALEY WARD.

OWNER SIGNATURE



LEGEND

I.P.(fnd) – IRON PIPE (FOUND)
CB – CATCH BASIN
WV – WATER GATE VALVE
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
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ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
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S – SEWER LINE
SMH – SEWER MANHOLE
OHU – OVERHEAD UTILITIES

NOTES:

1.) OWNER OF RECORD:
TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 5196, PAGE 358

2.) 7 / 14 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA = 42,846 S.F.± / 0.98 Ac. ±

4.) THE INTENT OF THIS PLAN IS TO DEPICT A PROPOSED TDR PLAN CONTAINING THREE (3) SINGLE FAMILY DWELLINGS.

5.) ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20)
DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE (20,000 x 3)	= 60,000 S.F.*
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 125 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT BUILD TO LINE	= 20 FEET MINIMUM
	= 35 FEET MAXIMUM
SIDE SETBACK	= 20 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET
WETLAND BUFFER	= 50 FEET

* 170-28.1. RIVERFRONT RESIDENTIAL OVERLAY DISTRICT.
THE MINIMUM LOT SIZE SHALL BE THREE TIMES THE MINIMUM LOT SIZE

TRANSFER OF DEVELOPMENT RIGHTS REGULATIONS:

ABUTTING A ROAD SETBACK	= 20 FEET
ABUTTING A LOT LINE SETBACK	= 10 FEET
STREET SIDES OF UNITS	= 20 FEET
ABUTTING STRUCTURES	= 20 FEET
NO CUT BUFFER FROM EXTERIOR LOT LINE	= 30 FEET

6.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) AND VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION PER REFERENCE PLAN No. 1.

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

9.) NO WETLANDS WERE OBSERVED ON THE SITE PER REFERENCE PLAN No. 1, IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

10.) TDR UNIT CALCULATIONS:

A)	42,846 S.F.-CONSERVATION (0 S.F.)	= 42,846 S.F.
B)	42,846 x 0.85	= 36,419 S.F.
C)	36,419 x 0.85	= 30,956 S.F.
D)	30,958 / 60,000	= 1 UNIT
E)	THE EXISTING SINGLE-FAMILY HOME WHICH HAS THE RIGHT TO COVERT TO A DUPLEX WILL REMAIN A SINGLE-FAMILY UNIT. TWO (2) SINGLE-FAMILY UNITS ARE TO BE PURCHASED UNDER THE TDR REGULATIONS TO FULFILL THE TOTAL DENSITY REQUEST OF THREE (3) UNITS. NO ADDITIONAL UNITS MAY BE CREATED WITHOUT REVIEW AND APPROVAL OF THE PLANNING DEPARTMENT AND/OR PLANNING BOARD WHICHEVER IS APPLICABLE.	

11.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY HALEY WARD WITH AN ERROR NOT GREATER THAN 1 IN 10,000. (REF. PLAN No. 1).

12.) PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.
THE PARCEL IS SUBJECT TO A SEWER EASEMENT TO THE CITY OF DOVER AS DESCRIBED IN S.C.R.D. BOOK 1007, PAGE 166.

13.) THE PARCEL IS SUBJECT TO AND BENEFITS FROM A COMMON DRIVEWAY EASEMENT LOCATED OVER THE PARCEL.
S.C.R.D. VOL. 396, PAGE 136, NO WIDTH GIVEN.

14.) THE SOIL TYPE ON THE SITE IS:
Sb SAUGATUCK LOAMY SAND
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

15.) THIS SITE PLAN USES THE TRANSFER OF DEVELOPMENT RIGHTS ORDINANCE WHICH ALLOWS FOR RELIEF TO THE SETBACKS, LOT AREA, FRONTAGE, DENSITY AND INTENSITY OF DEVELOPMENT. THE BOARD GRANTED TDR RELIEF TO PURCHASE TWO (2) UNRESTRICTED UNITS FOR A TOTAL OF THREE (3) UNITS WITHIN THE EXISTING LOT OF RECORD. THE SINGLE-FAMILY HOME MAY NOT BE CONVERTED TO A DUPLEX WITHOUT FURTHER REVIEW AND APPROVAL BY THEW PLANNING BOARD.

16.) A CONDITIONAL USE PERMIT WILL BE REQUIRED FOR THE RECONSTRUCTION OF THE SINGLE FAMILY HOME WITHIN THE CONSERVATION DISTRICT.

17.) THE TWO PROPOSED UNITS WILL BE PURCHASED AS UNRESTRICTED UNITS THROUGH THE TDR ORDINANCE.

NO.	DATE	DESCRIPTION	BY	CHK
2	01/23/24	ADD & REVISE NOTES FOR NOD	JJH	KMM
1	10/31/24	MOVE PROPOSED BUILDINGS 10.5' AWAY FROM WATER	RJM	KMM
CNE 24097		REVISIONS		
24-2628		TDR APPR	–	–
PROJECT NO		TYPE	FIELDBOOK & PAGES	

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

TDR PLAN
PREPARED FOR
TRUE NORTH DEVELOPMENT, LLC
TAX MAP 7, LOT No. 14
35 BOSTON HARBOR ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. TRAN 2024-0013

DRAWN BY: RJM	FILE: 2628\DWGS\24-2628 TDR
SCALE: 1" = 20'	DATE: SEPT. 27, 2024

20 10 0 10 20 40 60 80

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

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

SURVEYING – PLANNING – CONSULTING

24-2628 TDR.dwg 2628 TDR APPR 1/29/2025 14:46:09

DOVER SITE PLAN REVIEW NOTES:

1. THE PROPOSED SITE DESIGN INCLUDES THE DEMOLITION AND RECONSTRUCTION OF THE EXISTING SINGLE-FAMILY HOME, THE CONSTRUCTION OF TWO (2) NEW SINGLE-FAMILY HOMES, GRADING AND DRAINAGE IMPROVEMENTS, UTILITY IMPROVEMENTS, ALONG WITH THE RECONSTRUCTION OF THE PAVED SITE ACCESS. THE TOTAL PROPOSED PROJECT DISTURBANCE IS 29,963 SF, WITH 23,963 SF WITHIN THE NHDES 250'PROTECTED SHORELAND JURISDICTION, AND 6,000 SF WITHIN THE NHDES 100'TIDAL BUFFER ZONE JURISDICTION. THE PROPOSED WORK WITHIN THE 100'TIDAL BUFFER ZONE INCLUDES TEMPORARY IMPACTS ASSOCIATED WITH UNDERGROUND UTILITY INSTALLATION AND PERMANENT IMPACTS ASSOCIATED WITH THE GRADING AND DRAINAGE IMPACTS FROM THE INSTALLATION OF THE CULVERTS, IMPACTS ASSOCIATED WITH THE DEMOLITION AND RECONSTRUCTION OF THE SINGLE-FAMILY HOME, AND IMPACTS ASSOCIATED WITH THE REMOVAL OF AN EXISTING PAVED AREA. A NHDES SHORELAND PERMIT IS PENDING FOR THE WORK WITHIN THE NHDES 250'PROTECTED SHORELAND. THERE IS NO PROPOSED WORK WITHIN THE SPECIAL FLOOD HAZARD AREA.
2. OWNER OF RECORD:
   TRUE NORTH DEVELOPMENT, LLC
   99 COLUMBUS AVE
   DOVER, NH 03820
3. THE PARCEL IS SHOWN ON CITY OF DOVER ASSESSOR'S MAP 7, LOT 14.
4. THE SUBJECT PARCEL CONTAINS 0.98 ACRES OF LAND. THERE IS NO LAND AREA CURRENTLY IN CURRENT USE.
5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5196, PAGE NO. 358.
6. REFERENCE PLANS:
   EXISTING CONDITIONS PLAN PREPARED FOR TRUE NORTH DEVELOPMENT, TAX MAP 7, LOT 14, 35 BOSTON HARBOR ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, PREPARED BY: MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND, DATE:12/11/24, SCALE: 1"=20'
7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE AND SHOWN ON THE PLAN.
8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS:
   ZONING DISTRICT: LOW DENSITY RESIDENTIAL (R-20) DISTRICT
   ZONING OVERLAY DISTRICTS: RIVER FRONT RESIDENTIAL AND CONSERVATION DISTRICT

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROVIDED
MINIMUM LOT SIZE	20,000 SF	42,846 SF
MAXIMUM LOT COVERAGE	30%	13.8%
MINIMUM LOT FRONTAGE	125 FT.	179.46 FT.
MINIMUM YARD SETBACKS/BUILD-TO-LINES:		
FRONT	20 FT.	55.23 FT.
SIDE	20 FT.	11.43 FT.
REAR	30 FT.	N/A
ABUT-A-STREET	20 FT.	N/A
RIVERFRONT RESIDENTIAL OVERLAY DISTRICT:		
MINIMUM LOT SIZE	3X(20,000 SF)	42,846 SF
WATER FRONTAGE	100 FT	189.9 FT.

   CONSERVATION DISTRICT:
   100' SETBACK FROM REFERENCE LINE OF LITTLE BAY.
   SEE SITE PLAN FOR PARKING CALCULATION TABLE.
9. THE PROJECT DOES NOT REQUIRE A WAIVER REQUEST FROM THE BOARD.
10. THE PROJECT DOES NOT REQUIRE VARIANCES OR SPECIAL EXCEPTIONS TO BE GRANTED BY THE ZONING BOARD. SEE "PROJECT VARIANCE / PERMIT SUMMARY" SECTION IF APPLICABLE.
11. THE PROJECT WILL REQUIRE A CONDITIONAL USE PERMIT.
12. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM REFERENCE PLAN 1.
13. AS-BUILT PLANS OF THE PROJECT SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER CITY ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
14. A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA), ZONE AE, AS SHOWN ON FLOOD INSURANCE RATE MAP 33017C0340E, EFFECTIVE DATE 9/30/2015. ELEVATION 6, THOSE AREAS DIRECTLY ADJACENT TO LITTLE BAY.
15. TOPOGRAPHIC SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON NOVEMBER 21, 2024
16. ELEVATIONS ARE BASED ON U.S.G.S. NAVD 1988 DATUM BASED ON REFERENCE PLAN 1.
17. THERE ARE NO WETLANDS ON THE SUBJECT PARCEL.
18. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
19. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
20. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
21. CONTRACTOR SHALL FOLLOW THE CONSTRUCTION SEQUENCING IDENTIFIED WITHIN THE PLANNING BOARD APPROVED PLAN SET. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.
22. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND BE PROVIDED FOR CONSTRUCTION SEQUENCING INCLUDING TEMPORARY MEASURES.
23. CONTRACTOR SHALL FOLLOW THE PERMANENT STABILIZATION MEASURES SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION AS NOTED WITHIN THE PLANNING BOARD APPROVED PLANS. ANY DEVIATION FROM THAT SEQUENCING SHALL BE APPROVED BY THE CITY ENGINEER.
24. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS, AS APPLICABLE.
25. ANY PERMANENT TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
26. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO COMMENCING EARTH DISTURBANCE.
27. A CITY ENGINEER APPROVED CONSTRUCTION SIGN SHALL BE INSTALLED PRIOR TO COMMENCING EARTH DISTURBANCE. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
28. A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR, AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
29. HOURS OF SITE WORK MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM. NO SITE WORK SHALL BE DONE ON SATURDAY, SUNDAY, OR FEDERAL HOLIDAYS.
30. BUILDING ADDRESSES, INCLUDING APT AND UNIT NUMBERS (IF APPLICABLE), SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
31. THE PROPOSED USE FOR THE SITE (STRUCTURE) IS SINGLE FAMILY.
32. THE PROJECT REQUIRES A NHDES SHORELAND PERMIT (PENDING)
33. THE PROJECT REQUIRES A NHDES WETLANDS PERMIT (PENDING).
34. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO THE DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR OR THEIR DESIGNEE.
35. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.

DOVER NOTES CONTINUED:

36. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF DOVER INSPECTION SERVICES.
37. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PROJECT (PTAP) PORTAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. HTTPS://EXTENSION.UNH.EDU/STORMWATER-CENTER/PTAP
38. THE OWNER OF RECORD SHALL RECORD, AT THE REGISTRY OF DEEDS, DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
39. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED, IN ACCORDANCE WITH ALL APPLICABLE CODES, TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
40. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
41. IF A BUSINESS ESTABLISHMENT OR MULTI-FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR REPAIRED STRUCTURE, A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
42. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
43. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM, AS REQUIRED, BY CHAPTER 81- 30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES, AS APPLICABLE.
44. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY THE CITY OF DOVER INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
45. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
46. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.
47. APPLICANT SHALL SUBMIT A LETTER CERTIFYING THE TIE IN LOCATIONS OR DISCHARGE POINTS FOR ALL SUMP PUMPS AND ROOF LEADERS FOR EXISTING STRUCTURES ON THE PROPERTY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
48. DESIGN ENGINEER OF RECORD SHALL PROVIDE SIGNED LETTER TO CITY ENGINEER CERTIFYING THAT THE STORMWATER MANAGEMENT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.
49. REFUSE REMOVAL SHALL BE BY CURB SIDE PICKUP ON BOSTON HARBOR ROAD.

DEMOLITION NOTES:

1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. STONES FROM REMOVED STONEWALLS SHALL REMAIN ON-SITE. STONES SHALL BE REPURPOSED ON-SITE AND SHALL NOT BE USED AS FILL.
9. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
10. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.

SITE NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
3. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
4. SEE DETAILS FOR SIGN LEGENDS.
5. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNERS REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE-DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.
7. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
9. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
10. SNOW STORAGE WILL BE ACCORDING TO THE OPERATION AND MAINTENANCE PLAN AND WITHIN AREAS AS INDICATED. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
11. ALL EXTERIOR DOORS ARE MANUAL AND OPENED FROM THE INTERIOR BY PANIC HARDWARE. ALL EXTERIOR DOORS SHALL COMPLY WITH ADA AND ALL LOCAL BUILDING CODE REQUIREMENTS.
12. OWNER ACKNOWLEDGES, AGREES, AND COVENANTS THAT THE CITY OF DOVER IS NOT RESPONSIBLE OR LIABLE FOR ANY DAMAGE ARISING OUT OF OR IN RELATION TO USE OF THIS PROPERTY'S DRIVEWAY FOR EMERGENCY ACCESS.

GRADING NOTES:

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING.
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA, SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
10. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF THE FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
11. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
12. CONTRACTOR SHALL NOTIFY THE CITY OF DOVER AND THE DESIGN ENGINEER 48 HOURS PRIOR TO THE INSTALLATION OF PERMANENT STORMWATER BMP'S TO PROVIDE THE CITY AND THE ENGINEER THE OPPORTUNITY TO WITNESS THE CONSTRUCTION AND MATERIALS.
13. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

    *ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

PROJECT VARIANCE / PERMIT SUMMARY:

1. FEDERAL AND STATE PERMITS:
   NHDES SHORELAND PERMIT — APPROVED 2025-00234 APRIL 29, 2025
   NHDES WETLANDS PERMIT — APPROVED 2025-00783 JUNE 27, 2025
2. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.

   TDR SITE PLAN: APPROVED TRAN-2023-0013 NOVEMBER 12, 2024
   CONDITIONAL USE PERMIT: - PENDING

LEGEND

S.F.	SQUARE FEET	Ⓓ	EXISTING DRAINAGE MANHOLE
Ac.	ACRE	○	EXISTING CATCHBASIN
±	MORE OR LESS	5'R	PAVEMENT RADIUS
(TYP.)	TYPICAL	SBC	SLOPED BITUMINOUS CURB
S.C.R.D.	STRAFFORD REGISTRY OF DEEDS	x 74.00	EXISTING SPOT GRADE
NHHD	NEW HAMPSHIRE HIGHWAY DEPT.		
TBR	TO BE REMOVED	---94---	EXISTING GRADE
ELEV.	ELEVATION	——OHW——	OVERHEAD UTILITIES
INV.	INVERT	——E——	EXISTING ELECTRIC
R.O.W.	RIGHT-OF-WAY	——W——	EXISTING WATER LINE
	EXISTING UTILITY POLE	——S——	EXISTING SEWER LINE
	EXISTING SIGN	——D——	EXISTING DRAINAGE LINE
	EXISTING WATER SHUT-OFF	——UGT——	EXISTING UNDERGROUND TELEPHONE
	EXISTING WATER VALVE		
	EXISTING GAS VALVE	74	PROPOSED FINISH GRADE
	EXISTING HYDRANT	x 74.00	PROPOSED SPOT GRADE
	EXISTING LIGHT/SIGNAL POLE		PAVEMENT WITH CURB
Ⓢ	EXISTING SEWER MANHOLE		SILT BARRIER

——PS——	PROPOSED SEWER
——PW——	PROPOSED WATER
——PUGU——	PROPOSED UNDERGROUND UTILITIES
——PG——	PROPOSED GAS

UTILITY NOTES

1. REVIEW DOVER NOTES FOR ALL APPLICABLE NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
5. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
6. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, DOUBLE CEMENT LINED DUCTILE IRON PIPE OR TYPE "K" COPPER, OR CITY APPROVED MATERIAL.
7. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.
8. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED AND CONFORM TO THE REQUIREMENTS OF THE CITY OF DOVER SEWER DEPARTMENT STANDARDS.
9. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE CITY OF DOVER COMMUNITY SERVICES DEPARTMENT STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
10. ALL ELECTRICAL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
11. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE UTILITY COMPANIES.
12. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
13. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
15. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES. COORDINATE WITH GAS COMPANY.
16. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
17. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
18. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
19. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF DOVER.
20. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF DOVER.
21. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
22. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
23. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PREPARED BY THE PROJECT ELECTRICAL ENGINEER.
24. THE PROPOSED STRUCTURE SHALL COMPLY WITH CHAPTER 81, ARTICLE IV, SECTION 81-27 AND THE STATE BUILDING CODES OF THE CODE OF THE CITY OF DOVER.
25. FIRE SUPPRESSION PLANS SHALL BE PROVIDED TO THE FIRE/INSPECTION DEPARTMENT PRIOR TO INSTALLATION.
26. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
27. SEWAGE LOADING (PER NHDES ENV-WQ 1008.03)
    PROPOSED 2 SINGLE FAMILY x 3 BEDROOMS x 150 GPD/BEDROOM = 900 GPD.
    EXISTING SINGLE FAMILY X 3 BEDROOMS X 150 GPD/BEDROOM = 450 GPD
    TOTAL = 1,350 GPD

UTILITY CONTACTS

WATER & SEWER: - CITY OF DOVER COMMUNITY SERVICES DEPARTMENT
PUBLIC WORKS & UTILITIES
CONTACT: KEN MAVROGEORGE, PE
271 MAST ROAD
DOVER, NH 03820
TEL: (603)-516-6450
EMAIL: K.MAVROGEORGE@DOVER.NH.GOV

ELECTRIC: - EVERSOURCE
CONTACT: TREVOR EMMONS
4 OLD DOVER ROAD
ROCHESTER, NH 03867
TEL: (603)-332-7515
EMAIL: TREVOR.EMMONS@EVERSOURCE.COM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

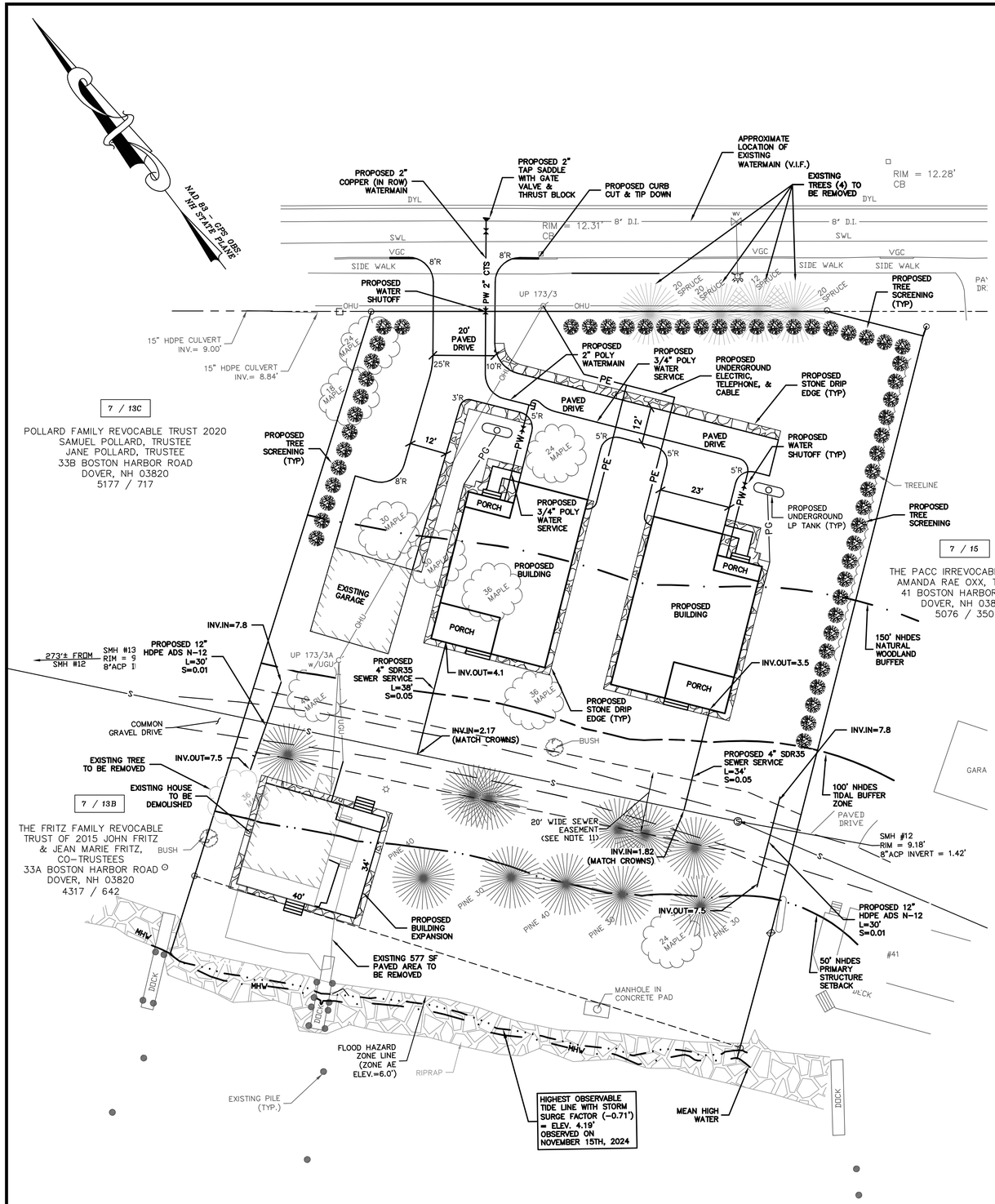
NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6-30-25
1	PER SHORELAND COMMENTS	SJH	3-31-25

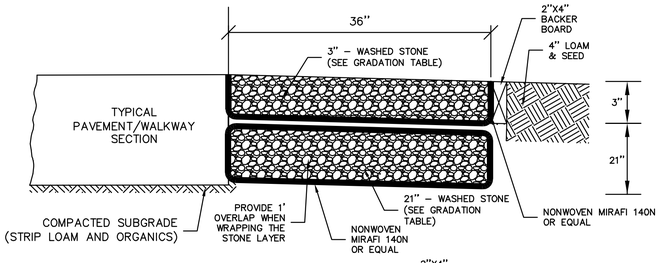
DATE: 1-30-25
SCALE: N/A
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

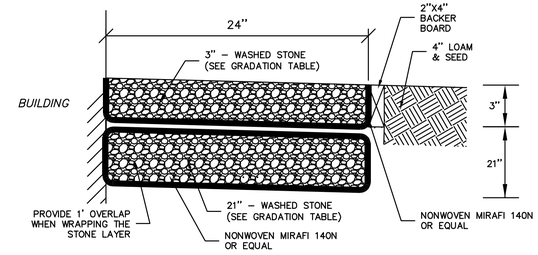
NOTE SHEET

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14







INSTALLATION NOTES:

1. THE FILTER FABRIC SHALL BE ENTIRELY WRAPPED AROUND THE 21" LAYER OF STONE.
2. A SECOND FILTER FABRIC SHALL BE LAID ON TOP AND ATTACHED TO THE BACKER BOARD TO CREATE A "U". THIS ALLOWS FOR EASY REMOVAL OF TOP 3" OF STONE AND 'U" SHAPED FABRIC, FOR MAINTENANCE.

MAINTENANCE NOTES:

IF PONDING OR SAND/DEBRIS BUILD UP IS NOTICED FOLLOW HE BELOW STEPS

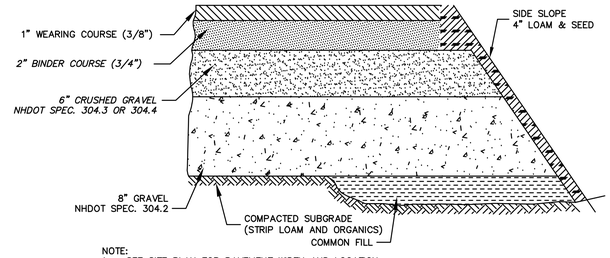
1. REMOVE TOP 3" OF STONE AND THE "U" SHAPED FILTER FABRIC.
2. CLEAN THE TOP OF THE FILTER FABRIC THAT IS WRAPPED AROUND 21" LAYER OF STONE.
3. INSPECT ANY RIPS OR TEARS IN FABRIC, IF ANY, LAY ADDITIONAL FILTER FABRIC OVER THE RIPS OR THE TEARS.
4. CLEAN AND INSPECT THE "U" SHAPED FILTER FABRIC THAT WAS REMOVED. IF THERE IS NO TEARS OR RIPS THE FILTER FABRIC MAY BE REUSED.
5. INSPECT AND REMOVE ANY SAND OR DEBRIS FROM THE TOP 3" LAYER OF STONE.
6. RE-INSTALL FILTER FABRIC AND 3" STONE LAYER

WASHED STONE GRADATION TABLE

SIEVE SIZE	*% FINER BY WEIGHT*
1"	*100*
3/4"	*90 – 100*
3/8"	*20 – 55*
# 4	*0*

STONE DRIP EDGE TYPICAL SECTION

NOT TO SCALE

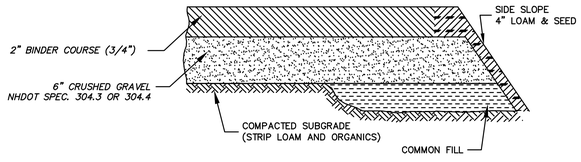


NOTE:

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

TYPICAL PAVEMENT SECTION

NOT TO SCALE



TYPICAL WALKWAY SECTION

NOT TO SCALE

LEGEND:

S.F.	SQUARE FEET
PEOP	PROPOSED EDGE OF PAVEMENT
EOP	EDGE OF PAVEMENT
F.F.	FINISH FLOOR ELEVATION
TYP	TYPICAL
V.I.F.	VERIFIED IN FIELD

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE
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1	PER SHORELAND COMMENTS	SJH	3-31-25

DATE: 1-30-25
SCALE: 1"=20'
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DESIGN BY: JRG
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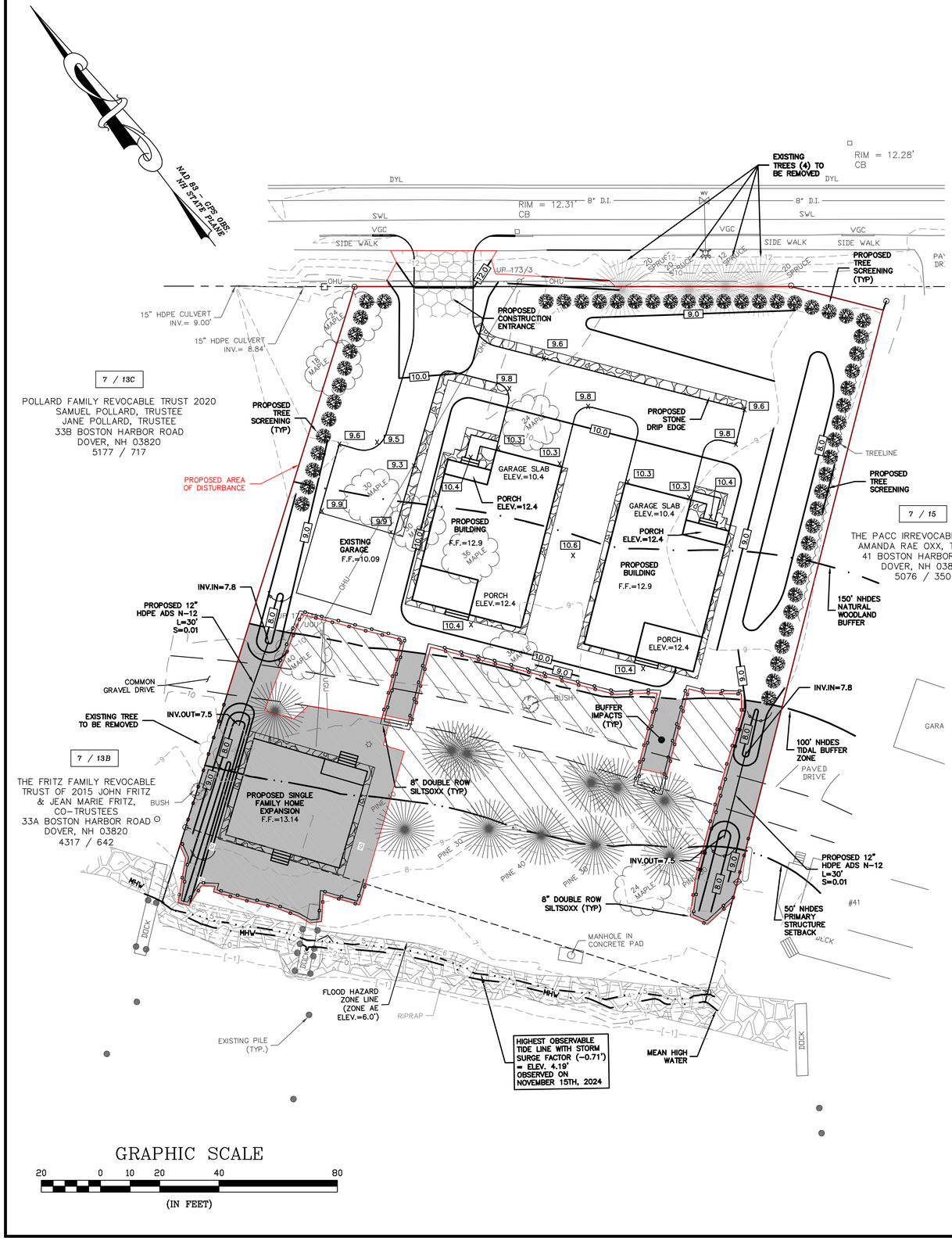
NHDES & CONDITIONAL USE PERMIT PLAN

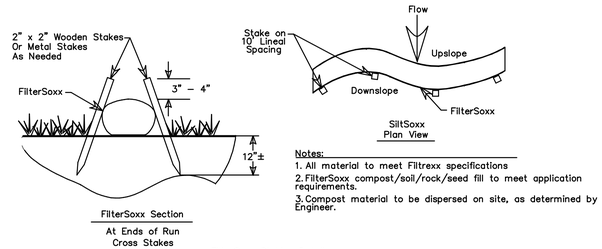
SITE & UTILITY PLAN

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

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

SILTSOXX DETAILS

NOT TO SCALE

SHORELAND CALCULATIONS

	PRE	POST
PRIMARY STRUCTURES (HOUSE W/ ATTACHED DECKS)	1,804 S.F.	6,251 S.F.
PAVED DRIVEWAY, GRAVELED DRIVEWAY, WALKWAY, CONCRETE	4,942 S.F.	5,881 S.F.
TOTAL	6,746 S.F.	12,132 S.F.

TOTAL SHORELAND AREA 250'	= 42,357 S.F.
% PRE-CONSTRUCTION IMPERVIOUS 250'	= 6,746 S.F. (15.9%)
% POST-CONSTRUCTION IMPERVIOUS 250'	= 12,132 S.F. (28.6%)
TOTAL AREA 50' TO 150'	= 18,302 S.F.
AREA BETWEEN 50' TO 150' NATURAL WOODLAND BUFFER	= 12,286 S.F. (67.1%)
AREA BETWEEN 50' TO 150' NATURAL WOODLAND BUFFER TO REMAIN	= 4,999 S.F. (27.3%)
TOTAL AREA 0' TO 50'	= 9,377 S.F.
AREA BETWEEN 0' TO 50' PRE-UNALTERED	= 0 S.F. (0%)
AREA BETWEEN 0' TO 50' POST-UNALTERED	= 0 S.F. (0%)
TOTAL AREA 0' TO 100' (TIDAL BUFFER ZONE)	= 18,600 S.F.
AREA BETWEEN 0' TO 100' PRE-IMPERVIOUS	= 3,752 S.F. (20.2%)
AREA BETWEEN 0' TO 100' POST-IMPERVIOUS	= 3,413 S.F. (18.4%)
TOTAL PROPOSED DISTURBANCE	= 29,963 S.F.
TOTAL DISTURBANCE WITHIN THE 250' PROTECTED SHORELAND	= 23,963 S.F.
TEMPORARY UTILITY DISTURBANCE WITHIN THE 100' TIDAL BUFFER ZONE	= 806 S.F.
PERMANENT DISTURBANCE WITHIN THE 100' TIDAL BUFFER ZONE	= 5,194 SF

SELECTED SEA LEVEL RISE SCENARIO (SLR):

1. THE SELECTED SEA LEVEL RISE WAS DETERMINED UTILIZING THE PORTLAND TIDE STATION DATA OF 1.9 MM/YR (0.65 FT/100 YEARS). SEE CHART BELOW FOR SELECTED SLR SCENARIO AND APPLICABLE SERVICE LIFE.

STRUCTURE:	SERVICE LIFE	SLR SCENARIO	SLR ELEV.	STRUCTURE ELEV.
PROPOSED CULVERTS	25 YEARS	0.15' + ELEV. 6.0'	6.15'	INV.OUT=7.5'
PROPOSED BUILDINGS	50 YEARS	0.30' + ELEV. 6.0' + 1' FREEBOARD	7.3'	F.F.=12.9'
PROPOSED BUILDING EXPANSION	50 YEARS	0.30' + ELEV. 6.0' + 1' FREEBOARD'	7.3'	F.F.=13.14'

TIDE TABLE:

TIDE	ELEVATION
FEMA AE ELEV.	6.0'
HOTL	4.19'
MEAN HIGH WATER	2.95'
MEAN LOW WATER	-3.43
MEAN LOW LOW WATER	-3.68'

LEGEND:

S.F.	SQUARE FEET
PEOP	PROPOSED EDGE OF PAVEMENT
EOP	EDGE OF PAVEMENT
F.F.	FINISH FLOOR ELEVATION
TYP	TYPICAL
8	EXISTING 2' CONTOUR
94	PROPOSED GRADE
855.25 x	PROPOSED SPOT SHOTS
	EROSION CONTROL SOCK
	100' TIDAL BUFFER & 100' CONSERVATION DISTRICT IMPACT
	NATURAL WOODLAND BUFFER TO REMAIN

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DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

NHDES & CONDITIONAL USE PERMIT PLAN

GRADING, DRAINAGE, & EROSION CONTROL PLAN

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH
DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

DESCRIPTION
THE PROPOSED SITE DESIGN INCLUDES THE CONSTRUCTION OF TWO (2) NEW SINGLE-FAMILY HOMES, THE RECONSTRUCTION AND EXPANSION OF THE EXISTING HOME, GRADING AND DRAINAGE IMPROVEMENTS, UTILITY IMPROVEMENTS, ALONG WITH THE RECONSTRUCTION OF THE PAVED SITE ACCESS. THE TOTAL PROPOSED PROJECT DISTURBANCE IS 29,963 SF, WITH 23,963 SF WITHIN THE NHDES 250' PROTECTED SHORELAND JURISDICTION, AND 6,000 SF WITHIN THE NHDES 100' TIDAL BUFFER ZONE JURISDICTION AND CITY OF DOVER CONSERVATION DISTRICT. .

PROJECT NAME AND LOCATION
3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NEW HAMPSHIRE 03820
LATITUDE N43° 07' 35"
LONGITUDE W70° 50' 24"

DISTURBED AREA
±26,719 S.F.

NOTES:
1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

SEQUENCE OF MAJOR ACTIVITIES
1. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
2. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
3. SELECTIVE DEMOLITION.
4. REGRADE SITE TO SUBGRADE.
5. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECCESSARY UNTIL AREAS ARE STABILIZED.
6. SWALES AND PONDS (AS APPLICABLE) SHALL BE CONSTRUCTED EARLY ON IN THE CONSTRUCTION SEQUENCE AND BEFORE ROUGH GRADING OF THE SITE AND ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
7. INSTALL DRAINAGE STRUCTURES AND CONTROLS.
8. INSTALL FOUNDATION FOOTINGS AND WALLS.
9. INSTALL UTILITIES.
10. PLACE GRAVELS AND FINE GRADE.
11. STABILIZE ROADWAYS AND PARKING AREAS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
14. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

DEFINITIONS
AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOMNG HAS OCCURRED.
1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE, AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. SILT BARRIER
1. INSTALLATION
   a. USE SILT BARRIER AS PERIMETER CONTROLS, PARTICULARLY AT THE LOWER OR DOWN SLOPE EDGE OF A DISTURBED AREA.
   b. LEAVE SPACE FOR MAINTENANCE BETWEEN TOE AND SLOPE OF SILT BARRIER.
   c. TRENCH IN THE SILT BARRIER ON THE UPHILL SIDE (6 INCHES DEEP BY 6 INCHES WIDE).
   d. INSTALL STAKES ON THE DOWNHILL SIDE OF THE SILT BARRIER.
   e. CURVE THE END OF THE SILT BARRIER UP-GRADIENT TO HELP IT CONTAIN RUNOFF.
2. SEQUENCE OF INSTALLATION
   a. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
3. MAINTENANCE
   a. SILT BARRIERS SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
   b. SILT BARRIERS HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT BARRIERS SHOULD BE REPLACED PERIODICALLY TO MAINTAIN EFFECTIVENESS.
   c. REMOVE SEDIMENT WHEN IT REACHES ONE-THIRD (1/3) THE HEIGHT OF THE SILT BARRIER.
   d. REPLACE THE SILT BARRIERS WHERE THEY ARE TORN, WORN, OR OTHERWISED DAMAGED AND MONITOR PERFORMANCE TO ENSURE EFFECTIVE PERFORMANCE.
   e. RETRENCH OR REPLACE ANY SILT BARRIER THAT IS NOT PROPERLY ANCHORED TO THE GROUND.
   f. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
   g. SILT BARRIERS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.

B. MULCHING
1. TIMING
   a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
   c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THIS SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
   a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FEET.
   b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWNG SEASON) IT SHALL BE AT A RATE OF 150-200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
   a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
   b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECCESSARY.
   c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
   d. EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING
1. SEEDBED PREPARATION
   a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
   b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
      I) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
      II) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
   a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
   c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
   d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
   a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING
1. BEDDING - STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERRING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
   a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
   b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITORGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
   c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
      LOW PHOSPHATE (N-P205-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
   RATE:

TYPE	LBS. PER ACRE	LBS. PER 1,000 S.F.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
   a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
   b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
   c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
   a. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
   b. SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
   c. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABALIZATION OF EXPOSED SOILS.
   d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
   e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION
1. SPECIFICATIONS
   a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
   b. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
   a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND-DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
   b. PROTECT ALL INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
   c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMPS.
   d. DESIGN YOUR INLET PROTECTION TO HANDLE THE VOLUME OF WATER FROM THE AREA BEING DRAINED. ENSURE THAT THE DESIGN IS SIZED APPROPRIATELY.
3. MAINTENANCE
   a. INSPECT INLETS BARRIERS FREQUENTLY, BEFORE AND AFTER EACH RAINFALL EVENT AND REPAIR WHEN NECESSARY.
   b. SEDIMENT SHOULD BE REMOVED AND THE STORM DRAIN SEDIMENT BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE BARRIER.
   c. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   d. SWEEP STREETS, SIDEWALKS, AND OTHER PAVED AREAS REGULARLY.
   e. ALL CATCH BASINS AND STORM DRAIN INLETS MUST BE CLEANED AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED

TIMING OF CONTROLS/MEASURES
AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

WASTE DISPOSAL
a. WASTE MATERIALS
   ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
   ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
   ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENACE OF STORMWATER MANAGEMENT FACILITIES
THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PROPERTY OWNER IS RESPONSIBLE AFTER CONSTRUCTION IS COMPLETE.

CATCH BASINS & STORMWATER TREATMENT STRUCTURES
1. CATCH BASINS & STORMWATER TREATMENT STRUCTURES SHOULD BE INSPECTED ON A MONTHLY BASIS AND/OR AFTER A MAJOR RAINFALL EVENT TO ASSURE THAT DEBRIS OR SEDIMENTS DO NOT REDUCE THE EFFECTIVENESS OF THE SYSTEM.

SPILL PREVENTION
A. MATERIAL MANAGEMENT PRACTICES
THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING
1. THE CONSTRUCTION PROJECT:
   a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
   b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
   d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
   e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
   f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
   a. THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
   b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
   c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
   d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
1. PETROLEUM PRODUCTS:
   a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENACE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. FERTILIZERS:
   a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
3. PAINTS:
   a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
4. CONCRETE TRUCKS:
   a. CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.

C. SPILL CONTROL PRACTICES
IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   c. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   d. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OF LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
   f. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
   g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

THE PROJECT PROPONENT IS REQUIRED TO MANAGE CONSTRUCTION TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO CONTROLLING INVASIVE SPECIES AND CONTROLLING FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002.

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

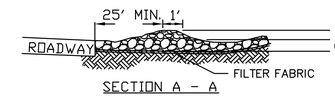
THE RULE, AGR 3800, STATES: NO PERSON SHALL COLLECT, TRANSPORT, IMPORT, EXPORT, MOVE, BUY SELL, DISTRIBUTE, PROPAGATE OR TRANSPLANT ANY LIVING AND VIABLE PORTION OF ANY PLANT SPECIES, WHICH INCLUDED ALL OF THEIR CULTIVARS AND VARIETIES, LISTED IN TABLE 3800.1, NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST'. A COMPLETE COPY OF THE RULES CAN BE ACCESSED ON THE INTERNET AT HTTP://AGRICULTURE.NH.GOV/TOPICS/PLANTS_INSECTS.HTM.

ENV-A 1002 FUGITIVE DUST: PRECAUTIONS TO PREVENT, ABATE, AND CONTROL FUGITIVE DUST.

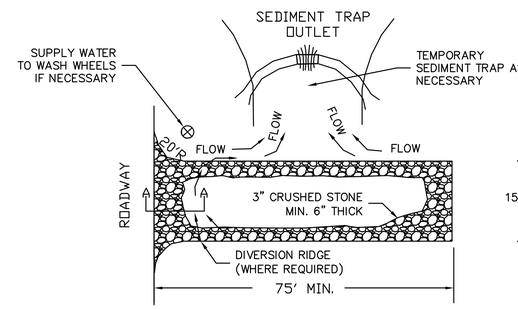
a. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE EMITS FUGITIVE DUST, OTHER THAT THOSE LISTED IN ENV-A 1002.02 (b), SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST.
b. PRECAUTIONS REQUIRED BY (a) ABOVE, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   I) THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
   II) THE APPLICATION OF ASPHALT, WATER, OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIAL STOCKPILES;
   III) THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
   IV) THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS; AND
   V) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

WINTER CONSTRUCTION NOTES
1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT.
2. ALL DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

DIVERSION RIDGE REQUIRED
WHERE GRADE EXCEEDS 2%



SECTION A - A



PLAN

A. GENERAL NOTES:

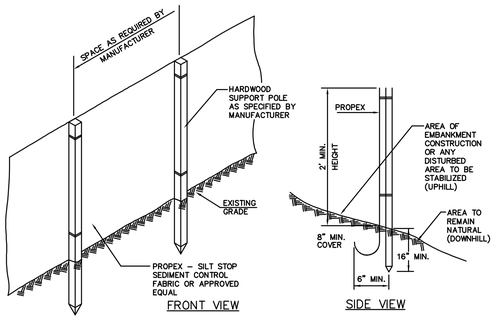
1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORM WATER RUNOFF FROM ROADS
2. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE IS REQUIRED TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
3. LOCATE THE CONSTRUCTION ENTRANCES AND EXITS, A MINIMUM OF 100 FEET FROM INTERSECTIONS, TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES THAT HAVE STEEP GRADES AND ENTRANCES AT CURVES IN ROADS.
4. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.

B. SPECIFICATIONS (TEMPORARY CONSTRUCTION ENTRANCE/EXITS SHOULD MEET THE FOLLOWING REQUIREMENTS).

5. STONE SIZE MINIMUM: USE SHOULD BE 3" CRUSHED STONE.
6. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET.
7. THE MINIMUM WIDTH OF THE PAD SHOULD BE 15 FEET OR THE WIDTH OF THE ENTRANCE, WHICHEVER IS GREATER
8. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
9. THE PAD SHOULD BE AT LEAST 6" THICK.
10. A GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
11. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
12. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

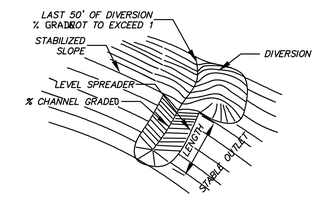
C. MAINTENANCE REQUIREMENTS (THE ENTRANCE/EXIT SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT).

13. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.
14. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS



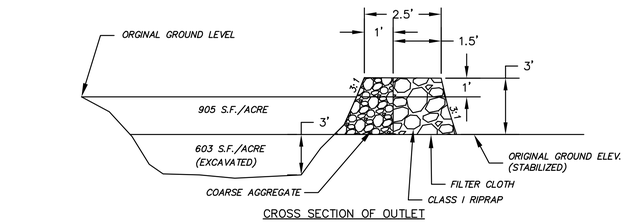
SILT FENCE DETAIL

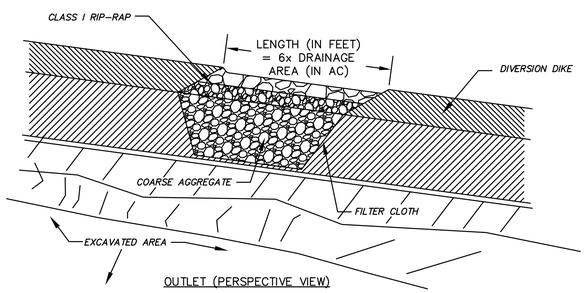
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LEVEL SPREADER DETAIL

NOT TO SCALE





NOTES:
1. COARSE AGGREGATE SHALL MEET NHDOT 304.5 SPECIFICATIONS AND SHALL NOT CONTAIN MORE THAN 5% FINES PASSING THE #200 SIEVE.
2. FILTER CLOTH SHALL BE MIRAFI 700X OR APPROVED EQUAL.
3. CLASS I RIPRAP SHALL MEET NHDOT 583 SS SPECIFICATIONS.
4. THE MAXIMUM CONTRIBUTING AREA TO THE TRAP SHALL BE LESS THAN 5 AC.
5. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED.
6. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

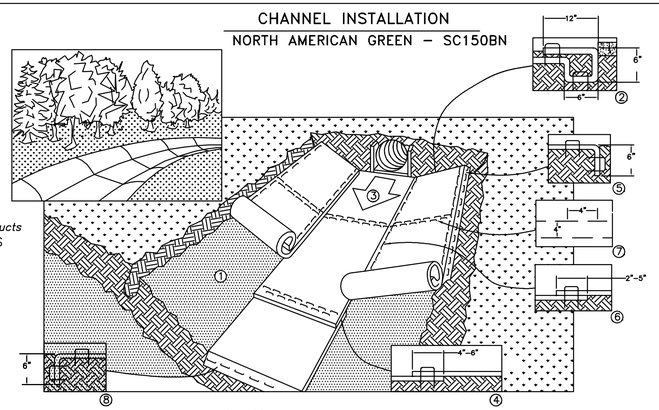
TEMPORARY SEDIMENT TRAP

NOT TO SCALE

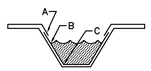
CHANNEL INSTALLATION

NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

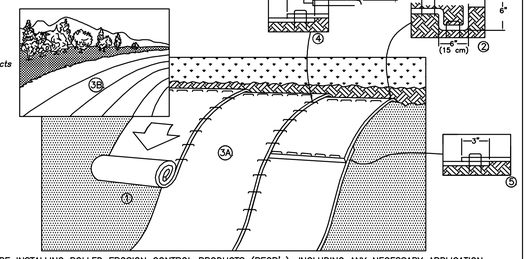
NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

SLOPE INSTALLATION

NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™ , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

NOTE: THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6-30-25
1	PER SHORELAND COMMENTS	SJH	3-31-25

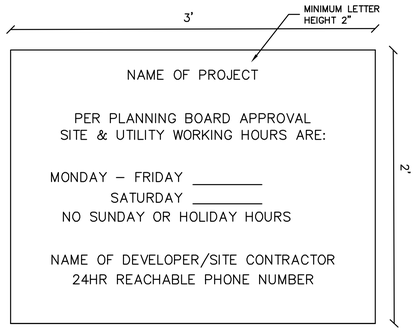
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DRAWN BY: JRG
SCALE: N/A
DATE: 1-30-25
FILE: SITE

EROSION CONTROL NOTES

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

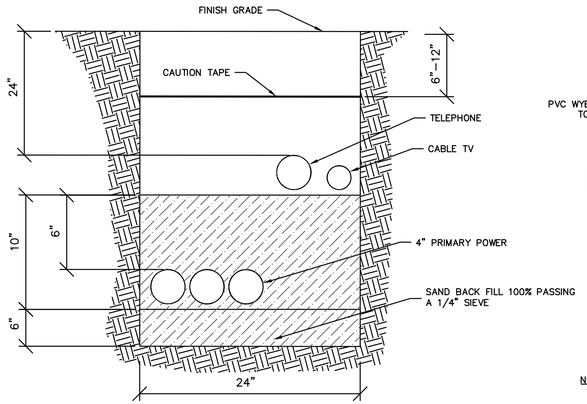
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NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

CITY OF DOVER D–2
CONSTRUCTION SIGN

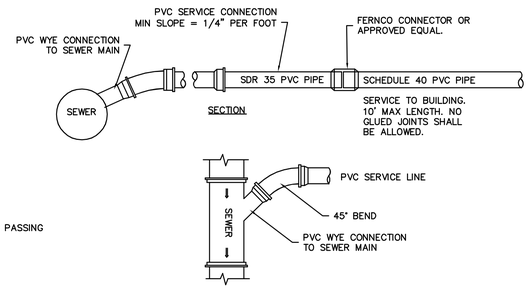
NOT TO SCALE



1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

UTILITY TRENCH

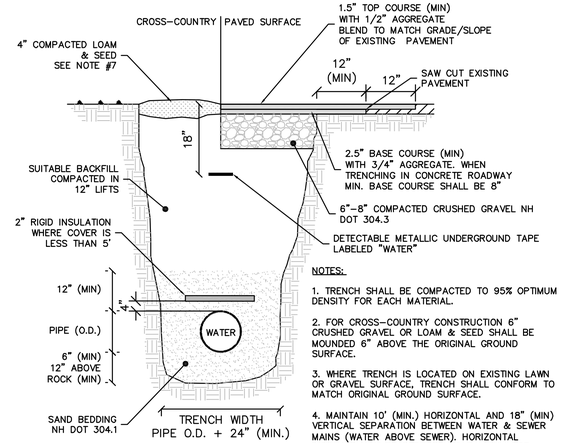
NOT TO SCALE



NOTES:
1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D–3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

CITY OF DOVER D–17
SEWER SERVICE DETAIL

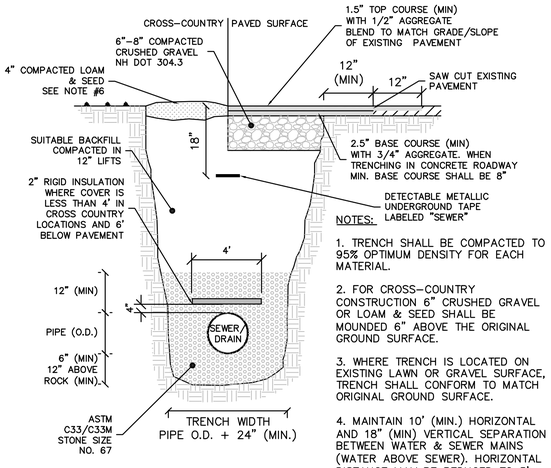
NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS–COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER D–4
WATER TRENCH DETAIL

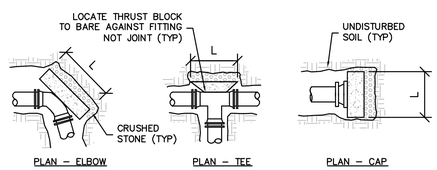
NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS–COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER D–3
SEWER TRENCH DETAIL

NOT TO SCALE



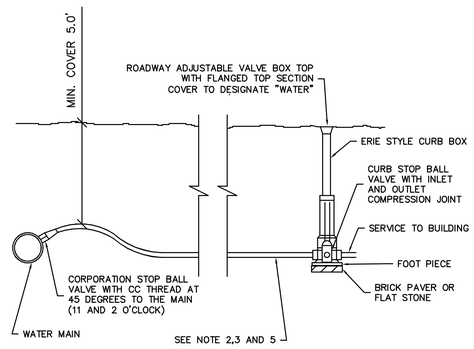
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22–1/2 Degree Bends	*	*	*	*	4.46	7.92
11–1/4 Degree Bends	*	*	*	*	*	*
*SEE NOTE 2	System Pressure: 125 psi Safety Factor: 1.5 Soil Bearing Capacity: 2,000 psf					

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE–CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

CITY OF DOVER D–15
THRUST BLOCK DETAIL

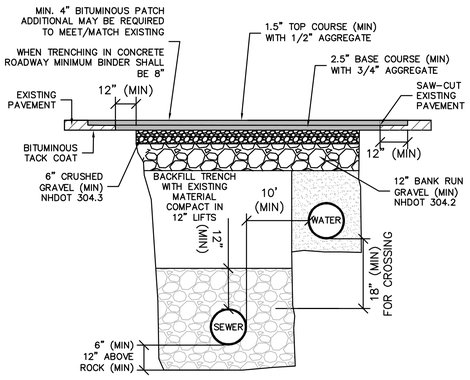
NOT TO SCALE



NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.
4. CAM–LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE
5. 3/4"– COPPER, CTS
   1"– COPPER, CTS
   2"– CTS, HDPE, IPS

CITY OF DOVER D–13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE
2	PER STATE PERMITS	SJH	6–30–25
1	PER SHORELAND COMMENTS	SJH	3–31–25

DATE: 1–30–25
SCALE: N/A
DRAWN BY: JRG
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 24097
FILE: SITE

DETAIL SHEET

3 UNIT TDR DEVELOPMENT
35 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 14

TRUE NORTH
DEVELOPMENT, LLC
99 COLUMBUS AVE
DOVER, NH 03820

LAND SURVEYORS

CIVIL ENGINEERS

RESERVED REGISTRY OF DEEDS

LEGEND

- EXISTING
- MONUMENT
- BOUND
- NO MONUMENT FOUND OR SET
- UTILITY POLE
- WETLAND
- N 89°56'30" E 425.61' — PROPERTY LINE
- STONEWALL
- EP — EDGE OF PAVEMENT
- GRAVEL
- EDGE OF WETLAND
- OVERHEAD WIRES
- // — FENCE

MAN-MADE, ALTERED AND/OR NATURAL JURISDICTIONAL FRESHWATER WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, IN APRIL 2025 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - 1987 WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900 AND CHAPTER 170, ARTICLE VIII, §170-28 OF THE DOVER, NH ZONING.

PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, JUNE 2020 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, 2018. THE INDICATOR STATUS OF DOMINANT VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2020 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.

STATE OF NEW HAMPSHIRE — MARC E. JACOBS — No. 090 — CERTIFIED WETLAND SCIENTIST

MAGNETIC PER PLAN REF. 1

NOTES:

1. THE PURPOSE OF THIS SKETCH IS TO DEPICT THE FOUND MONUMENTATION OF TAX MAP 18, LOT 43.
2. TOTAL PARCEL AREA: MAP 18, LOT 43 0.31 ACRES.
3. PARCEL IS ZONED: RURAL RESIDENTIAL (R-40).
4. MINIMUM LOT REQUIREMENTS: LOT SIZE = 40,000 SQ FT, FRONTAGE = 150 FT.
5. BUILDING SETBACKS:
   PRINCIPAL BUILDING: FRONT YARD = 40 FT, SIDE YARD = 25 FT, REAR YARD = 30 FT.
   OUTBUILDING / ACCESSORY USE: FRONT YARD = 40 FT, SIDE YARD = 10 FT, REAR YARD = 10 FT.

   SUBDIVISION SPECIFIC SETBACKS: (PER PLAN REF. 1)
   35' FROM PAVEMENT
   40' BETWEEN BUILDINGS
   50' OVERALL BOUNDARY BUFFER
   (ULTIMATE CERTIFICATION AND VERIFICATION OF THE ZONE DESIGNATION AND APPLICABLE LOCATION OF BUILDING SETBACK REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE ZONING OFFICER IN THE SUBJECT MUNICIPALITY.)
6. THE SURVEYED PARCEL IS SERVICED BY THE MUNICIPAL WATER AND SEWER SYSTEM.
7. THE SURVEYED PARCEL IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0302E.
8. HORIZONTAL DATUM: NH STATE PLANE, NAD83(2011).
9. THE WETLAND LIMITS SHOWN ON THIS PLAN WERE DELINEATED BY MARC JACOBS, CWS, CSS ON APRIL 4, 2025, AND LOCATED BY NPA.
10. ABUTTING PROPERTY INFORMATION WAS TAKEN FROM DOVER TAX RECORDS. ABUTTING PROPERTY LINES WERE TAKEN FROM DOVER TAX MAPS AND ARE FOR INFORMATIONAL PURPOSES ONLY.
11. CORNERSTONE DRIVE IS A PRIVATE ROAD, PER NH DOT.

REFERENCE PLANS:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TRUST."
   DATED: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC.
   RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

EXISTING HOUSE # 32

EXISTING HOUSE # 34

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

TAX MAP 18, LOT 39
ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 3527, PG. 549

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

S 42°07'03" E 38.92'

N 68°18'51" E 109.66'

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4237, PG. 748

SHED

"J & B" RBCF (-14")

RBF (-1")

WETLAND A

WETLAND B 50' SETBACK

TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E 56.57'

N 68°18'51" E 43.00'

"J & B" RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

PAVED DRIVEWAY

UTILITY BOXES

N 25°32'14" W 58.15'

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK. 2028, PG. 726

CORNERSTONE DRIVE

"GG1" RBCF (-2")

TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

S 62°12'11" W 82.75'

WETLAND A 50' SETBACK

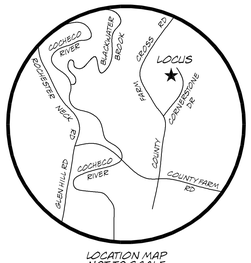
WETLAND B

78.54' N 79°15'34" W

"GG1" RBCF (-1")

EXISTING HOUSE # 26

TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 5044, PG. 967



LOCATION MAP
NOT TO SCALE

STATE OF NEW HAMPSHIRE — No. 1129 — GLENN D. GRISWOLD — LICENSED LAND SURVEYOR — SIGNATURE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

EXISTING SITE CONDITIONS
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MAY 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO. C-3696
DWG. NO. 25031

SHEET 1 of 2

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

NORWAY PLAINS ASSOCIATES, INC.

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

RESERVED REGISTRY OF DEEDS

NOTES:

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6. THE SURVEYED PARCEL IS SERVICED BY THE MUNICIPAL WATER AND SEWER SYSTEM.
7. THE SURVEYED PARCEL IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0302E.
8. HORIZONTAL DATUM: NH STATE PLANE, NAD83(2011).
9. FIELD SURVEY PERFORMED ON THE FOLLOWING DATE: MONTH DAY, YEAR – MONTH DAY, YEAR
10. ABUTTING PROPERTY INFORMATION WAS TAKEN FROM DOVER TAX RECORDS. ABUTTING PROPERTY LINES WERE TAKEN FROM DOVER TAX MAPS AND ARE FOR INFORMATIONAL PURPOSES ONLY.
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REFERENCE PLANS:

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   DATED: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC.
   RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

NORTH
MAGNETIC – SEE NOTE XX

EXISTING HOUSE # 34

EXISTING HOUSE # 32

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK- 4237, PG- 748

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK- 4320, PG- 346

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

TAX MAP 18, LOT 39
ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK- 3527, PG- 549

SHED

"J & B" RBCF (-14")

N 68°18'51" E 109.66'

S 42°07'03" E 38.91'

RBF (-1")

N 68°18'51" E 43.00'

APPROXIMATE WETLANDS

TAX MAP 18, LOT 43
13,550 SQ- FT-
0.31 ACRES

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E 56.57'

"J & B" RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

N 25°32'14" W 58.15'

PAVED DRIVEWAY

UTILITY BOXES

CORNERSTONE DRIVE

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK- 2028, PG- 726

"GG1" RBCF (-2")

S 62°12'11" W 82.75'

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JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK- 4315, PG- 880

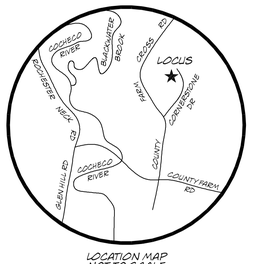
APPROXIMATE WETLANDS

N 79°15'34" W 78.54'

"GG1" RBCF (-1")

EXISTING HOUSE # 26

TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK- 5044, PG- 967



LOCATION MAP
NOT TO SCALE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

PRELIMINARY PLAN
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE

FOR:
ERIC LATOUR

1" = 10' MARCH 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO.
DWG. NO. 25031

PRINTED ON: MONTH DAY, YEAR

RESERVED REGISTRY OF DEEDS

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   RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

NPA
MAGNETIC – SEE NOTE XX

EXISTING HOUSE # 34

EXISTING HOUSE # 32

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

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ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 3527, PG. 549

S 42°07'03" E
38.91'

RBF
(-1")

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4237, PG. 748

SHED

"J & B"
RBCF
(-14")

N 68°18'51" E
109.66'

N 68°18'51" E
43.00'

10' ACCESSORY BLDG SETBACK

APPROXIMATE WETLANDS

25' PRIMARY BLDG SETBACK

40' BLDG SETBACK

TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E
56.57'

"J & B"
RBCF

GENERATOR

SHED

EXISTING HOUSE # 28

DECK

PAVED DRIVEWAY

50' WETLAND BUFFER

UTILITY BOXES

N 25°32'14" W
58.15'

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK. 2028, PG. 726

10' ACCESSORY BLDG SETBACK

APPROXIMATE WETLANDS

78.54'
N 79°15'34" W

S 62°12'11" W
82.75'

"GG1"
RBCF
(-2")

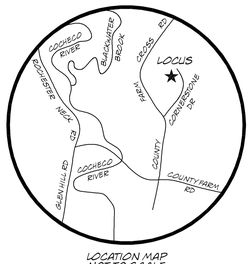
TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

"GG1"
RBCF
(-1")

TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 5044, PG. 967

EXISTING HOUSE # 26

CORNERSTONE DRIVE



LOCATION MAP
NOT TO SCALE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

PRELIMINARY PLAN
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MARCH 2025

GRAPHIC SCALE
10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO.
DWG. NO. 25031

PRINTED ON: MONTH DAY, YEAR

LAND SURVEYORS

CIVIL ENGINEERS

RESERVED REGISTRY OF DEEDS

LEGEND

- EXISTING MONUMENT
- BOUND
- NO MONUMENT FOUND OR SET
- UTILITY POLE
- WETLAND
- N 89°56'30" E 425.61' — PROPERTY LINE
- STONEWALL
- EP — EDGE OF PAVEMENT
- GRAVEL
- EDGE OF WETLAND
- OVERHEAD WIRES
- // — FENCE

MAN-MADE, ALTERED AND/OR NATURAL JURISDICTIONAL FRESHWATER WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, IN APRIL 2025 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - 1987 WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900 AND CHAPTER 170, ARTICLE VIII, §170-28 OF THE DOVER, NH ZONING.

PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, JUNE 2020 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, 2018. THE INDICATOR STATUS OF DOMINANT VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2020 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.

STATE OF NEW HAMPSHIRE — MARC E. JACOBS — No. 090 — CERTIFIED WETLAND SCIENTIST

MAGNETIC PER PLAN REF. 1

EXISTING HOUSE # 32

EXISTING HOUSE # 34

TAX MAP 18, LOT 42
SCOTT PETTINGILL
32 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4320, PG. 346

TAX MAP 18, LOT 41
LIAM O'BRIEN
34 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4237, PG. 748

TAX MAP 18, LOT 39
ERIC M. & DEANNA B. KINSMAN
38 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 3527, PG. 549

PAVED DRIVEWAY

TRANSFORMER PAD

UTILITY BOXES

SHED

"J & B" RBCF (-14")

N 68°18'51" E 109.66'

S 42°01'03" E 38.92'

RBF (-1")

N 68°18'51" E 43.00'

"J & B" RBCF

GENERATOR

SHED

WETLAND A

A10 @ 4" PVC

17.5'

WETLAND B 50' SETBACK

TAX MAP 18, LOT 43
13,550 SQ. FT.
0.31 ACRES

EXISTING HOUSE # 28

DECK

PROPOSED 24' X 24' GARAGE

12.2'

8.0'

8.0'

24.0'

24.0'

20.0'

N 25°32'14" W 58.15'

PAVED DRIVEWAY

UTILITY BOXES

"GG1" RBCF (-2")

TAX MAP 18, LOT 0
CORNERSTONE CROSSING HOA
P.O. BOX 1872
DOVER, NH 03821
BK. 2028, PG. 726

PROPOSED SILT FENCE

S/F

WETLAND B

WETLAND A 50' SETBACK

78.54'

N 79°15'34" W

82.75'

S 62°12'11" W

TAX MAP 18, LOT 44
JASON LAPOINT
26 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 4315, PG. 880

"GG1" RBCF (-1")

EXISTING HOUSE # 26

TAX MAP 18, LOT 45
VANCE J. & ROBIN E. GORHAM
20 CORNERSTONE DRIVE
DOVER, NH 03820
BK. 5044, PG. 967

LENGTH: 59.68'
RADIUS: 53.00'
CHORD: S 07°36'18" E 56.57'

NOTES:

1. THE PURPOSE OF THIS SKETCH IS TO DEPICT THE FOUND MONUMENTATION OF TAX MAP 18, LOT 43.
2. TOTAL PARCEL AREA: MAP 18, LOT 43 0.31 ACRES.
3. PARCEL IS ZONED: RURAL RESIDENTIAL (R-40).
4. MINIMUM LOT REQUIREMENTS: LOT SIZE = 40,000 SQ FT, FRONTAGE = 150 FT.
5. BUILDING SETBACKS:
   PRINCIPAL BUILDING: FRONT YARD = 40 FT, SIDE YARD = 25 FT, REAR YARD = 30 FT.
   OUTBUILDING / ACCESSORY USE: FRONT YARD = 40 FT, SIDE YARD = 10 FT, REAR YARD = 10 FT.

   SUBDIVISION SPECIFIC SETBACKS: (PER PLAN REF. 1)
   35' FROM PAVEMENT
   40' BETWEEN BUILDINGS
   50' OVERALL BOUNDARY BUFFER
   (ULTIMATE CERTIFICATION AND VERIFICATION OF THE ZONE DESIGNATION AND APPLICABLE LOCATION OF BUILDING SETBACK REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE ZONING OFFICER IN THE SUBJECT MUNICIPALITY.)
6. THE SURVEYED PARCEL IS SERVICED BY THE MUNICIPAL WATER AND SEWER SYSTEM.
7. THE SURVEYED PARCEL IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 9/30/2015 COMMUNITY PANEL # 33017C0302E.
8. HORIZONTAL DATUM: NH STATE PLANE, NAD83(2011).
9. THE WETLAND LIMITS SHOWN ON THIS PLAN WERE DELINEATED BY MARC JACOBS, CWS, CSS ON APRIL 4, 2025, AND LOCATED BY NPA.
10. ABUTTING PROPERTY INFORMATION WAS TAKEN FROM DOVER TAX RECORDS. ABUTTING PROPERTY LINES WERE TAKEN FROM DOVER TAX MAPS AND ARE FOR INFORMATIONAL PURPOSES ONLY.
11. CORNERSTONE DRIVE IS A PRIVATE ROAD, PER NH DOT.
12. IMPERVIOUS CALCULATIONS:
    EXISTING IMPERVIOUS: 2591 SQ. FT. (19%)
    EXISTING ASPHALT TO BE REMOVED: 207 SQ. FT.

    PROPOSED INCREASE: 430 SQ. FT.
    NET INCREASE: 223 SQ. FT.
    TOTAL PROPOSED IMPERVIOUS: 2814 SQ. FT. (21%)
13. WETLAND A AREA: 2209 SQ. FT.
    WETLAND A BUFFER AREA: 8682 SQ. FT.

    WETLAND B AREA: 258 SQ. FT.
    WETLAND B BUFFER AREA: 6147 SQ. FT.
    BUFFER OVERLAP AREA: 4409 SQ. FT.

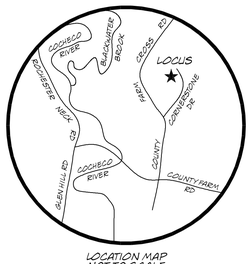
    EXISTING BUFFER IMPACTS: 2212 SQ. FT.
    PROPOSED BUFFER IMPACTS: 2435 SQ. FT.

REFERENCE PLANS:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TRUST." DATED: 9/10/02, AND PREPARED BY JONES & BEACH ENGINEERS, INC. RECORDED: STRAFFORD COUNTY REGISTRY OF DEEDS PLAN # 76-6.

CORNERSTONE DRIVE

STATE OF NEW HAMPSHIRE — No. 1129 — GLENN D. GRISWOLD — LICENSED LAND SURVEYOR — SIGNATURE



LOCATION MAP
NOT TO SCALE

TAX MAP 18, LOT 43
OWNER OF RECORD:
ERIC J. & MEGAN A. LATOUR
28 CORNERSTONE DRIVE
DOVER, N.H.
BOOK 4072, PAGE 911

PROPOSED SITE PLAN
28 CORNERSTONE DRIVE
DOVER
STRAFFORD COUNTY
NEW HAMPSHIRE
FOR:
ERIC LATOUR

1" = 10' MAY 2025

GRAPHIC SCALE

10 0 5 10 20 40

REVISIONS:

FILE NO. 469
PLAN NO. C-3696
DWG. NO. 25031

SHEET 2 of 2

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

NORWAY PLAINS ASSOCIATES, INC.

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

PERMIT SNAPSHOT REPORT COND-2025-0008
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	04/14/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Submitted - Online	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: We would like to add a 24' x 24' garage on to the side of the house (attached). We have wetlands near the location in the front of the house. As part of this project we plan to redirect all water from the garage and driveway to the wetlands in the front of the house.

Parcel: B0018-043000 Main	**Address:** 28 Cornerstone Dr Main Dover, NH	**Zone:** R-40(Residential - Rural)

Owner	Plan Preparer	Applicant	Surveyor
Eric Latour	Eric Latour	Eric Latour	Ashley Rowe
28 Corner Stone Dr	28 Corner Stone Dr	28 Corner Stone Dr	PO Box 249
Dover, NH 03820	Dover, NH 03820	Dover, NH 03820	Rochester, NH 03866
Home: (603) 781-5731	Home: (603) 781-5731	Home: (603) 781-5731	Business: (603) 335-3948
Business: (603) 781-5731	Business: (603) 781-5731	Business: (603) 781-5731	Mobile: (603) 842-2284
Mobile: (603) 781-5731	Mobile: (603) 781-5731	Mobile: (603) 781-5731	

Permit Custom Fields

Select Permit Type	Wetland Protection District	General Purpose	Alteration / Addition	Project Zone	Residential
New Change in Impervious/Paved Area (sq ft)	0	Work	We would like to put in an attached garage on the side of the house and improve drainage along the side of the house (where the garage is going) and also along the driveway so that the water will drain into the wetlands in the front of the house.	permitstatefed	None

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Eric_Latour_4/14/2025.jpg	04/14/2025 17:43	Latour, Eric		Uploaded via CSS
Permit Snapshot Report.pdf	04/14/2025 17:43	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025011988	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-2025011988	$200.00	$200.00
	Grand Total for Permit	**$200.00**	**$200.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			
Confirm application complete v.1	Generic Action		
Conditional Use Review v.1	Receive Submittal		
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		

Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task

Conditional Use Permit Request from Eric and Megan Latour for 28 Corner Stone Drive, Dover, NH.

Project Overview

This project proposes the construction of a 24' x 24' attached garage and a 8' x 8' mudroom on the left (south) side of our residence at 28 Cornerstone Drive, Dover, NH. The garage will enhance the functionality and value of our home by providing secure, weather-protected parking and storage space, which is especially important in New Hampshire's climate. Additionally, being able to park automobiles indoors will protect adjacent wetlands and water quality by minimizing the exposure to any runoff of automotive fluids such as oils, greases and solvents.

Site Characteristics and Wetland Delineation The property contains two identified wetlands:

1. **Wetland A:** Located in the front (east side) of the house.

Wetland A Area:	2209 SQ FT
Wetland A Buffer Area:	8682 SQ FT

2. **Wetland B:** Identified in 2025 as a low-spot wetland due to water accumulation from a neighboring sump pump at 20 Corner Stone Drive.

Wetland B Area:	258 SQ FT
Wetland B Buffer Area:	6147 SQ FT

3. **Impervious Details:**

Existing Impervious:	2591 SQ FT (19%)
Existing Asphalt To Be Removed:	207 SQ FT
Proposed Increase:	430 SQ FT
Net Increase:	223 SQ FT

   TOTAL PROPOSED IMPERVIOUS: 2814 SQ FT (21%)

4. **Wetland Buffer Details:**

Buffer Overlap Area:	4409 SQ FT
Existing Buffer Impacts:	2212 SQ FT
Proposed Buffer Impacts:	2435 SQ FT

Impact Assessment and Work Plan

The proposed garage is to be built on the left (south) side of the existing house. Alternative placement of the garage is not feasible due to a required 40-foot setback from other structures, as mandated by local zoning regulations. Relocating the garage elsewhere on the lot would either violate these setbacks or result in greater environmental disturbance. The proposed location was selected to minimize wetland impact while meeting all regulatory requirements and remaining practical and functional to our home. To further avoid environmental impacts, more than one-third of the garage will be built upon existing impermeable surface, displacing 207 square feet of asphalt.

Mitigation Measures

Recognizing the importance of protecting wetland integrity, the following measures have been integrated into the project design and construction process.

- **Permanent Impact:** Approximately 0 square feet of Wetland B will be permanently impacted by the construction of the attached garage. Additionally, 0 square feet of Wetland A will be permanently impacted by the construction of the attached garage. The existing house is 17.5 feet from Wetland A at the closest point. The proposed garage will be 20 feet from Wetland A and 3 feet from Wetland B at the closest points.

- **Managing for Minimized Impacts:** The garage is positioned 20 feet from Wetland A, eliminating any direct disturbance to that area. Wetland B will be protected with sediment control / limit-of-work barrier during construction. Construction activities will be closely managed to ensure that any disruptions to the buffer of Wetland B are strictly temporary. Any exposed soils will be stabilized with grass upon completion of construction. Neither wetland will be used for material storage or parking during construction.

Conclusion

In summary, our proposed attached garage project has been designed with a strong emphasis on protecting, preserving and enhancing the adjacent wetlands. We respectfully request that the Conditional Use Permit be granted, enabling us to move forward with construction while safeguarding the natural features of our property.

Thank you for your consideration.

Best,

Eric and Megan Latour

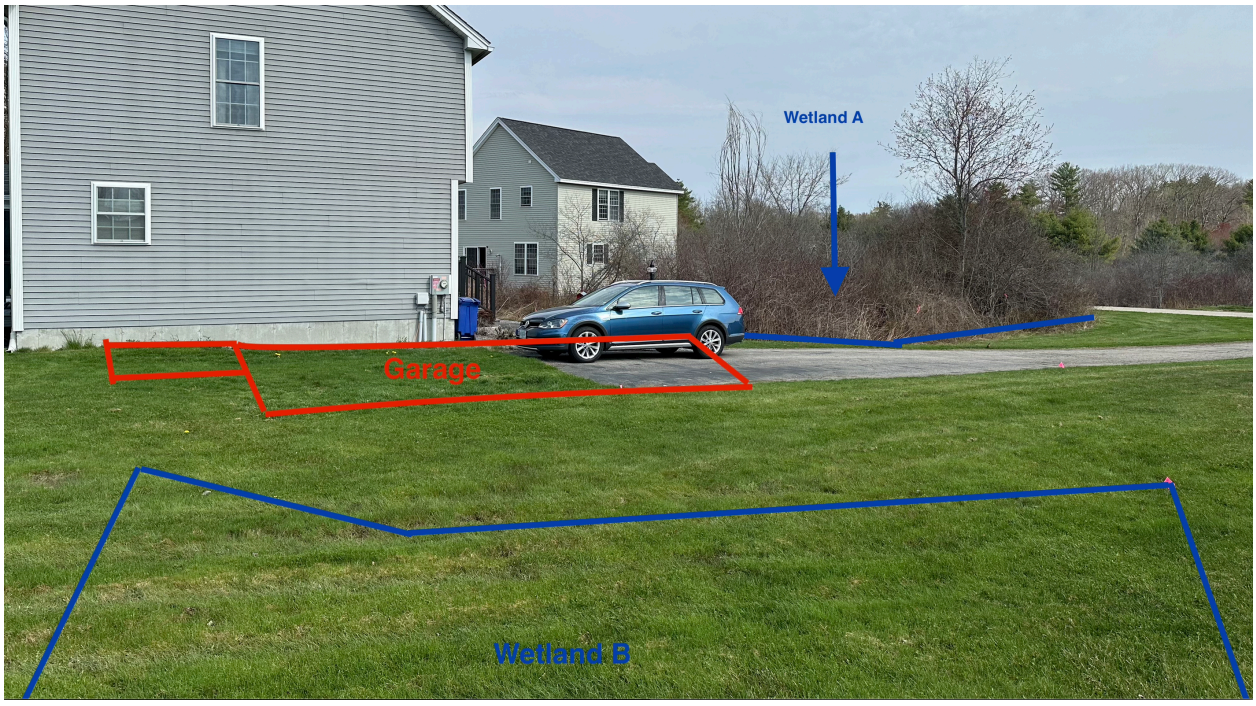
Attachments:

1. Site image of 28 Corner Stone Drive - Front
2. Site image of 28 Corner Stone Drive - Back
3. Site image of 28 Corner Stone Drive - Side
4. 25031 Proposed Site Plan Del01
5. Neighboring sump pump

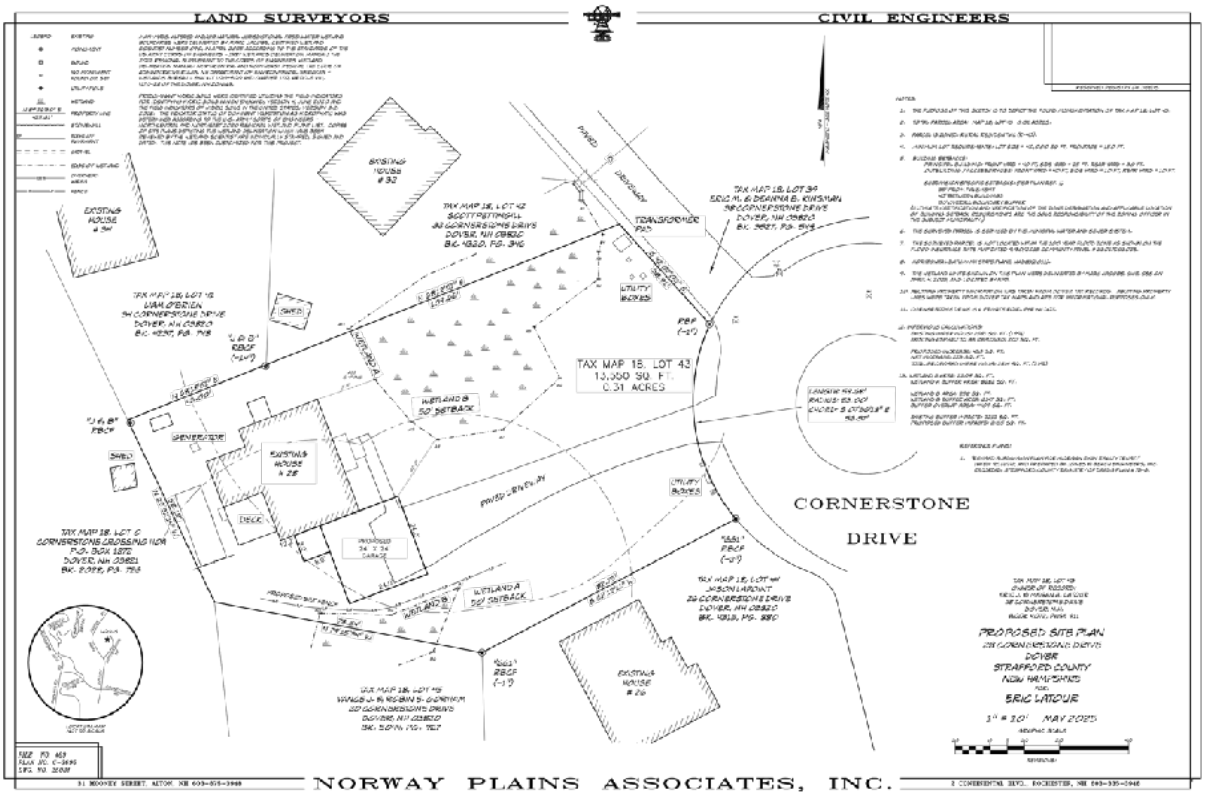
Site image of 28 Corner Stone Drive - Back



Site image of 28 Corner Stone Drive - Side

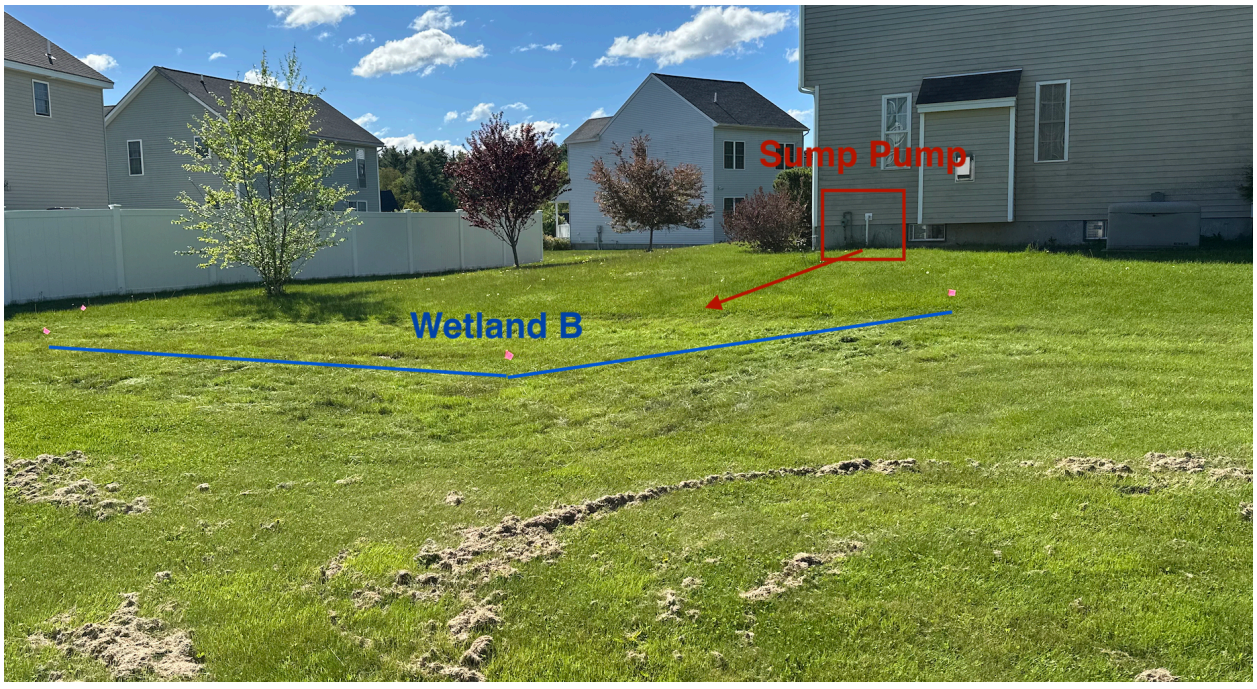


25031 Proposed Site Plan Del01



Site image of 28 Corner Stone Drive - Front




Sump Pump
Wetland B

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: **Eric Latour** Telephone # **603-781-5731**

Address of Applicant: **28 Corner Stone Dr, Dover NH 03820**

E-Mail Address: **elatour@gmail.com**

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # **18** Lot(s) # **43**

Address of Property: **28 Corner Stone Dr, Dover NH 03820**

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

Existing Use of Property: _____

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:

This project proposes the construction of a 24' x 24' attached garage and a 8' x 8' mudroom on the left (south) side of our residence at 28 Cornerstone Drive, Dover, NH. We will be within the wetland buffer zone with this project.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: **None**

Name of Professional That Prepared Plans: **Norway Plains Associates**

Address **2 Continental Blvd Rochester, NH 03866-0249** Telephone #: **(603) 335-3948**

Professional License #: **NH LLS#1129** E-mail address: **ggriswold@norwayplains.com**

SIGNATURES

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

Signature of Property Owner: _____ Date: **7/03/2025**

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: **7/03/2025**

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
18	43	Eric & Megan Latour	28 Corner Stone Dr, Dover NH, 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Glenn Griswold	Norway Plains Associates	
		2 Continental Blvd Rochester, NH 03866-0249

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # 1 per Application = $ 200
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____

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

SUBTOTAL PLAN REVIEW FEE (A) = $ 200

AND

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

- ☒ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # 2 of x $8.00= $ 16
- ☐ Certified letters fee: # of abutters _____ X $8.00= $_____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $100.00 x # 1 applications = $ 100

SUBTOTAL NOTICE FEE (B & C) = $ 116

TOTAL INVOICE AMOUNT (A, B & C) = $ 316

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ 316

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

Conditional Use Permit Request from Eric and Megan Latour for 28 Corner Stone Drive, Dover, NH.

Project Overview This project proposes the construction of a 24' x 24' attached garage on the left (south) side of our residence at 28 Cornerstone Drive, Dover, NH. The design and construction methods have been selected to minimize environmental impact while complying with the City of Dover's wetland regulations. The additional garage, to be constructed by J.R. Heald Builders LLC of Dover, NH, will provide enhanced functionality for our home while respecting the natural features of the property.

Site Characteristics and Wetland Delineation The property contains two identified wetlands:

1. **Wetland A:** Located approximately 10 feet from the front (east side) of the house.
2. **Wetland B:** Identified in 2025 as a low-spot wetland due to water accumulation from a neighboring sump pump at 20 Corner Stone Drive.

Photographs of both areas and the sump pump can be seen in the attached documentation. A thorough wetland delineation was performed in 2025 by Marc Jacobs, CWS, on behalf of Norway Plains Associates, Inc., ensuring that the boundaries and associated environmental features are accurately mapped. This delineation forms the baseline for understanding both temporary and permanent impacts arising from the proposed construction.

Impact Assessment and Work Plan The proposed garage is to be built on the left (south) side of the existing house, with its planned structure positioned approximately 18 feet from Wetland A. During construction, drainage modifications will be required to reroute water from Wetland B into Wetland A. As a result, there will be a temporary impact to Wetland B and its buffer zone. An updated site plan (included) has been prepared that clearly illustrates:

- The location of the proposed garage (indicated by a red square).
- The drainage route (shown as a blue arrow) that redirects water away from Wetland B.
- The area of disturbance within Wetland B and its buffer zone due to these modifications.

The land engineer for J.R. Heald Builders LLC will design the grading and drainage modifications to redirect water from Wetland B under the driveway to Wetland A in a way that maximizes the benefits to Wetland A while providing a long-term sustainable water management solution for our property. We estimate that the disturbance affecting Wetland B and the buffer zone covers approximately 570 square feet. The updated site plan, which is submitted with this narrative, provides detailed measurements and a clear diagram of the affected areas.

Mitigation Measures Recognizing the importance of protecting wetland integrity, the following measures have been integrated into the project design and construction process:

- **Minimized Permanent Impact:** The garage is positioned at a safe distance from Wetland A (approximately 18 feet), eliminating any long-term disturbance to that area.
- **Temporary Impact Management:** Construction activities, particularly those related to drainage redirection, will be closely managed. Sediment control, erosion prevention, and temporary stabilization measures will be implemented to ensure that any disruptions to the wetlands and their buffers are strictly temporary.

- **Restoration:** Following the completion of construction, affected areas within the wetland buffer zones will be restored to mitigate any temporary impact.

Environmental and Regulatory Compliance This narrative, in conjunction with the comprehensive site plan, demonstrates our commitment to adhering to local wetland protection standards and guidelines. All aspects of the proposed work—including the nature and extent of disturbance in both permanent and temporary scenarios—are clearly documented. We are coordinating with Norway Plains Associates, Inc. and J.R. Heald Builders LLC to ensure that the wetland delineation methods used in 2025 are fully integrated into the project planning process. We are submitting this application in anticipation of review by the Conservation Commission and the Planning Board, with the understanding that their approvals will enable us to proceed to the building permit stage.

Conclusion In summary, our proposed attached garage project has been designed with a strong emphasis on protecting, preserving and enhancing the adjacent wetlands. The integration of meticulous planning, a clear demonstration of minimized and temporary impact, and robust mitigation strategies reflects our commitment to environmental stewardship. We respectfully request that the Conditional Use Permit be granted, enabling us to move forward with construction while safeguarding the natural features of our property.

Thank you for your consideration.

Best,

Eric and Megan Latour

Attachments:

Site images of 28 Corner Stone Drive
Site Plan for 28 Corner Stone Drive





Front of house showing Wetland A.



Side of house showing location where garage will be built.



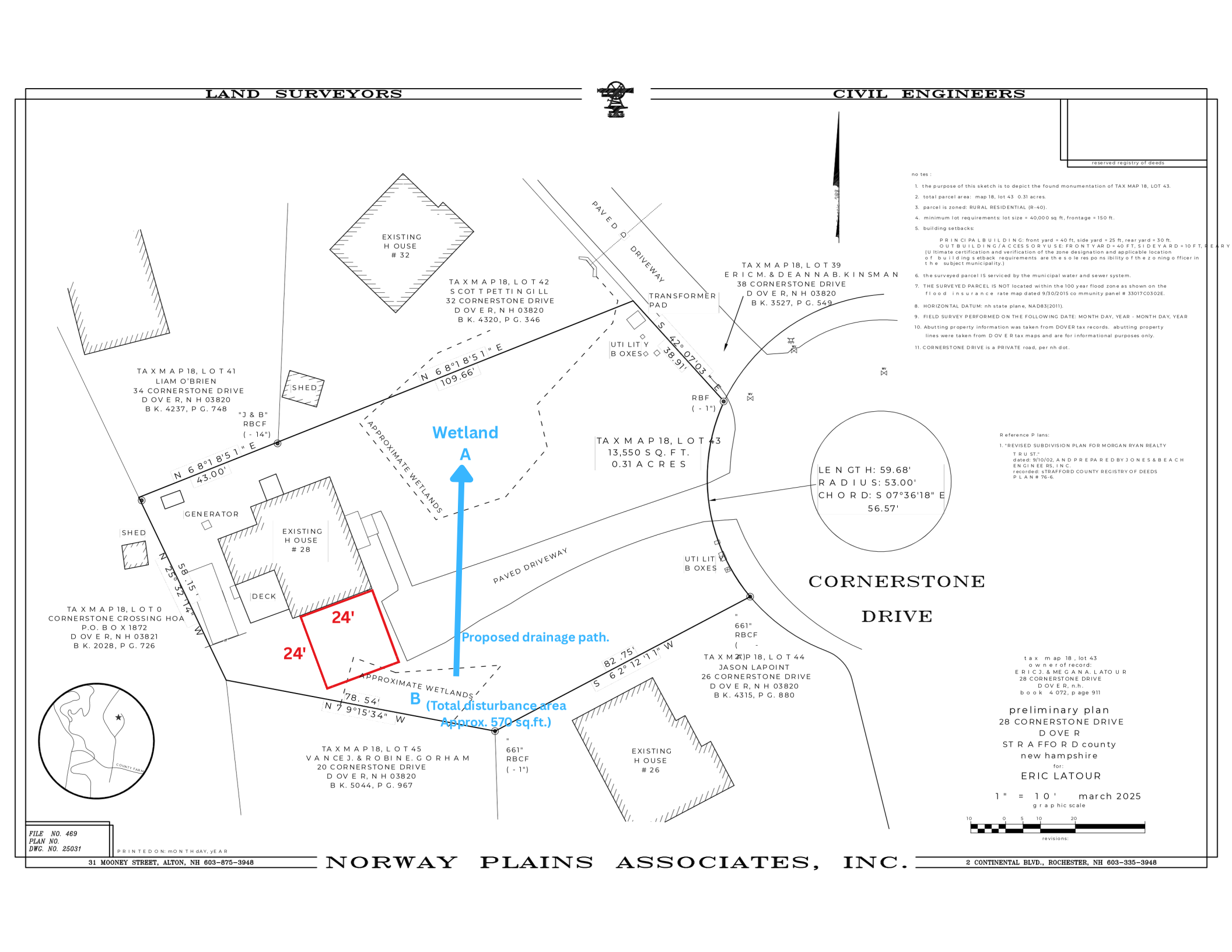
Side of house showing approximate location of Wetland B.



Outlet of sump pump originating from 20 Corner Stone Drive that is creating Wetland B.

LAND SURVEYORS

CIVIL ENGINEERS



reserved registry of deeds

no tes :

1. the purpose of this sketch is to depict the found monumentation of TAX MAP 18, LOT 43.
2. total parcel area: map 18, lot 43 0.31 acres.
3. parcel is zoned: RURAL RESIDENTIAL (R-40).
4. minimum lot requirements: lot size = 40,000 sq ft, frontage = 150 ft.
5. building setbacks:
   PR IN CI PA L BU IL DI N G: front yard = 40 ft, side yard = 25 ft, rear yard = 30 ft.
   OU TB U IL DI N G/A CC ES S OR Y U SE: FR O N T Y AR D = 40 FT, S I DE Y A R D = 10 FT, R E A R Y
   (U ltimate certification and verification of the zone designation and applicable location of building setback requirements are the sole responsibility of the zoning officer in the subject municipality.)
6. the surveyed parcel IS serviced by the municipal water and sewer system.
7. THE SURVEYED PARCEL IS NOT located within the 100 year flood zone as shown on the flood insurance rate map dated 9/30/2015 community panel # 33017C0302E.
8. HORIZONTAL DATUM: nh state plane, NAD83(2011).
9. FIELD SURVEY PERFORMED ON THE FOLLOWING DATE: MONTH DAY, YEAR - MONTH DAY, YEAR
10. Abutting property information was taken from DOVER tax records. abutting property lines were taken from D OV E R tax maps and are for informational purposes only.
11. CORNERSTONE DRIVE is a PRIVATE road, per nh dot.

Reference P lans:

1. "REVISED SUBDIVISION PLAN FOR MORGAN RYAN REALTY TR U ST." dated: 9/10/02, A N D P R E PA R E D BY J O N E S & B E A C H EN GI N EE RS, IN C. recorded: sTRAFFORD COUNTY REGISTRY OF DEEDS PL A N # 76-6.

tax map 18, lot 43
owner of record:
E R IC J. & M E G A N A. L A TO U R
28 CORNERSTONE DRIVE
D OV E R, n.h.
b o o k 4 072, p age 911

preliminary plan
28 CORNERSTONE DRIVE
D OV E R
ST R A FFO R D county
new hampshire
for:
ERIC LATOUR

1" = 10' march 2025
g r a p hic scale

10 0 5 10 20

revisions:

FILE NO. 469
PLAN NO.
DWG. NO. 25031

PRINTED ON: mONTHdAY, yEAR

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

NORWAY PLAINS ASSOCIATES, INC.

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

PERMIT SNAPSHOT REPORT COND-2025-0014
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	07/02/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: We are requesting updated guidance and approval from the City of Dover for a revised Conditional Use Permit for a significantly scaled-down residential renovation project at 476 Sixth Street. This replaces the prior application submitted in 2023 with conditional use approved by the City of Dover (see attachments).

Parcel:	B0001-C00000 Main	**Address:**	476 Sixth St Dover, NH Main	**Zone:**	R-40(Residential - Rural)

Owner	Plan Preparer	Applicant
Tina Sawtelle 476 6th Street Dover, NH 03820 Mobile: (603) 978-4611	Tina Sawtelle 476 6th Street Dover, NH 03820 Mobile: (603) 978-4611	Tina Sawtelle 476 6th Street Dover, NH 03820 Mobile: (603) 978-4611

Permit Custom Fields

Select Permit Type	Wetland Protection District	General Purpose	Alteration / Addition	Project Zone	Residential
New Change in Impervious/Paved Area (sq ft)	0	Work	We are requesting updated guidance and approval from the City of Dover for a revised Conditional Use Permit for a significantly scaled-down residential renovation project at 476 Sixth Street. This replaces the prior application submitted in 2023 with conditional use approved by the City of Dover (see attachments). The original proposal included a substantial front-facing addition to the garage and Creek Room area, which has since been eliminated. The new scope is focused solely on enclosing the existing rear deck and adding a modest 1-foot x 16-foot bumpout, totaling approximately 16 square feet of additional structure beyond the current footprint. The purpose is to convert the existing Creek Room into usable interior space without the need for extensive excavation, foundation work, or major alterations to the site. This revised design results in a much smaller buffer impact compared to		the original project, which proposed a new full foundation extension. No garage or driveway expansion is being proposed. This effort prioritizes thoughtful, low-impact design that meets the family's space needs while minimizing environmental disturbance.

PERMIT SNAPSHOT REPORT (COND-2025-0014)

permitstatefed

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Tina_Sawtelle_7/2/2025.jpg	07/02/2025 13:44	Sawtelle, Tina		Uploaded via CSS
Permit Snapshot Report.pdf	07/02/2025 13:45	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013122	Planning General Application Fee	$200.00	$200.00
	Total for Invoice INV-2025013122	$200.00	$200.00
	Grand Total for Permit	**$200.00**	**$200.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	In Review	07/02/2025	07/11/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	In Review	07/02/2025	07/30/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		07/02/2025 15:38	
Confirm application complete v.1	Generic Action		07/02/2025 15:38
Conditional Use Review v.1	Receive Submittal	07/02/2025 0:00	
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

Wetland Permit Narrative – Creek Room Renovation Project

Property Address: 476 Sixth Street, Dover, NH
Prepared for: City of Dover Planning Department
Prepared by: Tina Sawtelle (homeowner)

Date: July 2, 2025

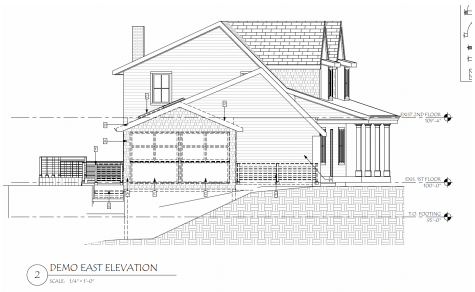
Project Overview

We are requesting updated guidance and approval from the City of Dover for a **revised Conditional Use Permit** for a significantly scaled-down residential renovation project at 476 Sixth Street. This replaces the prior application submitted in 2023 with conditional use approved by the City of Dover (see attachments).

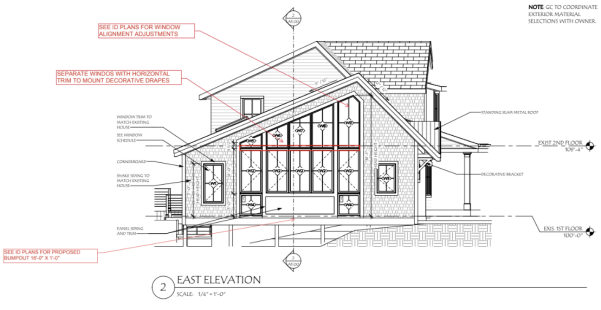
The original proposal included a substantial front-facing addition to the garage and Creek Room area, which has since been eliminated. The **new scope is focused solely on enclosing the existing rear deck and adding a modest 1-foot x 16-foot bumpout**, totaling approximately **16 square feet of additional structure** beyond the current footprint. The purpose is to convert the existing **Creek Room into usable interior space** without the need for extensive excavation, foundation work, or major alterations to the site.

This revised design results in a **much smaller buffer impact** compared to the original project, which proposed a new full foundation extension. No garage or driveway expansion is being proposed. This effort prioritizes thoughtful, low-impact design that meets the family's space needs while minimizing environmental disturbance.

Existing Creek Room



Proposed Creek Room



Wetland Delineation and Environmental Considerations

A **wetland delineation was performed by Joseph W. Noel, Certified Wetland Scientist (#086)**, in **March 2023**. His review and recommendations were part of the 2023 Conditional Use Permit submission, which included a complete site survey and topographical overlay.

Although the current project is a fraction of the original scope, we remain committed to following Mr. Jacobs' recommendations. These include:

- Minimizing disturbance within the wetland buffer zone
- Avoiding unnecessary tree removal
- Implementing best practices for erosion control during construction
- Ensuring buffer vegetation restoration post-construction if needed

---

Proposed Work and Wetland Buffer Impact

The revised scope includes:

- Enclosure of the existing rear deck off the Creek Room (no footprint change)
- A new 1-foot x 16-foot bumpout addition to slightly expand interior space
- No changes to the garage, driveway, or utility services

Impact Summary:

- **Permanent Wetland Buffer Impact:** Approximately **216 square feet** (200 SF from the existing deck footprint + 16 SF bumpout)
- **Temporary Buffer Disturbance:** To be minimized during access and staging; estimated **less than 150 square feet**
- **Wetland Impact: None** – all work remains outside the delineated wetland edge

The **original wetland line and 100-foot buffer** as documented in the 2023 site plan remain accurate and valid. An **updated site plan** is being developed to reflect this current, reduced scope and will include:

- Wetland boundary and buffer zones
- Existing and proposed structures
- Areas of disturbance in square footage
- Construction access routes

Request for City Guidance

Before incurring additional architectural and engineering fees to finalize construction drawings and full permit materials, we respectfully request **preliminary feedback and direction from the City of Dover Planning Department**.

We believe this revised plan—significantly reduced in size and environmental impact—aligns with the City's wetland protection standards. We are eager to move forward in full compliance and with minimal disruption to the surrounding natural features.

DONNA P. BENTON, AICP
Director of Planning and
Community Development
d.benton@dover.nh.gov

288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6008
Fax: (603) 516-6049
www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

NOTICE OF DECISION

May 11, 2023

Tina M. Sawtelle
476 Sixth Street
Dover, NH 03820

Re: Conditional Use Permit for Altus Engineering (Owner: Tina Sawtelle), Assessor's Map B, Lot 1-C, zoned R-40, located at 476 Sixth Street. (Proposal is to construct a building addition in a previously developed area creating 773 square feet of overlapped impact to the Conservation District and wetland buffer. *(COND-2023-0035)

Dear Ms. Sawtelle,

Please be advised that on Tuesday, May 9, 2023 the Dover Planning Board voted to conditionally grant final approval of the above referenced Conditional Use Permit and found the criteria of 170-27.1-F have been met.

The specific subsequent condition to be Met Prior to the Issuance of the Conditional Use Permit is:

1. ☐ The owner shall sign the final plans before Planning Board signature

If you have any questions, please do not hesitate to contact my office.

Sincerely,

Donna P. Benton

Donna P. Benton, AICP
Director of Planning & Community Development

EC: Inspection Services
Engineering Office
Assessing Office
Altus Engineering

THIS DRAWING SET HAS NOT BEEN RELEASED FOR CONSTRUCTION

CONDITIONAL USE PERMIT APPLICATION PLANS

CITY OF DOVER DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

FILE No. P23-xx

SAWTELLE RESIDENCE

476 Sixth Street

Dover, New Hampshire

Assessor's Parcel B-1-C-0

ISSUED FOR PERMITTING

Plan Issue Date:

March 20, 2023

Owner/Applicant:

TINA M. SAWTELLE
476 Sixth Street
Dover, NH 03820

Signature: _____
Date: _____

Civil Engineer:

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

Architect:

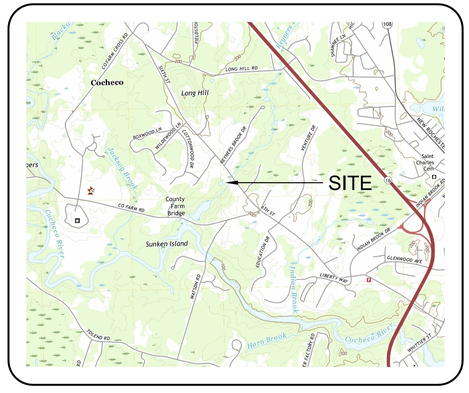
MARKET SQUARE ARCHITECTS
104 Congress Street
Suite 203
Portsmouth, NH 03801
(603) 501-0202

Surveyor:

Civilworks New England
civil engineering
P.O. Box 1166 181 Watson Road
Dover, NH 603-749-0443

Wetlands Scientist:

Joseph W. Noel, CWS #086
P.O. Box 174
South Berwick, Maine 03908



LOCUS NOT TO SCALE

Sheet Index Title	*Sheet Desig.*	*Sheet No.:*	*Rev.*	*Date*
Existing Conditions Worksheet	2	1	0	05/11/17
Demolition Plan	3	C-1	0	03/20/23
Site Plan	4	C-2	0	03/20/23
Conditional Use Permit Plan	5	C-3	0	03/20/23
Detail Sheet	6	D-1	0	03/20/23
Overall Floor Plans (Garage)	7	A1.01	0	12/01/22
Exterior Elevations (Garage)	8	A2.00	0	12/01/22
Overall Floor Plans (House)	9	A1.01	0	12/01/22
Overall Roof Plans (House)	10	A1.02	0	12/01/22
Exterior Elevations (House)	11	A2.00	0	12/01/22

P5297

EXISTING RIP-RAP
INV.=128.87
INV.=129.24
EXISTING CULVERT
EXISTING CULVERT
INV.=126.79
INV.=128.00
UTILITY POLE AND GUY
EXISTING CULVERT
INV.=127.29
INV.=124.69
EXISTING GUARDRAIL
Sixth Street
Pond El=130
INV.=131.04
INV.=131.94
EXISTING GRAVEL
EXISTING GRAVEL PATHWAY
EXISTING CULVERT
GRANITE RETAINING WALL
UG Gas Tank
EXISTING WALK
EXISTING WALK
EXISTING STAIRS
EXISTING HOUSE
EXISTING DECK
EXISTING CULVERT
INV.=131.09
INV.=126.85
Reyners Brook
EXISTING STAIRS
EXISTING DECK
EXISTING DECK

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE

DATE: 5-11-17
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1715
FILE: SITE.DWG

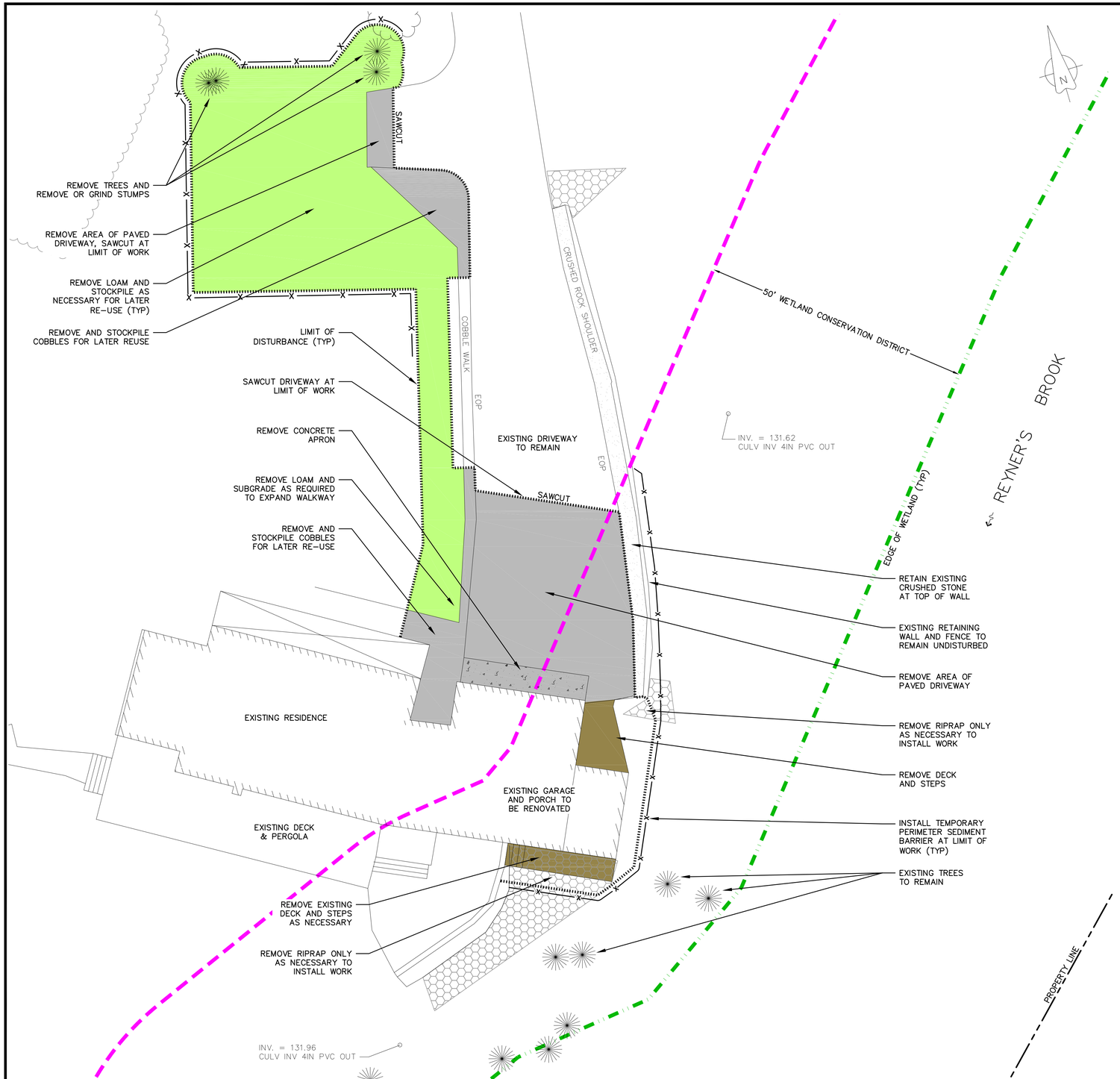
STATE OF NEW HAMPSHIRE
STEPHEN J. HAIGHT
No. 7973
LICENSED PROFESSIONAL ENGINEER
5/11/17

EXISTING CONDITIONS

TINA SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

DRIVEWAY RECONSTRUCTION
DOVER, NH

1



DEMOLITION NOTES

1. CITY DEMOLITION PERMIT MAY BE REQUIRED PRIOR TO ANY DEMOLITION ACTIVITIES. CONTRACTOR IS NOTIFIED THAT THIS PERMIT PROCESS MAY REQUIRE A 30-DAY LEAD TIME AND IS ENCOURAGED TO VERIFY THIS REQUIREMENT WITH THE CITY.
2. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES AND SITE ELEMENTS SCHEDULED TO REMAIN.
3. ALL MATERIALS SCHEDULED FOR DEMOLITION OR REMOVAL ON PRIVATE PROPERTY SHALL REMAIN THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ITEMS INDICATED TO BE STOCKPILED SHALL BE REUSED ON-SITE IF DEEMED SUITABLE BY THE ENGINEER.
4. ALL MATERIAL SCHEDULED TO BE REMOVED SHALL BE LEGALLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS/CODES.
5. NO BURNING SHALL BE PERMITTED PER LOCAL REGULATIONS.
6. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
7. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR THE DEMOLITION OF EXISTING SITE FEATURES. UNLESS OTHERWISE NOTED TO REMAIN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL BUILDINGS, PAVEMENT, CONCRETE, CURBING, SIGNS, POLES, UTILITIES, FENCES, VEGETATION AND OTHER EXISTING FEATURES AS NECESSARY TO FULLY CONSTRUCT THE PROJECT.
8. LOCATIONS OF PAVEMENT REMOVAL & SAWCUT LIMITS ARE SHOWN TO DEPICT THE GENERAL LIMITS OF WORK. CONTRACTOR'S MEANS & METHODS & PAVEMENT CONDITION WILL DICTATE THE EXACT LIMITS OF PAVEMENT REMOVAL.
9. SHOULD GROUNDWATER BE ENCOUNTERED DURING EXCAVATION, APPROPRIATE BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO ENSURE SEDIMENT LADEN WATER IS NOT DISCHARGED INTO A CITY DRAINAGE SYSTEM OR ADJACENT WETLANDS.
10. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE. CATCH BASINS, MANHOLES, WATER GATES, ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY PROVIDERS AND GOVERNMENTAL AGENCIES. AS SUCH, THEY ARE NOT INCLUSIVE AS OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE NOT SHOWN ON THE PLANS MAY EXIST. THE ENGINEER, SURVEYOR AND OWNER ACCEPT NO RESPONSIBILITY FOR POTENTIAL INACCURACIES IN THE PLAN AND/OR UNFORESEEN CONDITIONS. THE CONTRACTOR SHALL NOTIFY, IN WRITING, SAID AGENCIES, UTILITY PROVIDERS, CITY OF DOVER DPW AND OWNER'S AUTHORIZED REPRESENTATIVE AND CALL DIG SAFE AT 1 (800) DIG-SAFE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION WORK.
11. PRIOR TO CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING AND PROPOSED STORMWATER AND UTILITY LINES. CONFLICTS SHALL BE ANTICIPATED AND ALL EXISTING LINES TO BE RETAINED SHALL BE PROTECTED. ANY DAMAGE DONE TO EXISTING UTILITIES SHALL BE REPAIRED AND, IF NECESSARY, EXISTING UTILITIES SHALL BE RELOCATED AT NO EXTRA COST TO THE OWNER. ALL CONFLICTS SHALL BE RESOLVED WITH THE INVOLVEMENT OF THE ENGINEER, DPW AND APPROPRIATE UTILITIES.

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE - ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
3/20/23

NOT FOR CONSTRUCTION

ISSUED FOR: PERMITTING

ISSUE DATE: MARCH 20, 2023

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PERMITTING	EBS	03/20/23

DRAWN BY: RLH
APPROVED BY: EBS
DRAWING FILE: 5297.DWG

SCALE:
22" x 34" - 1" = 10'
11" x 17" - 1" = 20'

OWNER:
TINA M. SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

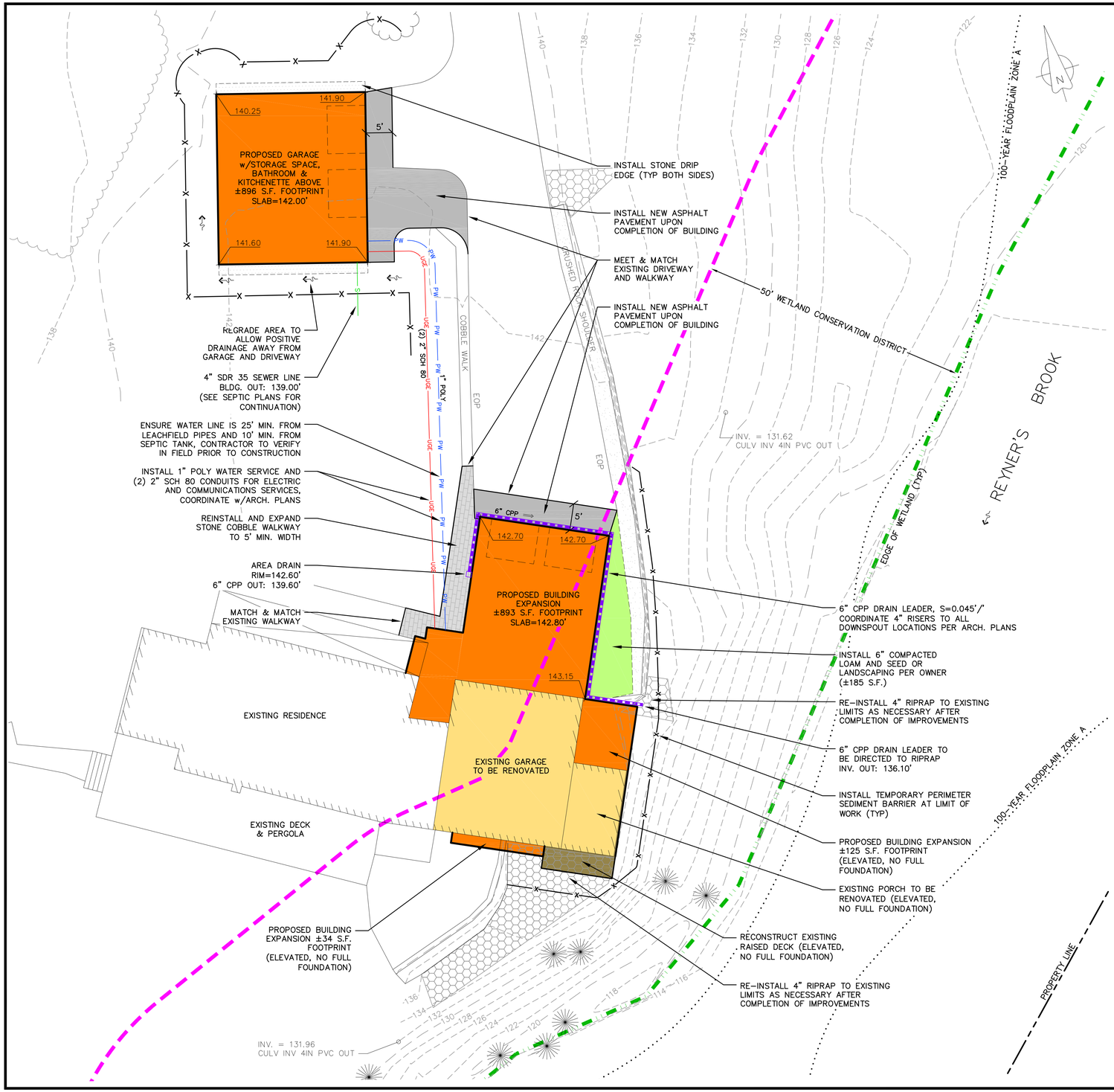
APPLICANT:
TINA M. SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

PROJECT:
SAWTELLE RESIDENCE
PARCEL B-1-C-0
476 SIXTH STREET
DOVER, NEW HAMPSHIRE

TITLE:
DEMOLITION PLAN

SHEET NUMBER:
C-1

P5297



SITE NOTES

1. DESIGN INTENT – THIS PLAN SET IS INTENDED TO DEPICT AN ADDITION TO AN EXISTING SINGLE FAMILY RESIDENCE AND OTHER SITE IMPROVEMENTS.
2. THE BOUNDARY AND EXISTING CONDITIONS SHOWN HERE WERE OBTAINED FROM A PLAN ENTITLED "EXISTING CONDITIONS" DATED 05/11/17 AND AN UNPUBLISHED AS-BUILT SURVEY WORKSHEET DATED APRIL 2022, BOTH PREPARED BY CIVILWORKS NEW ENGLAND.
3. APPROXIMATE LOT AREA: ±8.08 AC.
4. ZONE: R-40
5. DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	40,000 S.F.
MIN. STREET FRONTAGE:	150'
FRONT SETBACK:	40'
SIDE SETBACK:	25'
REAR SETBACK:	30'
MAX. BLDG HEIGHT:	35'
MAX. LOT COVERAGE:	10%

6. PORTIONS OF THE LOT ARE WITHIN THE 50' CONSERVATION DISTRICT.
7. THE SUBJECT PARCEL IS SHOWN AS DOVER PARCEL NUMBER B-1-C-0.
8. REFERENCE DEED: STRAFFORD COUNTY REGISTRY OF DEEDS BOOK 4445 PAGE 620.
9. OVERALL AREA OF DISTURBANCE UNDER 100,000 S.F., NHDES ALTERATION OF TERRAIN PERMIT NOT REQUIRED.
10. AREA OF DISTURBANCE UNDER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT NOT REQUIRED.
3. A PORTION OF THE LOT LIES WITHIN FEMA ZONE A AS SHOWN ON FIRM PANEL 33017C0310E EFFECTIVE 09/30/15.
4. SELECTED WETLANDS WERE DELINEATED BY JOSEPH NOEL ON DECEMBER 30, 2021 IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS (ACOE) WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH-CENTRAL AND NORTHEAST REGION (VERSION 2). HYDRIC SOIL DETERMINATIONS WERE CONDUCTED IN ACCORDANCE WITH THE U.S. DEPT. OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE'S FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES (VERSION 7.0, 2010) ALONG WITH THE MANUAL FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND (VERSION 3, APRIL 2004). PLANT SPECIES INDICATOR STATUS WAS BASED ON THE ACOE'S THE NATIONAL WETLAND PLANT LIST (2013).
5. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
8. BUILDING AREA SHOWN IS BASED ON FOOTPRINT MEASURED TO THE EDGE OF FOUNDATIONS AND/OR SLABS. ACTUAL INTERIOR SPACE WILL DIFFER.
9. CONDITIONAL USE PERMIT UNDER SECTION 170-27.C OF THE DOVER ZONING ORDINANCE REQUIRED FOR WORK WITHIN THE CONSERVATION DISTRICT.
10. THE SITE IS SERVED BY MUNICIPAL WATER FROM THE CITY OF DOVER AND A PRIVATE SUBSURFACE SANITARY DISPOSAL SYSTEM.
11. ALL NEW WATER LINES SHALL BE PRIVATE AND CONSTRUCTED AT A MINIMUM DEPTH OF 5' BELOW FINISH GRADE.
12. 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 SPECIFICATIONS FOR CONSTRUCTION, LATEST EDITIONS. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
13. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE. CATCH BASINS, MANHOLES, WATER GATES, ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY PROVIDERS AND GOVERNMENTAL AGENCIES. AS SUCH, THEY ARE NOT INCLUSIVE AS OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE NOT SHOWN ON THE PLANS MAY EXIST. THE ENGINEER, SURVEYOR AND OWNER ACCEPT NO RESPONSIBILITY FOR POTENTIAL INACCURACIES IN THE PLAN AND/OR UNFORESEEN CONDITIONS. THE CONTRACTOR SHALL NOTIFY, IN WRITING, SAID AGENCIES, UTILITY PROVIDERS, CITY OF DOVER DPW AND OWNER'S AUTHORIZED REPRESENTATIVE AND CALL DIG SAFE AT 1 (800) DIG-SAFE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION WORK.
14. THESE PLANS ARE INTENDED FOR PERMITTING PURPOSES ONLY. COORDINATE SITE GRADES, DRAINAGE AND UTILITIES WITH THE ENGINEER AND ARCHITECT PRIOR TO INITIATING CONSTRUCTION.

ALTUS ENGINEERING
133 Court Street Portsmouth, NH 03801
(603) 433-2335 www.altus-eng.com

STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
3/20/23

NOT FOR CONSTRUCTION

ISSUED FOR: PERMITTING

ISSUE DATE: MARCH 20, 2023

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	PERMITTING	EBS	03/20/23

DRAWN BY: RLH
APPROVED BY: EBS
DRAWING FILE: 5297.DWG

SCALE:
22" x 34" – 1" = 10'
11" x 17" – 1" = 20'

OWNER:
TINA M. SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

APPLICANT:
TINA M. SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

PROJECT:
SAWTELLE RESIDENCE
PARCEL B-1-C-0
476 SIXTH STREET
DOVER, NEW HAMPSHIRE

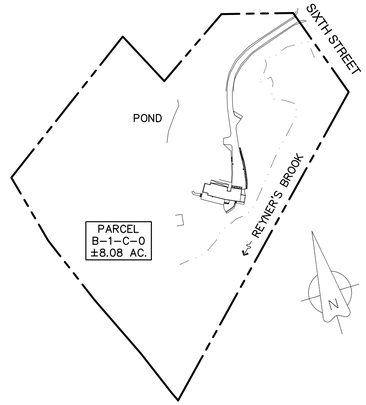
TITLE:
SITE AND UTILITIES PLAN

SHEET NUMBER:
C-2

P5297



OVERALL LOT PLAN 1" = 160'



CUP AND EROSION CONTROL NOTES

1. TOTAL PROJECT AREA OF DISTURBANCE = ±4,158 S.F. (±0.10 AC.). NHDES ALTERATION OF TERRAIN PERMIT NOT REQUIRED. PROJECT NOT SUBJECT TO EPA NPDES PHASE II – NOI, SWPPP AND MINIMUM WEEKLY INSPECTIONS NOT REQUIRED.
2. PERIMETER SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AFTER TREE CLEARING OPERATIONS HAVE CEASED AND BEFORE ANY STUMPING, GRUBBING OR OTHER EARTH DISTURBANCE.
3. GRIND STUMPS AND REUSE GRINDINGS FOR EROSION CONTROL WHERE POSSIBLE OR TRUCK OFFSITE. NO STUMPS SHALL BE BURIED ON SITE.
4. NO EARTHWORK SHALL COMMENCE UNTIL ALL APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED IN GOOD WORKING ORDER FOR THE DURATION OF CONSTRUCTION AND THE SITE IS STABILIZED.
5. SEE DETAIL SHEETS FOR PERTINENT SEDIMENT AND EROSION CONTROL DETAILS AND ADDITIONAL NOTES.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DESIGN STANDARDS AND SPECIFICATIONS SET FORTH BY THE NEW HAMPSHIRE OF ENVIRONMENTAL SERVICES.
7. THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PREVENT EROSION, PREVENT SEDIMENT FROM LEAVING THE SITE AND/OR ENTERING WETLANDS AND ENSURE PERMANENT SOIL STABILIZATION.
8. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE SIX (6") INCHES OF LOAM, LIMESTONE, FERTILIZER, SEED, AND MULCH USING APPROPRIATE SOIL STABILIZATION TECHNIQUES. SEE DETAILS FOR ADDITIONAL INFORMATION.
9. UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND ANY AREAS DISTURBED BY THE REMOVAL SMOOTHED AND REVEGETATED.
10. CONTRACTOR SHALL READ AND FOLLOW ALL CONDITIONS OF APPROVAL IN THE SITE'S CITY OF DOVER CONDITIONAL USE PERMIT.
11. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
12. CONSERVATION DISTRICT ANALYSIS –

	EXISTING	PROPOSED
IMPERVIOUS SURFACES:	±1,887 S.F.	±1,722 S.F. (165 S.F. REDUCTION)
AREA OF DISTURBANCE:		±773 S.F.

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DOVER, NH 03820

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TINA M. SAWTELLE
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DOVER, NH 03820

PROJECT:
SAWTELLE RESIDENCE
PARCEL B-1-C-0
476 SIXTH STREET
DOVER, NEW HAMPSHIRE

TITLE:
CONDITIONAL USE PERMIT PLAN

SHEET NUMBER:
C-3

P5297

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

476 SIXTH STREET
DOVER, NEW HAMPSHIRE
TAX MAP B LOT 1–C

LATITUDE: 43°12'10" N
LONGITUDE: 70°52'00" W

OWNER/APPLICANT:
TINA M. SAWTELLE
476 SIXTH STREET
DOVER, NH 03820

DESCRIPTION

The project consists of the renovation/conversion of existing building spaces, several new building additions and a separate standalone garage together with associated site improvements.

DISTURBED AREA

The total area to be disturbed for the development is ±4,210 S.F. (±0.10 acres).

PROJECT PHASING

The proposed demolition, conversion and construction of building improvements along with associated improvements will be completed in one phase. Construction of a separate garage may be completed in a separate phase.

NAME OF RECEIVING WATER

The site drains over land to Reyner's Brook.

SEQUENCE OF MAJOR ACTIVITIES

1. Cut trees designated for removal in the project area.
2. Install temporary erosion control measures including perimeter controls as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
3. Remove landscaping, brush, and stumps strip loam and stockpile.
4. Demolish existing site features, etc. as shown on Demolition Plan.
5. Construct garage foundation.
6. Rough grade site including placement of borrow materials.
7. Construct new building additions and associated improvements.
8. Construct drainage structures & pavement base course materials.
9. Install base course paving.
10. Install top course paving.
11. Loam (6" min) and seed on all disturbed areas not paved or otherwise stabilized.
12. Install landscaping.
13. When all construction activity is complete and site is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, perimeter controls shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area and permanent measures are established, perimeter controls shall be removed.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through appropriate perimeter controls. All storm drain inlets shall be provided with inlet protection measures.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built–up sediment shall be removed from perimeter barriers when it has reached one–third the height of the barrier or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. An area shall be considered stable if one of the following has occurred:
   a. Base coarse gravels have been installed in areas to be paved;
   b. A minimum of 85% vegetated growth as been established;
   c. A minimum of 3 inches of non–erosive material such as stone of riprap has been installed; – or –
   d. Erosion control blankets have been properly installed.
9. Areas disturbed during construction shall be left exposed for more than 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
   a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
   b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment 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.

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrubs.
Jute and Fibrous Matting (Erosion Blanket	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1–1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	* The organic matter content is between 80 and 100%, dry weight basis. * Particle size by weight is 100% passing a 6"screen and a minimum of 70 % maximum of 85% passing a 0.75" screen. *The organic portion needs to be fibrous and elongated. *Large portions of silts, clays or fine sands are not acceptable in the mix. * Soluble salts content is less than 4.0 mmhos/cm. *The pH should fall between 5.0 and 8.0.

3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. PERMANENT SEEDING –

1. Bedding – stones larger than 1½", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

2. Fertilizer – lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds and amounts of lime and organic 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 @ 100 lbs. per 1,000 s.f.
   10–20–20 organic fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture (recommended):

Type	Lbs. / Acre	Lbs. / 1,000 sf
Tall Fescue	24	0.55
Creeping Red Fescue	24	0.55
LAWN OR PLANTING BED		
Total	48	1.10

Seed Mixture (For slope embankments):
Grass Seed: Provide fresh, clean, new–crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

Type	Min. Purity (%)	Min. Germination (%)	Kg./Hectare (Lbs/Acre)
Creeping Red Fescue (c)	96	85	45 (40)
Perennial Rye Grass (a)	98	90	35 (30)
Redtop	95	80	5 (5)
Alsike Clover	97	90(e)	5 (5)
		Total	90 (80)

   a. Ryegrass shall be a certified fine–textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
   b. Fescue varieties shall include – Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.

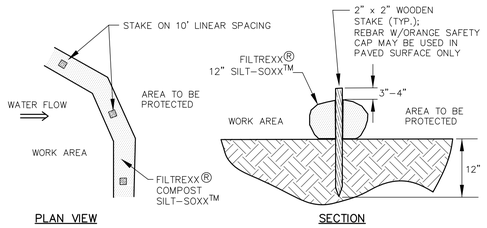
4. Sodding – sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

1. All proposed 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 elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation 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 events;

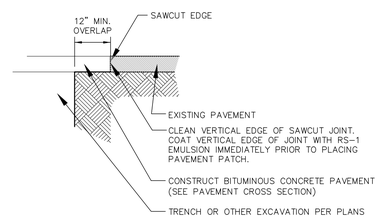
2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and

3. After November 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

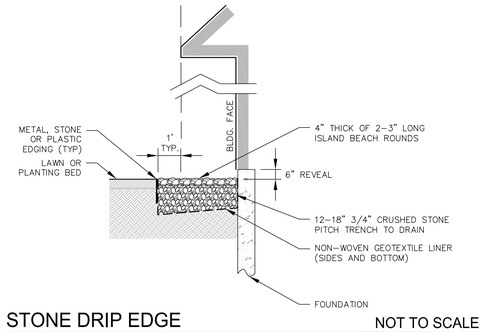


NOTES:
1. SILTSOXX MAY BY USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. SILTSOXX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
4. ALL SEDIMENT TRAPPED BY SILTSOXX SHALL BE DISPOSED OF PROPERLY.

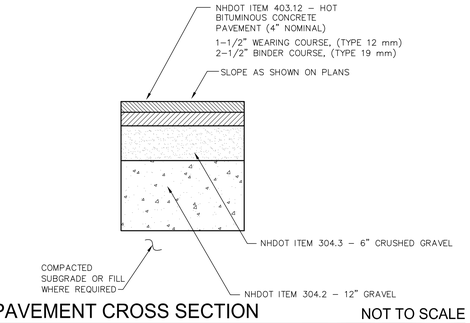
TUBULAR SEDIMENT BARRIER NOT TO SCALE



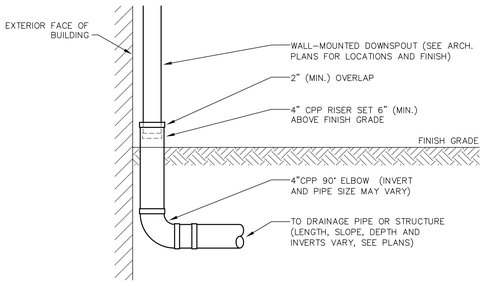
TYPICAL PAVEMENT SAWCUT NOT TO SCALE



STONE DRIP EDGE NOT TO SCALE

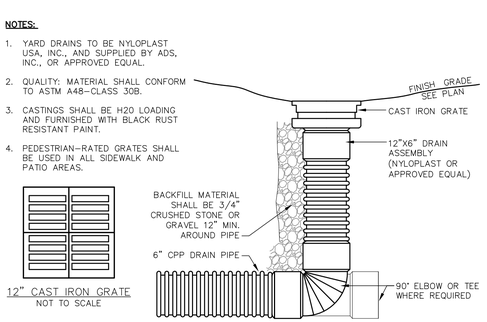


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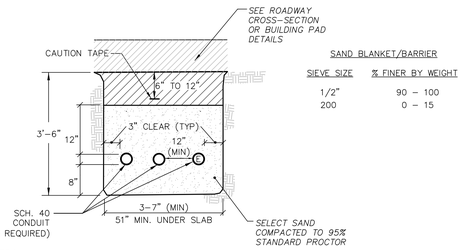


EXTERIOR ROOF DRAIN CONNECTION NOT TO SCALE

NOTES:
1. YARD DRAINS TO BE NYLOPLAST USA, INC., AND SUPPLIED BY ADS, INC., OR APPROVED EQUAL.
2. QUALITY: MATERIAL SHALL CONFORM TO ASTM A48–CLASS 30B.
3. CASTINGS SHALL BE H20 LOADING AND FURNISHED WITH BLACK RUST RESISTANT PAINT.
4. PEDESTRIAN–RATED GRATES SHALL BE USED IN ALL SIDEWALK AND PATIO AREAS.



YARD DRAIN (YD) NOT TO SCALE



NOTES
1. ALL CONDUIT IS TO BE SCHEDULE 40 PVC, ELECTRICAL GRADE, GRAY IN COLOR AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. A 10–FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE SERVICE PROVIDER DESIGNER, THE SWEEP–PVC JOINT IS NOT SUBJECT TO FAILURE DURING PULLING OF THE CABLE. ALL JOINTS ARE TO BE WATERTIGHT.
2. ALL 90 DEGREE SWEEPS WILL BE MADE WITH RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES.
3. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY SERVICE PROVIDER. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE IN 6–INCH LAYERS AND THOROUGHLY COMPACTED.
4. A SUITABLE PULLING STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE SERVICE PROVIDER IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT. A MINIMUM OF TWENTY–FOUR (24") INCHES OF ROPE SLACK SHALL REMAIN AT THE END OF EACH DUCT. PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT FOR FUTURE PULLS. PULL ROPE SHALL BE NYLON ROPE HAVING A MINIMUM TENSILE STRENGTH OF THREE HUNDRED (300#) LBS.
5. SERVICE PROVIDER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT ALL CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD SERVICE PROVIDER BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
6. TYPICAL CONDUIT SIZES ARE 3–INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4–INCH FOR THREE PHASE SECONDARY, AND 5–INCH FOR THREE PHASE PRIMARY. HOWEVER, SERVICE PROVIDERS MAY REQUIRE DIFFERENT NUMBERS, TYPES AND SIZES OF CONDUIT THAN THOSE SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDUIT SIZES, TYPES AND NUMBERS WITH EACH SERVICE PROVIDER PRIOR TO ORDERING THEM.
7. ROUTING OF CONDUIT, LOCATION OF MANHOLES, TRANSFORMERS, CABINETS, HANDHOLES, ETC., SHALL BE DETERMINED BY SERVICE PROVIDER DESIGN PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH ALL SERVICE PROVIDERS PRIOR TO THE INSTALLATION OF ANY CONDUIT.
8. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE. WHERE REQUIRED BY UTILITY PROVIDER, CONDUIT SHALL BE SUPPORTED IN PLACE USING PIPE STANCHIONS PLACED EVERY FIVE (5') FEET ALONG THE CONDUIT RUN.
9. UNDER A BUILDING SLAB THE CONDUIT SHALL BE ENCASED IN 8" OF CONCRETE ON ALL SIDES.
10. ALL CONDUIT TERMINATIONS SHALL BE CAPPED TO PREVENT DEBRIS FROM ENTERING CONDUIT.

ELECTRIC / COMMUNICATION TRENCH NOT TO SCALE

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STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
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ISSUE DATE: MARCH 20, 2023

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APPROVED BY: EBS
DRAWING FILE: 5297.DWG

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DOVER, NH 03820

APPLICANT:
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PROJECT:
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PARCEL B–1–C–0
476 SIXTH STREET
DOVER, NEW HAMPSHIRE

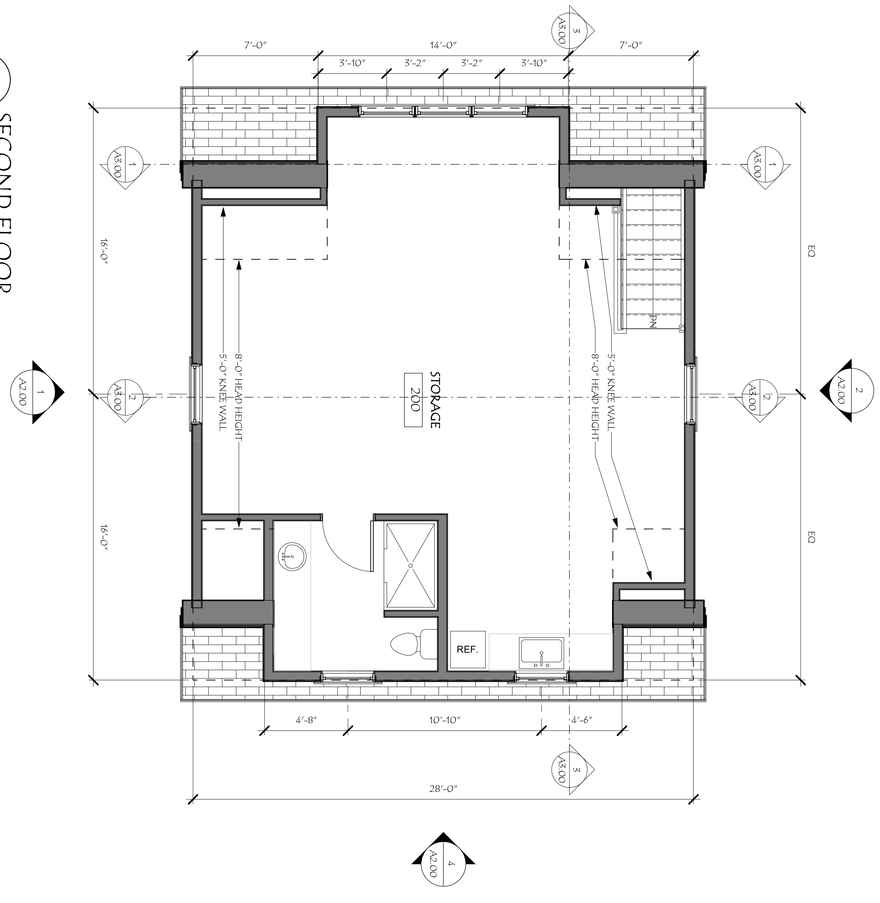
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DETAIL SHEET

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P5297

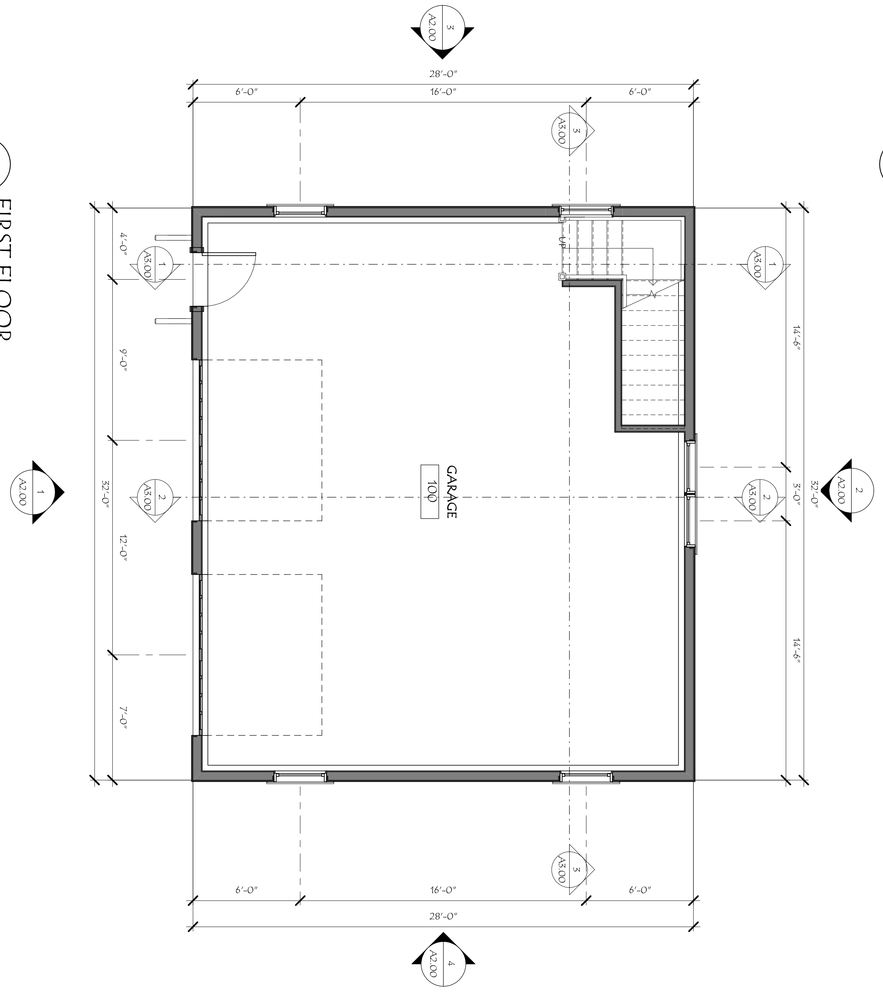
2 SECOND FLOOR

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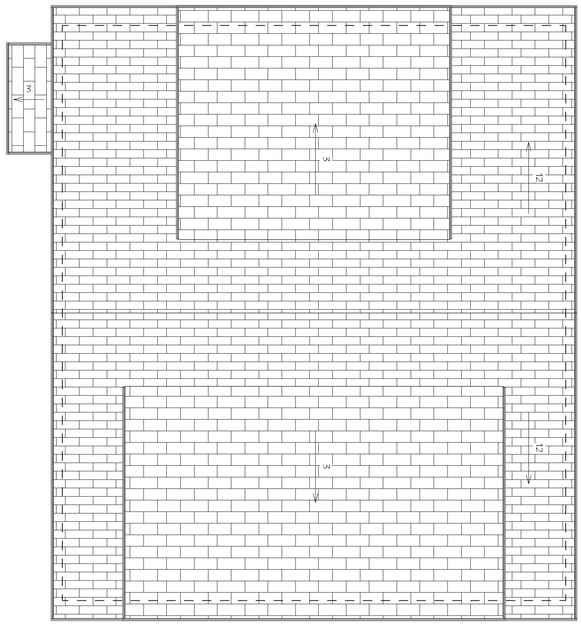
1 FIRST FLOOR

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



3 ROOF

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



Title:	OVERALL FLOOR PLANS
	A1.01
Scale:	1/4" = 1'-0"
Drawn By:	ANR
Checked By:	RJH
Project No.:	2022044
	SCHEMATIC DESIGN
Date:	12/1/22

Revisions:

Description	Date

NOT FOR CONSTRUCTION

SAWTELLE GARAGE

476 6TH STREET
DOVER, NH 03820

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603.501.0202

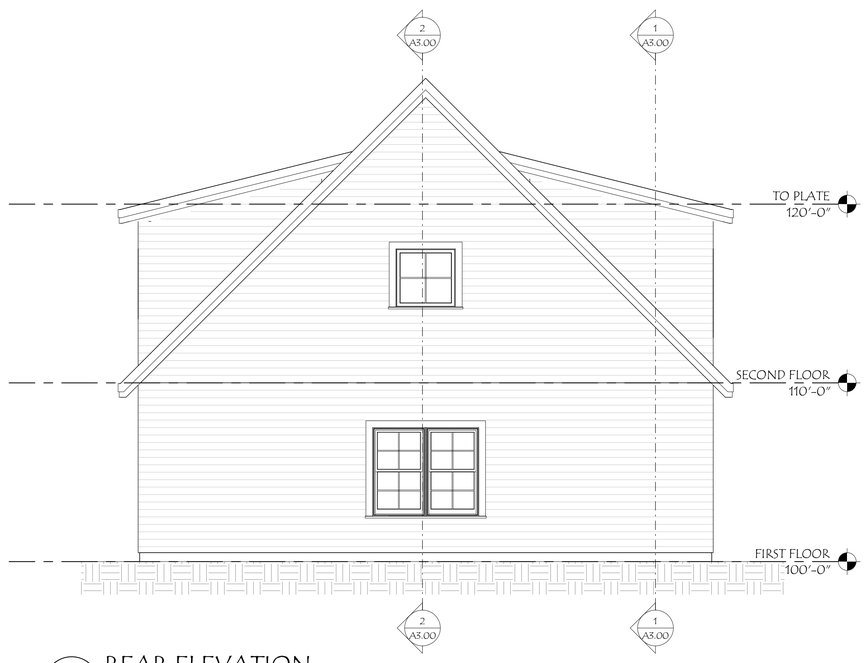
Sheet 7 of 11

* 2022 Market Square Architects 12/1/2022 11:12:45 AM



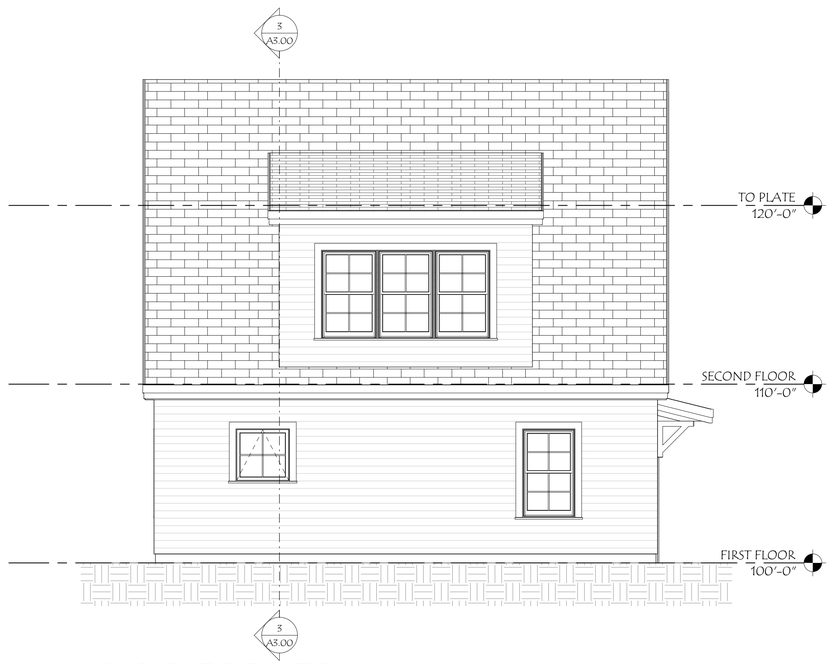
4 LEFT ELEVATION

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



2 REAR ELEVATION

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



3 RIGHT ELEVATION

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



1 FRONT ELEVATION

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

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH. 603.501.0202

SAWTELLE GARAGE

476 6TH STREET
DOVER, NH 03820

NOT FOR CONSTRUCTION

Revisions:

Description	Date

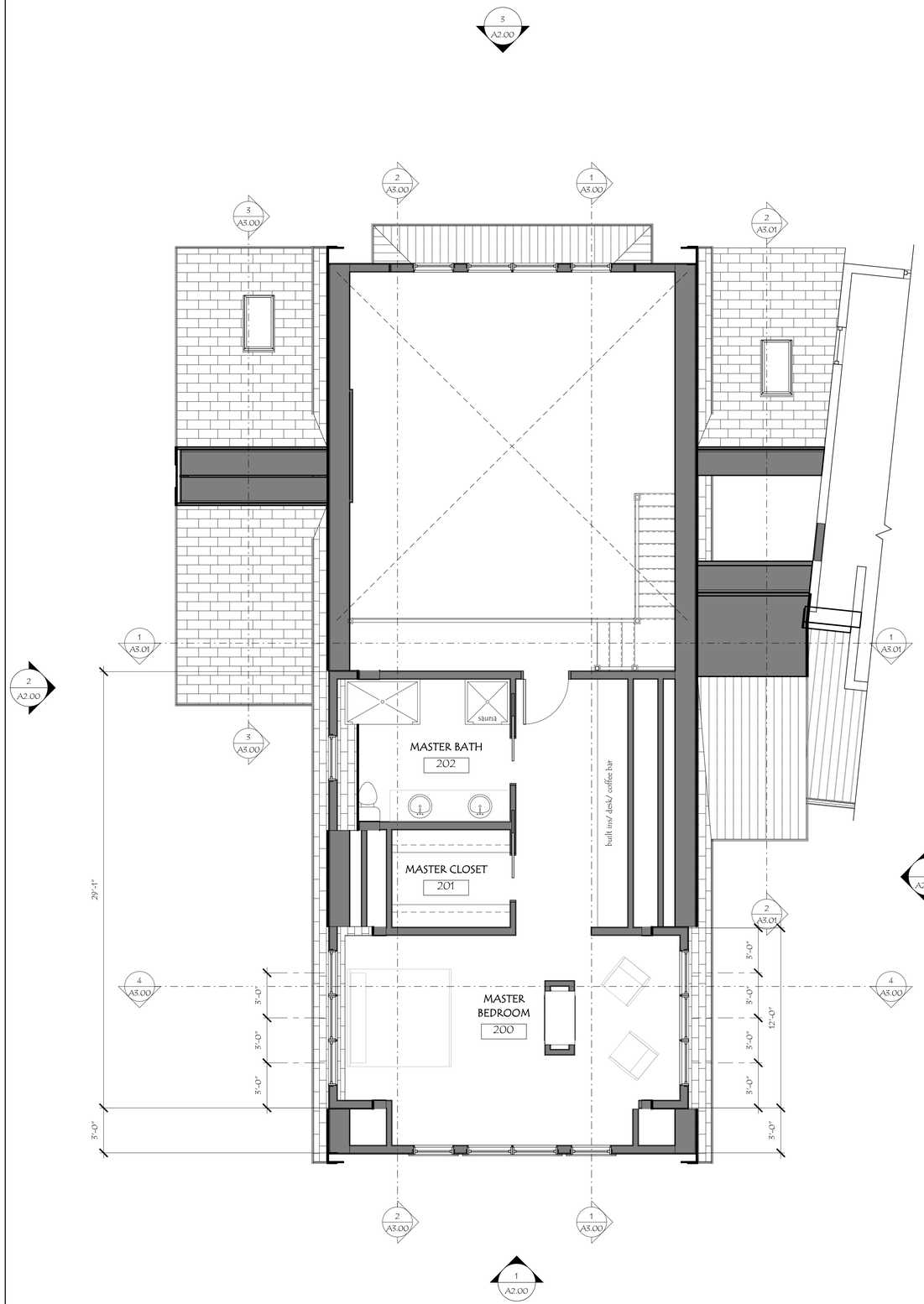
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Drawn By: ANR
Checked By: RJH
Project No.: 2022044
SCHEMATIC DESIGN
Date: 12/1/22

Title: EXTERIOR ELEVATIONS

A2.00

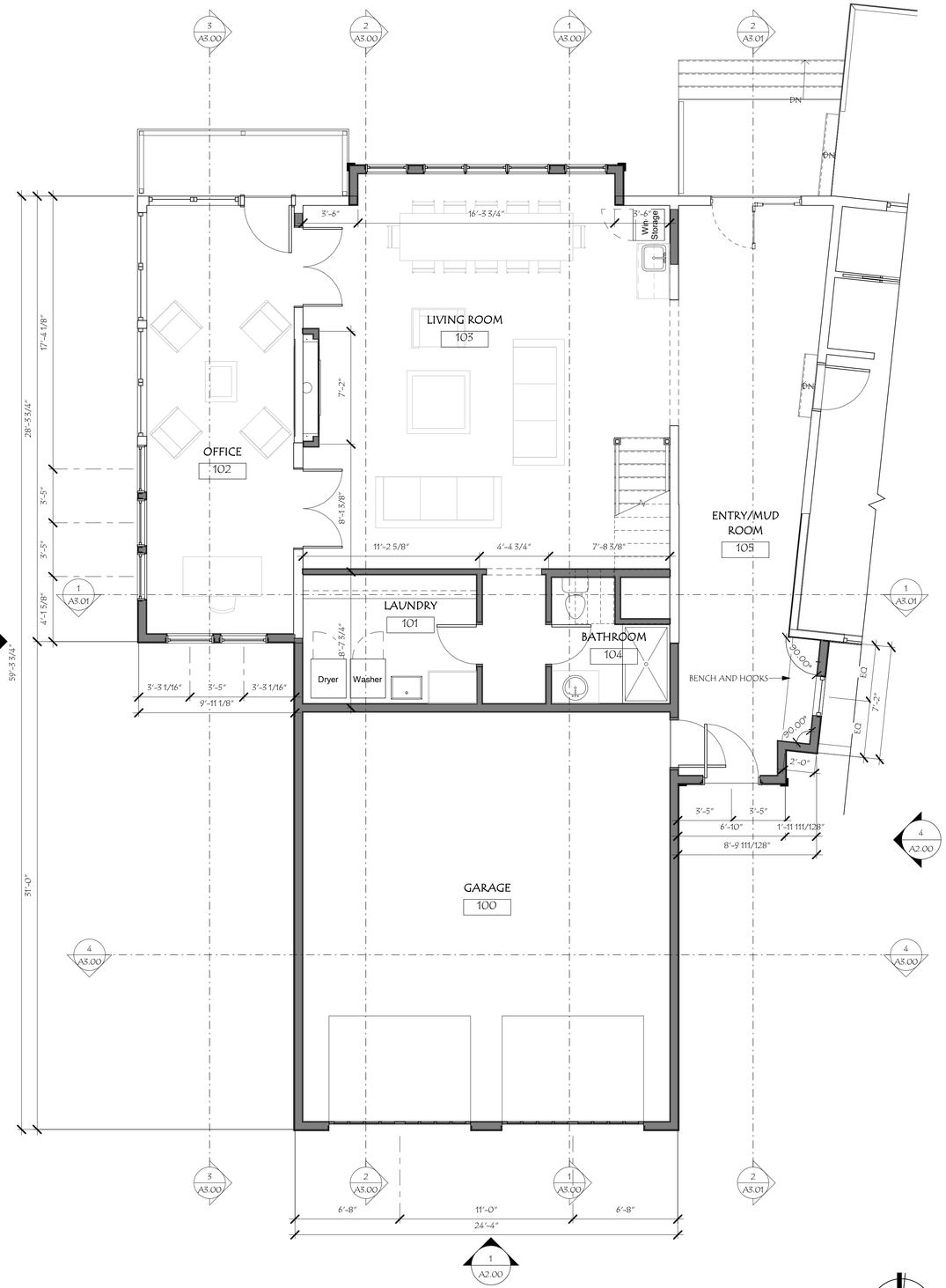
2022 Market Square Architects

12/1/2022 11:12:44 AM



2 SECOND FLOOR

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



1 FIRST FLOOR

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

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH. 603.501.0202

SAWTELLE RESIDENCE

476 6TH STREET
DOVER, NH 03820

NOT FOR CONSTRUCTION

Revisions:

Description	Date

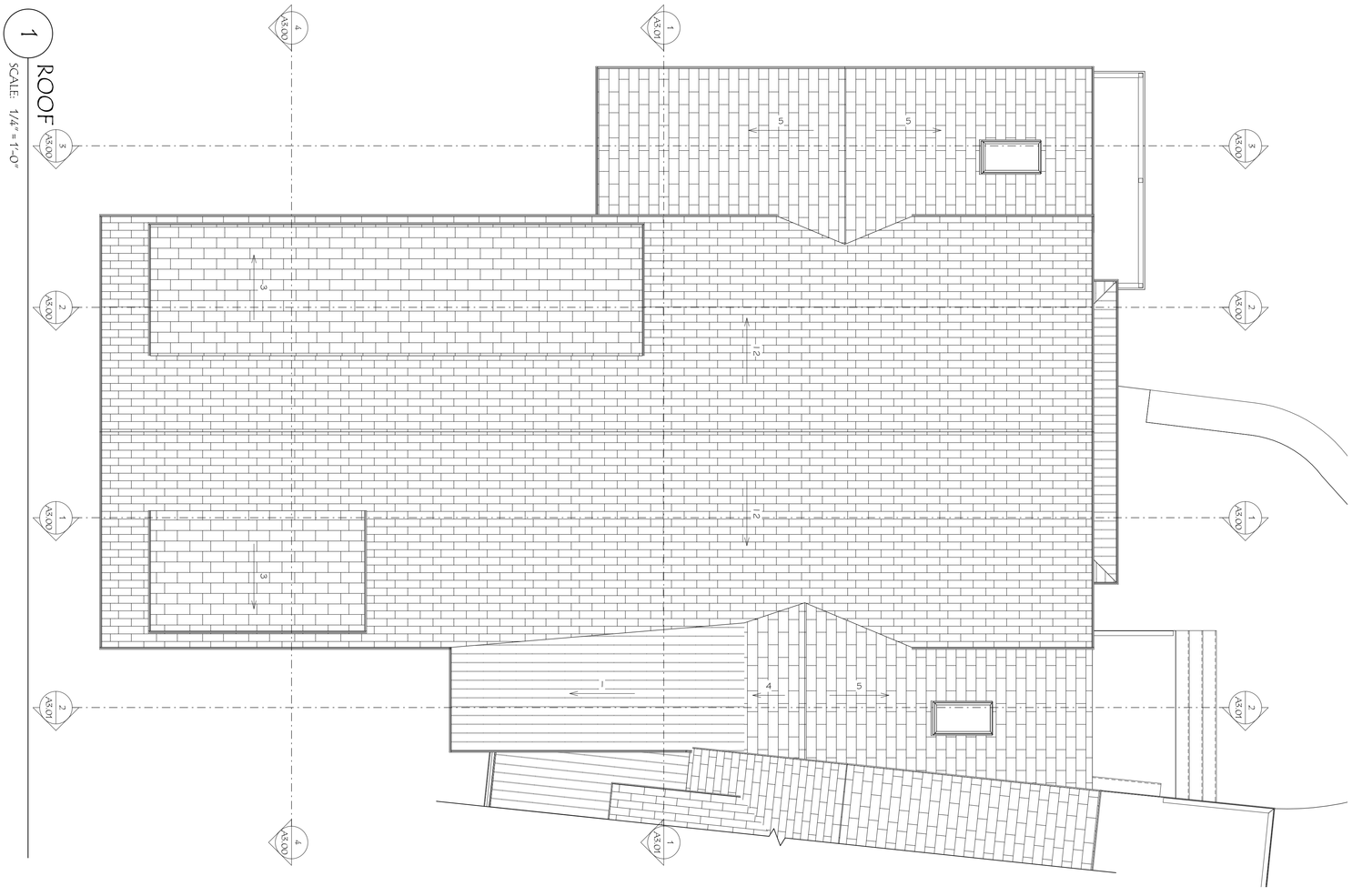
Scale: 1/4" = 1'-0"
Drawn By: ANR
Checked By: RJH
Project No.: 2022044
SCHEMATIC DESIGN
Date: 12/1/22

Title: OVERALL FLOOR PLANS

A1.01

© 2022 Market Square Architects

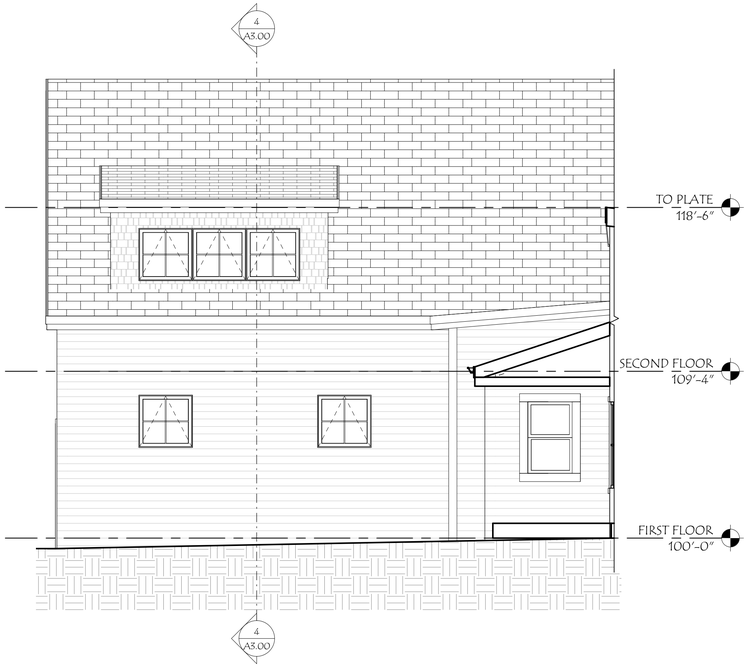
12/1/2022 11:43:45 AM



Title: OVERALL ROOF PLAN	Scale: 1/4" = 1'-0"	Revisions: Description Date	NOT FOR CONSTRUCTION	SAWTELLE RESIDENCE	MARKET SQUARE ARCHITECTS
A1.02	Drawn By: Author			476 6TH STREET DOVER, NH 03820	104 Congress St., STE 203 Portsmouth, NH 03801 PH: 603.501.0202
	Checked By: Checker				
	Project No.: 2022044				
	SCHEMATIC DESIGN				
	Date: 12/1/22				

Sheet 10 of 11

© 2022 Market Square Architects 12/1/2022 11:45:45 AM



4 RIGHT ELEVATION

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



2 LEFT ELEVATION

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



3 REAR ELEVATION

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



1 FRONT ELEVATION

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

MARKET SQUARE ARCHITECTS
104 Congress St., STE 205
Portsmouth, NH 03801
PH: 603.501.0202

SAWTELLE RESIDENCE

476 6TH STREET
DOVER, NH 03820

NOT FOR CONSTRUCTION

Revisions:

	Description	Date

Scale: 1/4" = 1'-0"
Drawn By: ANR
Checked By: RJH
Project No.: 2022044
SCHEMATIC DESIGN
Date: 12/1/22

Title: EXTERIOR ELEVATIONS

A2.00

2022 Market Square Architects

12/1/2022 11:43:46 AM

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: Tina M. Sawtelle Telephone # (603) 766-2172

Address of Applicant: 476 Sixth Street Dover, NH 03820

E-Mail Address: tsawtelle@themusichall.org

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # B Lot(s) # 1-C

Address of Property: 476 Sixth Street

Zoning District(s) R-40 Overlay District(s) Conservation District
Wetlands Protection District

Existing Use of Property: Single Family Residence

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:

Expansion of an existing single-family home in a previously disturbed area. No wetland impacts are proposed.

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

Name of Professional That Prepared Plans: Altus Engineering

Address 133 Court Street, Portsmouth, NH 03801 Telephone #: (603) 433-2335

Professional License #: PE - 7634 E-mail address: esaari@altus-eng.com

SIGNATURES

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

Signature of Property Owner: _____ Date: _____

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

Signature of Agent: _____ Erik Saari, Agent Date: 03/27/23
(See attached Letter of Authorization)

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: _____ Erik Saari (Agent) Date: 03/27/23
(See attached Letter of Authorization)

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
B	1-C	Tina M. Sawtelle	tsawtelle@themusichall.org

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Erik Saari	Altus Engineering	133 Court St., Portsmouth, NH 03801
Robert Harbeson	Market Square Architects	104 Congress St. Portsmouth NH 03801

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # 1 per Application = $ 200
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____

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

SUBTOTAL PLAN REVIEW FEE (A) = $ 200

AND

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

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

C. Foster's newspaper public notice fee $100.00 x # 1 applications = $ 100

SUBTOTAL NOTICE FEE (B & C) = $_____

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

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Summit Land Development, LLC Telephone # 603-749-2800

Address of Applicant: 340 Central Avenue, Suite 202 Dover, NH 03820

E-Mail Address: chad@summitlanddev.com

Name of Property Owner (if different from applicant): Westfield, LLC Telephone # 603-749-2800

Address of Property Owner: 340 Central Avenue, Suite 202 Dover, NH 03820

PROPERTY INFORMATION

Assessor's Map # G Lot(s) # 2

Address of Property: Littleworth Road

Zoning District(s) CM Overlay District(s) N/A

Existing Use of Property: Vacant

CONDITIONAL USE PERMIT INFORMATION

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

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

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

To allow impacts to the wetland buffer, totaling 16,679 s.f. for the construction and grading of the accessway, and grading associated with the installation of a bio-retention pond with internal resevoir.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status:
NH DES Alteration of Terrain (pending)
NH Department of Transportation Driveway Permit (pending)

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

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

Professional License #: NH PE #7978 E-mail address: shaight@civilworksne.com

SIGNATURES

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

Signature of Property Owner: _____ Date: 5/29/25

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 5/29/25

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
G	2	Westfield, LLC	340 Central Ave, Ste 202 Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Chad Kageleiry	Summit Land Development, LLC	340 Central Ave Ste 202 Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	PO Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	PO Box 1166 Dover, NH 03821

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

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

A. Plan Review Fees

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

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit =$_____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000)
  - New construction $.15 sq. ft. x # _____ sq. ft.= $_____
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☒ CONDITIONAL USE PERMIT Application fee $200.00 x # 1 per Application = $ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☐ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # _____ sq. ft. = $_____

SUBTOTAL PLAN REVIEW FEE = $ 200.00

AND

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

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

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $ _____

BALANCE DUE = $ _____

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

CONDITIONAL USE NARRATIVE
§170-27.1
WETLAND PROTECTION DISTRICT
CONDITIONAL USE APPROVAL REQUIREMENTS
for
Summit Land Development, LLC & Westfield, LLC
LIGHT INDUSTRIAL FACILITY
Tax Map G, Lot 2, Littleworth Road

F. Conditional use approval.

(a) Conditional use approval may be granted by the PLANNING BOARD (RSA 674:21II) after proper public notice and public hearing, for construction within the Wetland Protection District or buffer. Said construction may include but is not limited to a road or other accessway, utility right-of-way, communication lines, power lines and pipelines, structures, and parking lots provided that the proposed construction complies with the following standards: Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area.
The site design will not impact any wetlands. The site design incorporates unique site characteristics including existing slope, depth to estimated seasonal high water, and soil type to minimize wetland buffer impacts and maximize stormwater treatment for pollutant removal. The site layout is designed to limit the wetland buffer impacts for the construction of site access and associated grading, and stormwater treatment practices. Additionally, the area disturbed within the wetland buffer will be loamed and seeded with a conservation mix.

(b) Avoidance: The potential impacts have been avoided to the maximum extent practicable. The APPLICANT will demonstrate by plan and example that the proposed construction represents the least impacting alternative.
The proposed site design locates the building and parking areas upland of wetlands and wetland buffers. The wetland buffer impacts, totaling 16,679 s.f., are limited for the construction of site access and associated grading, and stormwater treatment practices.

(c) Minimization: Any unavoidable impacts have been minimized. No reasonable Alternative to the proposed construction exists which does not impact a wetland, or which has less detrimental impact on a wetland. Design, construction, and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and include restoration of the site as nearly as possible to its original grade.
All impacts have been minimized to the greatest extent practicable, including the use of 3:1 slope to help minimize grading within the wetland buffer. The wetland buffer impacts are limited for the construction of site access and associated grading, and stormwater treatment practices.

(d) Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.
Mitigation is not required. There will be no impact on wetlands.

(e) Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3), below.
There will be no impact on wetlands.

G. Specific provisions.

(1) Wetland Buffers.

(a) Buffers Established. Buffers are hereby established around and encircling all wetlands other than those that were created as legally permitted sedimentation/detention basins or roadside drainage ditches. The minimum width of the wetland buffers shall be fifty (50) feet horizontal distance as measured outward from the perimeter edge of the wetland. Wherever a permit to fill a wetland has been issued by either the New Hampshire Department of Environmental Services (NHDES) or the U.S. Army Corps of Engineers (USACOE), the perimeter of the wetland shall be deemed to be the new edge between the fill as placed in accordance with the permit and the remaining wetland. If there is no remaining wetland, there is no buffer. All other wetland edges shall be determined in accordance with Section D (1) above.
There are no proposed impacts to wetlands. A 50-foot wetland buffer is shown on the site plan, a portion of which will be impacted by the project design, for site improvements associated with the construction of the site access and stormwater treatment practices.

(b) Natural Conditions to be Maintained within Buffers. Where wetland buffer disturbance is allowed pursuant to a state or federal permit, or a conditional use permit, restoration of the disturbed area is required. Restoration is defined as filling ruts or excavated areas with similar soils while maintaining original grade. Applications for a City of Dover BUILDING permit that includes a temporary disturbance of wetlands buffers, pursuant to Section G (1) (e) (iv) below, shall include a "Wetlands Buffer Encroachment and Restoration Plan." Said plan shall be submitted, reviewed, and approved by Building Inspector, in consultation with City staff, prior to the disturbance. Replanting to restore buffers shall be with native non-invasive species specified in the "Wetlands Buffer Encroachment and Restoration Plan". Implementation of the plan shall include the clear delineation of the boundaries of wetland buffers in the field using construction tape or other clear marking devise. Mowing to maintain an existing lawn or field within a wetland buffer area is allowed without a permit, as specified in Section G (1)(e), below, provided the roots of the vegetation are not disturbed and the ground is frozen or sufficiently dry to avoid making ruts.
The wetland buffer impact for this project will be primarily of a permanent nature as allowed by obtaining a Conditional Use Permit. Some areas being impacted by typical grading around the site will be restored as much as is practical as a maintained lawn area.

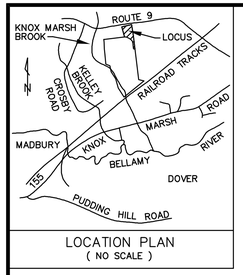
(c) Certain Uses Prohibited in Buffers. The following uses and activities are prohibited within a wetland buffer: DOVER CODE P 170-107 (i) The establishment or expansion of salt storage, JUNKYARDs, resource recovery facilities, transfer stations, landfills, or solid or hazardous waste facilities; (ii) The BULK storage of chemicals, petroleum products, or toxic and hazardous materials; (iii) The dumping or disposal of snow and ice collected from roadways and parking LOTs;
Not applicable.

(d) Uses Allowed Only with a Conditional Use Permit. The following uses and activities are allowed within a wetland buffer only if a conditional use permit is obtained in accordance with Section F above: (i) All uses not specifically prohibited in Section G (1) (c) above or specifically exempted in Section G (1) (e) below. (ii) The erection or construction of a BUILDING or STRUCTURE, excluding FENCEs that meet the requirements of 170-33, or the construction of parking LOTs or loading areas. (iii) Timber harvesting, except as conducted in accordance with the terms and provisions of RSA 227-J, Timber Harvesting. (iv) The removal of stumps and roots (grubbing), the recontouring or grading of the land, or the placement of impervious surfaces or creation of storm water detention ponds. (v) The installation of water, sewer, or buried electrical or telecommunications cables. (vi) The installation of water supply wells.
A Conditional Use Permit is being requested to allow for construction of site access and stormwater management practices, and associated grading within the wetland buffer for this project.

(e) Uses Allowed Without a Conditional Use Permit. The following uses and activities are allowed within a wetland buffer with the noted conditions: (i) Activities within wetlands jurisdictional areas that are allowed without a State of New Hampshire Dredge and Fill Permit, in accordance with NHDES Rules Env-Wt 308.01(a) and 308.02 – repair of an existing legal STRUCTURE; or successor rules. (ii) The removal of vegetation in accordance with NHDES Rules Env-Wt 303.05(b), or successor rules, provided the roots of the vegetation are ZONING P 170-108 not disturbed, and the ground is frozen or sufficiently dry to avoid making ruts. (iii) The installation of monitoring or test wells or geotechnical borings completed in accordance with NHDES Rules Env-Wt 309.02(i) or successor rules. (iv) Temporary disturbance of the wetland buffer to facilitate construction activities completed under a valid City of Dover BUILDING permit, provided the temporary disturbance is restored in accordance with Section G (1) (b) above.
Not applicable.

(2) No septic tank or leach field may be constructed or enlarged closer than seventy-five (75) feet to any Wetland Protection District. In new subdivisions approved subsequent to adoption of this section, there must be sufficient LOT size to place a house, a state-approved septic system, where applicable, and a state-approved well, where applicable, without locating them in a wetland. This provision can be waived if conditional use approval is obtained from the PLANNING BOARD. **Not applicable.**

(3) A state dredge and fill application shall be submitted for any proposed change to a wetland (RSA 482-A). **Not applicable.**



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - GPS OBS.

WESTFIELD ROAD
50' WIDE R.O.W.

LITTLEWORTH ROAD
NH ROUTE 9
VARIABLE WIDTH R.O.W.

PROPOSED 8" SINGLE ROW SILTSOXX (TYP)

PROPOSED 8" DOUBLE ROW SILTSOXX (TYP)

PROPOSED 8" DOUBLE ROW SILTSOXX (TYP)

PROPOSED 8" SINGLE ROW SILTSOXX (TYP)

PROPOSED CHECK DAM (TYP)

PROPOSED HEADWALL INV.OUT=115.50'

PROPOSED HEADWALL INV.OUT=116.50

WETLAND BUFFER IMPACT "A"

WETLAND BUFFER IMPACT "B"

DRAINAGE DITCH (TYP.)

EDGE OF WETLAND (TYP.)

24" HDPE CULVERT
INV. IN = 102.15'
INV. OUT = 101.66'

48" HDPE CULVERT
INV. IN = 101.72'
INV. OUT = 101.34'

24" HDPE CULVERT
INV. IN = 102.9'
INV. OUT = 102.6'

50' WIDE EASEMENT S.C.R.D. 5064/604

F.F.=119.25

G PP

TC 112.02
BC 111.52
TC 111.03
BC 110.53
TC 111.27
BC 110.77
TC 113.05
BC 112.55
TC 110.50
BC 110.0 (L.P.)
TC 110.80
BC 110.30
TC 112.08
BC 111.58
TC 112.32
BC 111.82
TC 111.10
BC 110.60
TC 111.69
BC 111.19
TC 113.50
BC 113.00
TC 112.42
BC 111.92
TC 113.25
BC 112.75
TC 113.55
BC 113.05 (H.P.)
TC 114.75
BC 114.25
TC 113.80
BC 113.30
TC 115.40
BC 114.90
TC 115.35
BC 114.85
TC 115.55
BC 115.05
TC 115.10
BC 114.60
TC 115.47
BC 114.97
TC 112.78
BC 112.28
TC 111.00
BC 110.50
TC 110.65
BC 110.15
TC 112.50
TC 119.10
BC 118.60
TC 118.80
BC 118.30
TC 118.45
BC 117.95
TC 118.65
BC 118.15
TC 118.35
BC 117.85
TC 118.15
BC 117.66
TC 118.07
BC 117.57
TC 117.95
BC 117.45
TC 120.91
BC 120.41
TC 118.35
BC 117.85
TC 118.17
BC 117.67
TC 119.10
BC 118.60
~123.14
~123.4
122.80
~123.82
119.83
120.71
119.53
118.30
117.55
118.35
119.00
H.P.
113.95
H.P.
111.31
111.82
112.85
114.25
113.30
119.15
119.20
115.11
115.25
119.40
105.25
107.0
110.30
112.50

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
UP – UTILITY POLE
SMH – SEWER MANHOLE
– WATER SHUT-OFF
– WATER GATE VALVE
– FIRE HYDRANT
92 – CONTOUR LINE – 1' INTERVAL
– EDGE OF WETLAND
– WETLAND
– WETLAND BUFFER
92.0 – PROPOSED FINISH GRADE
x 92.0 – PROPOSED SPOT ELEVATIONS
PD – PROPOSED DRAIN LINE

CONDITIONAL USE PERMIT
WETLAND BUFFER IMPACTS

IMPACT	AREA
A	8,010 S.F.
B	8,669 S.F.
TOTAL	16,679 S.F.

– PROPOSED WETLAND BUFFER IMPACTS

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

PLANNING FILE NO.: SITE

GRADING & EROSION CONTROL PLAN

TAX MAP C, LOT 2
LITTLEWORTH ROAD
DOVER, NH

WESTFIELD, LLC
340 CENTRAL AVENUE
SUITE 202
DOVER, NH 03820

7

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

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

NO.	REVISION	APP'D	DATE

DATE: 5-29-25
SCALE: 1"=40'
DRAWN BY: SRD
DESIGN BY: SJH
APPROVED BY:SJH
PROJECT NO:18043
FILE: SITE

PERMIT SNAPSHOT REPORT COND-2025-0013
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	06/24/2025
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Edgecomb, Makayla	**Approval Expire Date:**	

Description: For impact to 16,679 sf of wetland buffer associated with the construction of an access way and installation of a retention pond.

Parcel: G0002-000000 Main	**Address:** Littleworth Rd Main Dover, 03820	**Zone:** CM(Non-Residential - Commercial Manuf

Plan Preparer	Applicant	Owner
Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Civilworks New England Steve Haight 181 Watson Road PO Box 1166 Dover, NH 03820 Business: (603) 749-0443 Mobile: (603) 817-6651	Summit land Development 340 central ave 202 dover, NH 03820 Business: (603) 749-2300

Permit Custom Fields

Select Permit Type	Wetland Protection District	General Purpose	New Construction	Project Zone	Non-Residential
What is the parcel zoned?	CM	Work	To allow impacts to the wetland buffer, totaling 16,679 s.f. for the construction and grading of the access way, and grading associated with the installation of a bio-retention pond with internal reservoir.	permitstatefed	NH DES Alteration of Terrain (pending) NH DOT Driveway Permit (pending)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Steve_Haight_6/24/2025.jpg	06/24/2025 17:54	Haight, Steve		Uploaded via CSS
Permit Snapshot Report.pdf	06/24/2025 17:55	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot

Invoice No.	Fee	Fee Amount	Amount Paid
INV-2025013031	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-2025013031	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	In Review	06/25/2025	07/23/2025		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	In Review	06/25/2025	07/23/2025	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/25/2025 11:06	
Confirm application complete v.1	Generic Action		06/25/2025 11:07
Conditional Use Review v.1	Receive Submittal	06/25/2025 0:00	
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		

Planner Creates Staff Recommendations v.1	Permit Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Internal Notification of Plan Completion v.1	Generic Action
Recording v.1	Task